Geochemical Investigation of Kerale Area

Interpretive Report

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Chris Gimber
Partner in Charge

Environmental Resources Management
Australia Pty Ltd
Level 14, 207 Kent Street
Sydney NSW 2000
T +61 2 8584 8888

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
°C	Degrees Celsius
µS/cm	MicroSiemens per centimetre
ABA	Acid base accounting
AMD	Acid and metalliferous drainage
ANC	Acid neutralising capacity
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
AOC	Area of concern
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013)
ASLP	Australian Standard Leaching Procedure
bgl	Below ground level
CoC	Chain of custody
COPC	Contaminant of potential concern
CRS	Chromium reducible sulfur
CSM	Conceptual site model
DETSI	Department of Environment, Tourism, Science and Innovation
DI	Deionised
EA	Environmental authority
EC	Electrical conductivity
Eh	Redox potential
ELIP	Environmental Legacy Identification Program
ERM	Environmental Resources Management Australia Pty Ltd
GCAA	Glencore Coal Assets Australia
GPS	Global positioning system
HES	High ecological significance
kg	Kilogram
km	Kilometre
KTP	Kerale test pit
LOR	Limit of reporting
LOSP	Level of species protection
m	Metre
mg/L	Milligrams per litre
MPA	Maximum potential acidity
NAF	Non-acid forming

Acronym	Description
NAG	Net acid generation
NAPP	Net acid production potential
NATA	National Association of Testing Authorities
NUMA	Non-use management area
PCA	Principal component analysis
PAF	Potentially acid forming
pe	Potential of electrons
pH	Potential of hydrogen
PRC Plan	Progressive rehabilitation and closure plan
QA/QC	Quality assurance/quality control
SAQP	Sampling, analysis and quality plan
SHE	Standard hydrogen electrode
SI	Saturation index
SPR	Source-pathway-receptor
t	Tonne
TAA	Titratable actual acidity
Total S	Total sulfur
UC	Uncertain
USCS	Unified Soil Classification System
USGS	United States Geological Survey

EXECUTIVE SUMMARY

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Glencore Coal Assets Australia to undertake a geochemical investigation of the Kerale Area at Collinsville Open Cut. The purpose of this assessment was to characterise the distribution and form of acidity in soils, understand the geochemical processes controlling its persistence and mobilisation and develop a conceptual site model to support closure planning.

PRIMARY SOURCE OF ACIDITY

Available data suggests that acidity within the Kerale Area is primarily derived from soils associated with the former lime dosing facility. Residual materials from historical acid and metalliferous (AMD) neutralisation have resulted in the formation of secondary sulfate (SO_4) minerals, which represent the dominant source of stored acidity. These materials are concentrated within the former lime dosing footprint and along adjacent drainage pathways, where they form a significant and persistent solid-phase reservoir of acidity and associated metals.

The investigation confirms that sulfide content is negligible across the site, and that current acidity is not generated by ongoing sulfide oxidation. Instead, acidity reflects the breakdown of previously formed secondary minerals.

PERSISTENCE OF ACIDIC CONDITIONS

The persistence of acidic conditions across the Kerale Area appears to be controlled by the slow dissolution of secondary sulfate minerals. These minerals release acidity progressively over time, resulting in sustained acidic conditions within soils and porewater.

This behaviour is reinforced by the limited capacity for neutralisation. Carbonate minerals are largely absent across the drainage pathway and broader catchment, meaning that once acidity is released there is no effective buffering mechanism at the site scale. As a result, acidic conditions persist both within the former facility footprint and across downgradient areas.

SURFACE WATER BEHAVIOUR

Surface water monitoring indicates that Kerale Dam has exhibited persistently acidic conditions since approximately 2011, with pH typically ranging between approximately (~) 3 and 5. These conditions are accompanied by elevated salinity and sulfate, as well as elevated concentrations of dissolved metals, particularly aluminium (Al) and manganese (Mn). Water quality is strongly influenced by seasonal conditions. During dry periods, evaporation concentrates dissolved constituents, resulting in peak salinity and metal concentrations, while wetter periods result in dilution and temporary improvement in water quality.

UPSTREAM AND DOWNSTREAM CONDITIONS

Upstream conditions at Pelican Creek are neutral to slightly alkaline and show low variability, representing background water quality conditions unaffected by the Kerale Area. The mine-influenced reach at CCP330521 and CCP330522 exhibits clear temporal variability, characterised by intermittent increases in metals, sulfate and salinity.

These elevated concentrations occur as short-duration spikes clustered within specific monitoring periods, rather than as sustained increases. The most pronounced clusters are observed during 2013, 2016-2017, and a smaller number of events in 2018, during which

multiple parameters (including Al, copper (Cu) and zinc (Zn)) increase at the same time at both CCP330521 and CCP330522.

Outside of these periods, water quality at CCP330521 and CCP330522 is generally comparable to upstream conditions, with most parameters remaining low and relatively stable. This demonstrates that elevated concentrations are not persistent, and do not reflect a continuous source. Instead, they represent intermittent responses to specific conditions.

In contrast, more recent monitoring data (2019-2025) show fewer and less pronounced spikes, with longer periods of stable water quality. This suggests that while the system continues to respond to episodic conditions, the overall frequency and magnitude of mobilisation have reduced over time, although this change cannot be attributed to a single process and instead reflects the combined effects of residual source evolution and changing conditions across the monitoring record.

METAL STORAGE AND MOBILITY

Metals within the Kerale Area are predominantly stored in soils as part of secondary mineral assemblages formed during historical lime dosing. Elevated total concentrations of Al, iron (Fe), Mn and cobalt (Co) within the former lime dosing footprint indicate a substantial solid-phase reservoir of metals associated with these materials.

Dissolved metal concentrations, based on ASLP leachate results, are generally low across most samples but increase at specific locations where acidic conditions are present. The highest dissolved Al and Fe concentrations (up to ~13.9 mg/L Al and ~14.8 mg/L Fe observed along the drainage pathway at locations such as KTP16, KTP19 and KTP23) occur where leachate pH ranges from mildly acidic to near neutral. In contrast, samples from the former lime dosing footprint (e.g. KTP04) contain very high total metal concentrations but low dissolved concentrations, including at KTP04-3, indicating that metals are largely retained in solid phases under current conditions.

This demonstrates that dissolved metals are not uniformly elevated across the site, but instead occur where local conditions favour mineral dissolution, particularly under acidic conditions associated with the instability and breakdown of secondary sulfate minerals. Secondary sulfate minerals such as jarosite dissolve in moderately acidic to near-neutral conditions (~pH>4-5), where they become unstable and release stored acidity and associated metals into solution.

Metal release is therefore controlled by pH-dependent solubility and mineral stability within the soil profile, reflecting localised mobilisation from solid-phase reservoirs rather than consistent mobility throughout the system.

Under current conditions, the high concentration of metals in soil at and around the lime dosing pond and along the drainage line are largely immobile and remain bound within mineral phases. Their mobilisation is controlled by the dissolution of secondary sulfate minerals, which occurs as acidity is released and residual lime is progressively depleted. Metal behaviour is therefore closely linked to mineral stability and acidity generation, rather than continued inputs from sulfidic materials (i.e. active AMD generation) and associated advective transport (leaching).

This indicates that metal release is governed by the gradual breakdown of stored materials; however, this process is not uniform through time and may occur intermittently under

changing conditions, reflecting the combined influence of residual lime, stored sulfate minerals, and evolving site conditions rather than a simple, continuously declining system.

CONCEPTUAL SITE MODEL

The conceptual site model identifies the former lime dosing facility as the primary source of stored acidity within the Kerale Area. Kerale Dam functions as an intermediate accumulation zone for acidity transported from upgradient soils, rather than as a primary source, with soils along the central drainage pathway extending from the former lime dosing facility toward the dam embankment also acting as secondary source areas where stored acidity and metals are mobilised over time.

Acidity is mobilised from soils containing secondary sulfate minerals through dissolution and subsequent transport via surface runoff and shallow subsurface pathways, particularly during wet conditions. However, transport is not uniform and is predominantly focused along the central drainage line, and is limited by the shallow and low-velocity nature of groundwater flow and the ephemeral nature of surface drainage pathways.

Kerale Dam primarily acts as a receptor for acidity and dissolved constituents mobilised from upgradient soils; however, during periods of elevated water levels following rainfall, increased hydraulic gradients may promote limited seepage into underlying and downgradient alluvial sediments, providing a potential pathway for groundwater transport.

As a result, the movement of acidity and associated contaminants is spatially limited and controlled by localised processes within the catchment, including mineral dissolution within source soils and transport along defined drainage pathways rather than uniform migration across the site. Attenuation processes, including dilution, mixing, evapoconcentration and episodic recharge within the shallow alluvial system and ephemeral tributary, further reduce concentrations along the flow path toward downstream receptors.

Downstream receptors include the ephemeral tributary of Pelican Creek and Pelican Creek itself, as well as potential aquatic groundwater-dependent ecosystems associated with these systems. These receptors are only considered to be exposed intermittently, primarily during wet-season conditions when surface runoff and recharge occur.

Based on the available data, the potentially complete source-pathway-receptor linkages are as follows:

- Seepage of acidity and dissolved metals from Kerale Dam and surrounding soils into the shallow alluvial system downgradient of the embankment, driven by low-rate groundwater flow through weathered sediments.
- Mobilisation of acidity and metals from soils south of the dam via surface runoff to the ephemeral tributary during rainfall events, resulting in short-term and intermittent exposure.
- Combined groundwater and surface water transport through the alluvial system toward Pelican Creek, with long transport distances and low flow velocities resulting in significant attenuation and limited potential for sustained downstream impacts.
- Intermittent interaction between seepage, runoff and shallow groundwater with potential groundwater-dependent ecosystems along the tributary and Pelican Creek, with exposure dependent on seasonal conditions and subject to uncertainty.

However, slow groundwater velocities, long transport distances (~2.7 km to Pelican Creek) and the ephemeral nature of surface water flow indicate that the above linkages are subject to significant attenuation and are unlikely to result in sustained impacts to downstream receptors, such as groundwater-dependent ecosystems.

On the basis that lime dosing at COL ceased in the early 2000s, the system has now evolved over approximately 25 years into a post-treatment condition, where geochemical behaviour is controlled by the residual inventory of stored material. Interpretation of earlier monitoring data is not straightforward, as those periods likely reflect a combination of factors, including higher availability of residual lime, mobilisation of stored sulfate minerals, and site activities that are not well documented during past ownership of the mine.

OVERALL CONCLUSIONS

The Kerale Area represents a legacy AMD system in which acidity and metals are stored in secondary mineral phases formed during historical lime dosing activities. These materials continue to release acidity over time through gradual dissolution, with mobilisation occurring preferentially along defined drainage pathways rather than uniformly across the site, resulting in persistent acidic conditions within soils.

Metal behaviour reflects this same process, with metals retained in solid phases and only mobilised as acidity is released. The system is therefore controlled by the long-term evolution of stored materials rather than continued inputs from sulfidic materials (i.e. active AMD generation.

Secondary sulfate minerals represent a finite reservoir of stored acidity within the system. Continued dissolution of these minerals is expected to release acidity over time and may increase metal mobilisation in currently less reactive areas as geochemical conditions evolve.

Overall, the investigation demonstrates that acidity and metal behaviour in the Kerale Area are internally driven, spatially variable and governed by mineralogical controls established during past AMD management practices, with transport and exposure further constrained by drainage-focused pathways, episodic runoff and limited groundwater flow.

1. INTRODUCTION

1.1 GENERAL

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Glencore Coal Assets Australia (GCAA) to undertake a geochemical assessment of the Kerale Area at the Collinsville Open Cut operation (referred herein as 'COL'). The Kerale Area in this document is defined as the Kerale Dam (comprising the dam embankment and the dam inundation extent at its full supply level of 141.5 m Australian Height Datum (AHD)), the location of the former lime dosing facility, and the area downstream of the Kerale Dam, in particular along the alluvial system associated with the ephemeral tributary of Pelican Creek.

The Collinsville Mine is Queensland's oldest operating coal mine, producing thermal and coking coal for both overseas and domestic markets. Located approximately 80 kilometres (km) from Bowen in the northern part of Queensland's Bowen Basin, the operation is a wholly owned subsidiary of Glencore Coal Assets Australia (GCAA), which is part of Glencore Public Limited Company (PLC). The Collinsville Mine is shown spatially in its local and regional context in Figure 1-1.

The geochemical assessment is reported in two separate documents: the Kerale Area Geochemical Assessment Factual Report (ERM, 2026), and this interpretation report. This interpretation report describes the likely processes contributing to the observed acidity in the Kerale Area. This report should be read in conjunction with ERM (2026) and the limitations presented in Section 7.

1.2 BACKGROUND

Historical mining activities at COL generated acid and metalliferous drainage (AMD), which was, in part, managed through the operation of a lime dosing facility located in the upper catchment of the Kerale Dam. The facility operated from the early 1990s until its decommissioning in the early 2000s. Following decommissioning, residual materials associated with the facility, such as secondary minerals produced during the lime treatment of AMD water, are believed to be contributing to the acidic water conditions within the dam. Historical water quality data showed near neutral conditions in 2004 (pH~6) while the lime dosing facility was likely still operational, with consistently acidic conditions (pH~4) since 2011, after the facility was decommissioned.

The basis of this investigation is the preliminary assessments undertaken during 2025 which suggested that residual materials from the historical lime treatment of AMD water in the former lime dosing facility may be influencing downstream conditions through runoff or seepage. To better understand the existing geochemical setting of the Kerale Area and the processes likely to be attributing to the observed acidity (pH~4) in surface water held within the dam impoundment, and in groundwater downgradient of the dam embankment, a geochemical assessment of the soils in the Kerale Area has been undertaken.

The layouts of COL and Kerale Area are displayed in Figure 1-2 and Figure 1-3 respectively. The latter figure also contains the original footprint from 1991 design drawings and the inundation extent of water from a 2011 satellite image of the area

FIGURE 1-1 COLLINSVILLE MINE LOCATION IN LOCAL AND REGIONAL CONTEXT

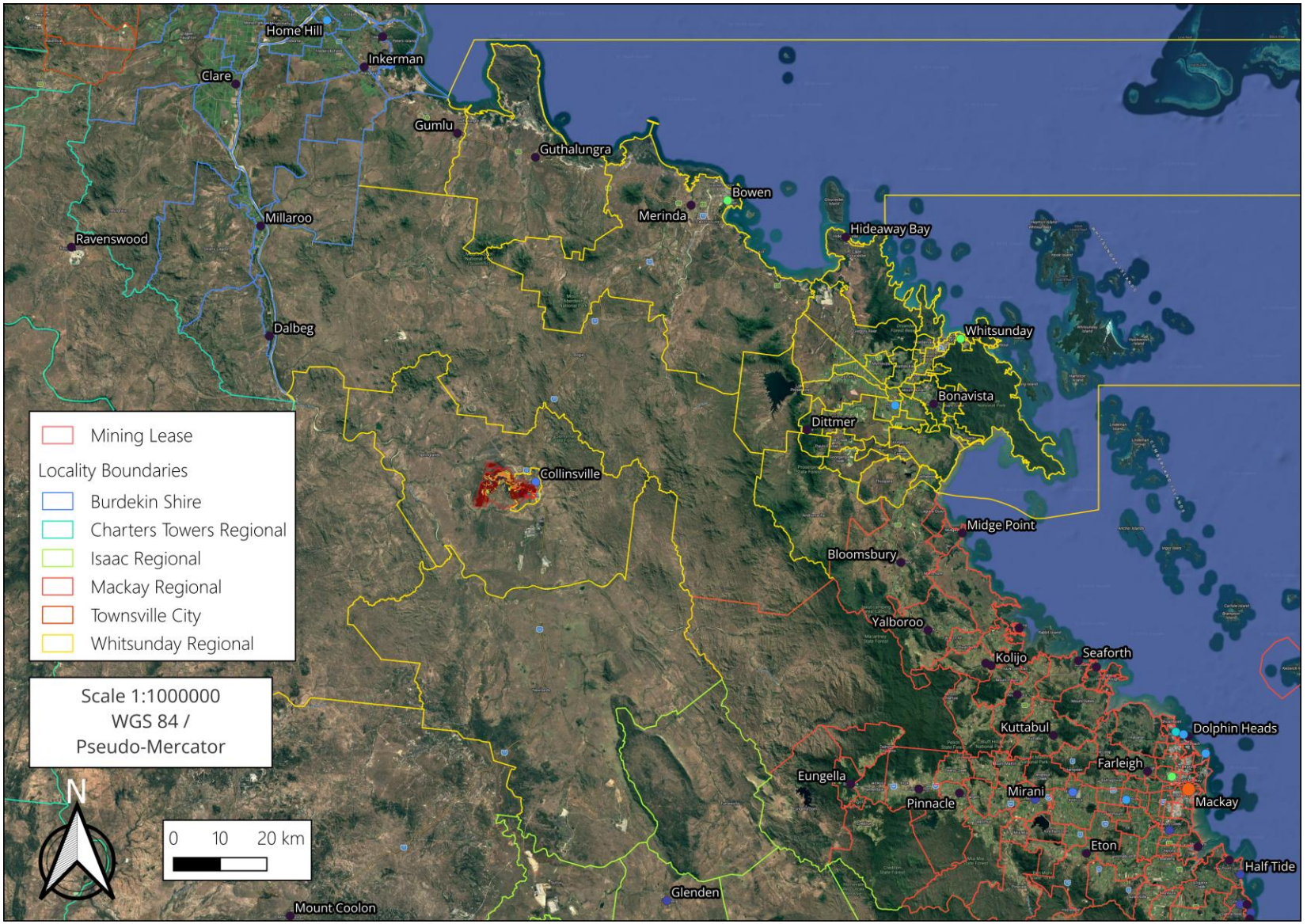


FIGURE 1-2 COLLINSVILLE MINE LAYOUT AND FLUVIAL NETWORKS

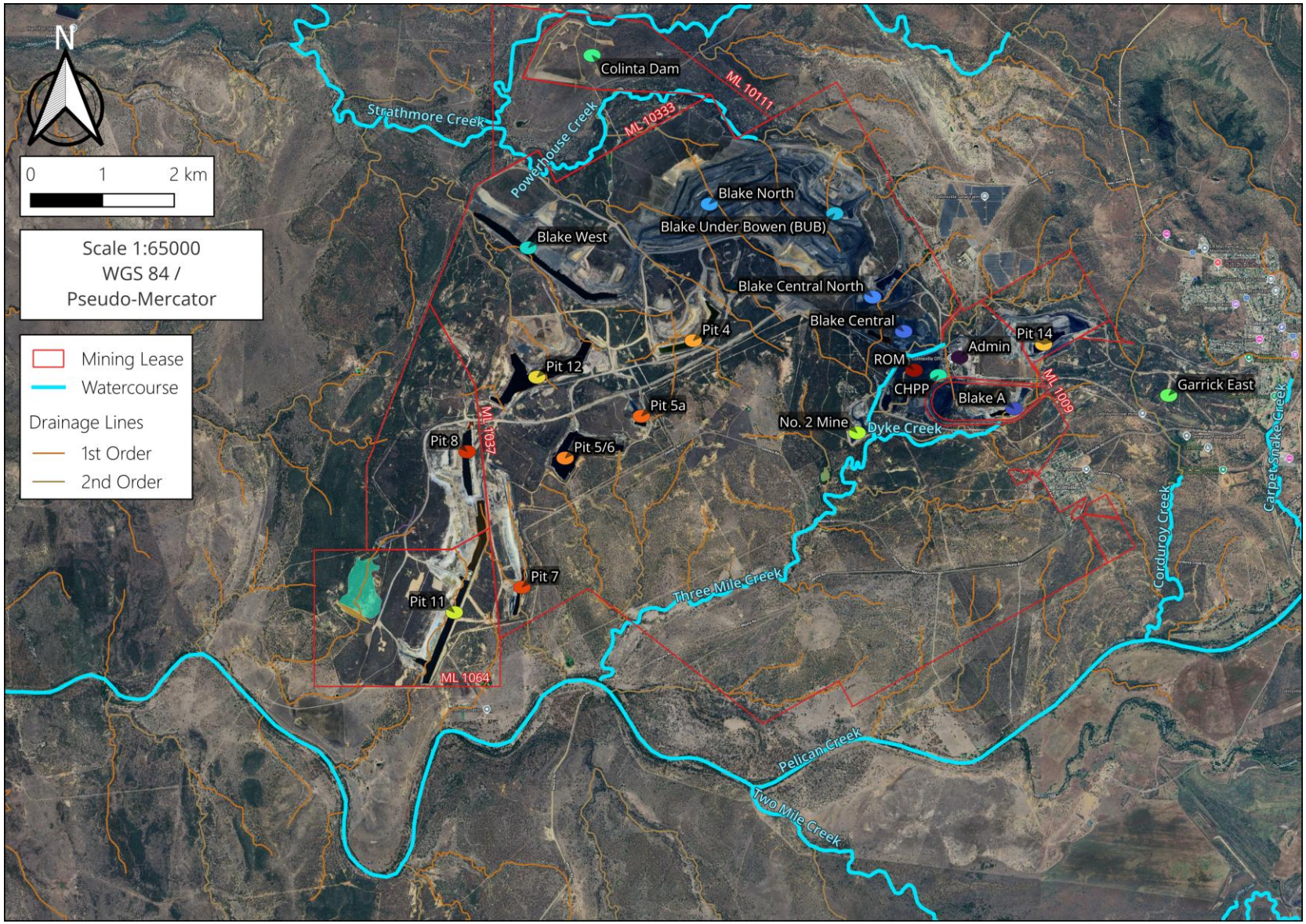
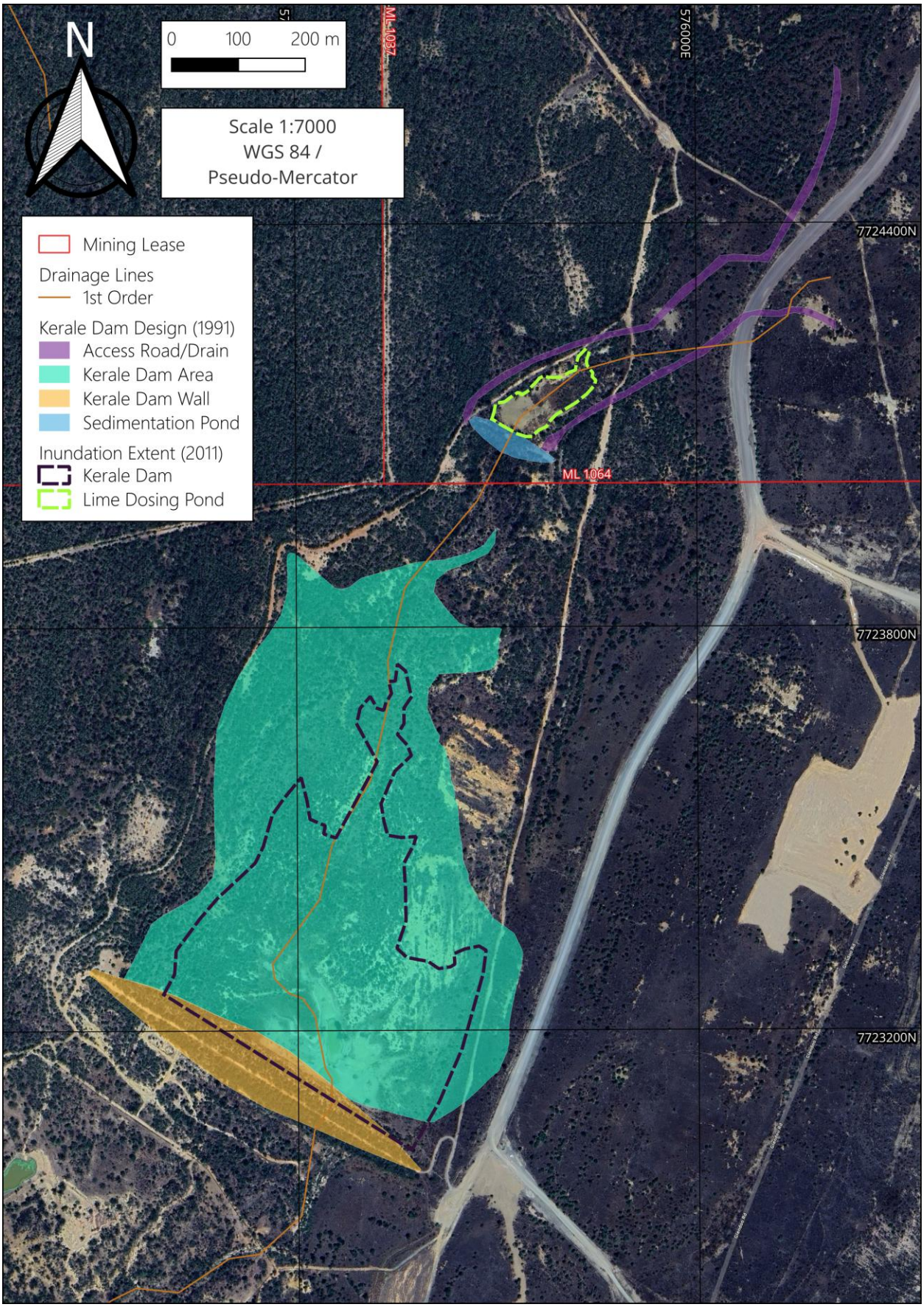


FIGURE 1-3 KERALE AREA LAYOUT WITH DESIGN FOOTPRINT FROM 1991 AND WATER INUNDATION OUTLINES FROM 2011



1.3 OBJECTIVES

The overarching objectives of this investigation are to:

- Characterise geochemical conditions within the Kerale Dam and surrounds associated with historical AMD management activities and current conditions; and
- Support post-mining land management and closure planning by improving understanding of the sources, behaviour and persistence of acidity within the Kerale Dam and surrounds.

The technical objectives of this investigation are, for the Kerale Dam and surrounding area, to:

- Assess the presence, distribution and geochemical form of acidity and associated constituents within soils, porewater and shallow groundwater;
- Evaluate the geochemical processes controlling acidity generation, storage, mobilisation and attenuation;
- Integrate results of geochemical, hydrogeological and statistical analyses to develop a conceptual site model (CSM); and
- Identify and assess potential source-pathway-receptor (SPR) linkages, consistent with an environmental investigation framework.

1.4 SCOPE

The scope of this assessment comprises interpretation of geochemical data collected as part of the Kerale Area soil investigation reported in ERM (2026), together with integration of relevant surface water and groundwater chemistry data available for the Kerale Dam area. The assessment focuses on evaluating the distribution, form and behaviour of acidity and associated constituents within soils, porewater and shallow groundwater, and on developing a CSM for the investigation area.

The COL operation has an extensive monitoring record, providing a substantial amount of historical data. To support interpretation of the Kerale Dam assessment results, principal component analysis (PCA) was applied as a multivariate statistical tool to examine relationships between soil leachate chemistry and groundwater datasets, and to identify the dominant geochemical parameters controlling variability within and between datasets. Geochemical equilibrium modelling using PHREEQC was also undertaken to assess mineral controls on porewater and groundwater chemistry and to support interpretation of acidity persistence and attenuation mechanisms.

This assessment is limited to evaluation of geochemical processes and pathways operating within the Kerale Dam catchment and immediate downgradient area.

1.5 LEGISLATION AND GUIDANCE

This report has been prepared with reference to the following regulations, guidelines and policy documents:

- *Environmental Protection Act 1994* (Queensland).
- Environmental Protection Regulation 2019 (Queensland).
- Environmental Authority EPML00332013, including applicable groundwater and release water quality trigger limits.

- Progressive rehabilitation and closure plan (PRCP) guideline (DETSI, version current at time of assessment).
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2025).
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (ASC NEPM), used for contextual reference only.
- Queensland Acid Sulfate Soil Technical Manual – Soil Management Guidelines V5.1 (Dear, 2024).
- The global acid rock drainage guide (GARD Guide) (INAP, 2014).
- AMIRA (2002) ARD Test Handbook (AMIRA P387A), for AMD classification criteria.
- Hazelton and Murphy (2025), Interpreting soil test results: What do all the numbers mean? (CSIRO Publishing).

These documents were used to guide the interpretation of geochemical data and to provide context for assessment of acidity, salinity, and metal mobility within the Kerale Dam area. Where guidelines are referenced, they are applied for interpretive purposes and do not constitute regulatory compliance assessment unless explicitly stated.

1.6 REPORT STRUCTURE

This structure of this report includes the following sections:

- Section 1 – Introduction: Comprising background, objectives, scope, legislation and guidance and report structure;
- Section 2 – Kerale Area Setting: Description of the topographical setting, historical and current activities, and environmental setting of the Kerale Area;
- Section 3 – Investigation Methodologies: The investigation methods used in this assessment;
- Section 4 – Results and Analysis: Includes summary results from the factual geochemical report, geochemical modelling and statistical assessment;
- Section 5 – Conceptual Site Model: presents the CSM for the Kerale Area;
- Section 6 – Conclusions: Provides a summary of the key assessment findings;
- Section 7 – Statement of Limitations: Describes the limitations of this study.
- Section 8 – References: Provides a list of references used throughout this document.

Appendices, tables and figures present additional and supporting information.

2. KERALE AREA SETTING

The following sections provide a summary of the site setting for the Kerale Area at COL.

2.1 IDENTIFICATION

The location of the Kerale Area is shown in Figure 1-3. Identification details for the Kerale Area are summarised in Table 2-1.

TABLE 2-1 SITE IDENTIFICATION INFORMATION

Item	Description
Name	Kerale Area
Site Address	Collinsville, QLD 4804
Mining Lease	ML1064, ML1037
Ownership	Glencore Coal Assets Australia Pty Ltd
Approximate Area	80 ha
GDA2020 Latitude/Longitude	Centroid: -20.58605 / 147.72440
Local Government Area	Whitsunday Regional

2.2 SUMMARY OF HISTORICAL AND CURRENT ACTIVITIES

2.2.1 HISTORICAL ACTIVITIES

COL has a long history of coal mining dating back to the early twentieth century, with open cut operations progressively replacing underground mining from the 1950s onwards. AMD generated by mining activities was a recognised environmental management challenge throughout much of this period, leading to the establishment of a lime dosing facility in the upper catchment of the Kerale Dam, which commenced operation in the early to mid-1990s.

The lime dosing facility operated by collecting AMD water in a series of pits, which was then transferred to an evaporation facility before being introduced to the lime dosing plant. The plant comprised a 50 tonne (t) dry lime silo, a mixing tank and a slurry tank. Lime was dosed at ~2,800 milligrams per litre (mg/L) to raise the pH of the AMD water from ~2.5 to 6.5. The resulting neutralised water was released into the Kerale Dam and, when specific conditions were met, released to an ephemeral creek leading to Pelican Creek.

This neutralisation process is believed to have precipitated dissolved metals out of solution as, and associated with, iron and aluminium hydroxides and gypsum, generating a metal-bearing sludge as a by-product.

Figure 2-1 displays the Kerale Dam design from 1991 and the test pit locations used in this study for context.

The precise timing and method of facility decommissioning are not known; however, historical aerial imagery shown in Figure 2-2 indicates that the facility was operational through the 1990s and was decommissioned at some point in the early 2000s. It also shows that during 2011, water levels in Kerale Dam and the lime dosing pond were notably higher than they are today.

Spoil dumps associated with Pit 11 are located ~700 m to the east of Kerale Dam. A recent hydrogeological assessment of the Kerale Dam area and Pit 11 spoils (KCB, 2026) evaluated groundwater flow pathways and seepage mechanisms and concluded that groundwater movement in the vicinity of Kerale Dam is shallow, slow and predominantly controlled by local alluvial and regolith materials immediately surrounding the dam. That assessment did not identify evidence of direct seepage or hydraulic connectivity between the Pit 11 spoil dumps and Kerale Dam, with any potential groundwater movement expected to be directed toward local drainage features rather than toward the dam. On this basis, Pit 11 spoil dumps are not considered a significant contributor to acidity or metal loading within Kerale Dam, and are not considered further in this report.

FIGURE 2-1 TEST PIT MAP INCORPORATING THE KERALE DAM DESIGN FROM 1991

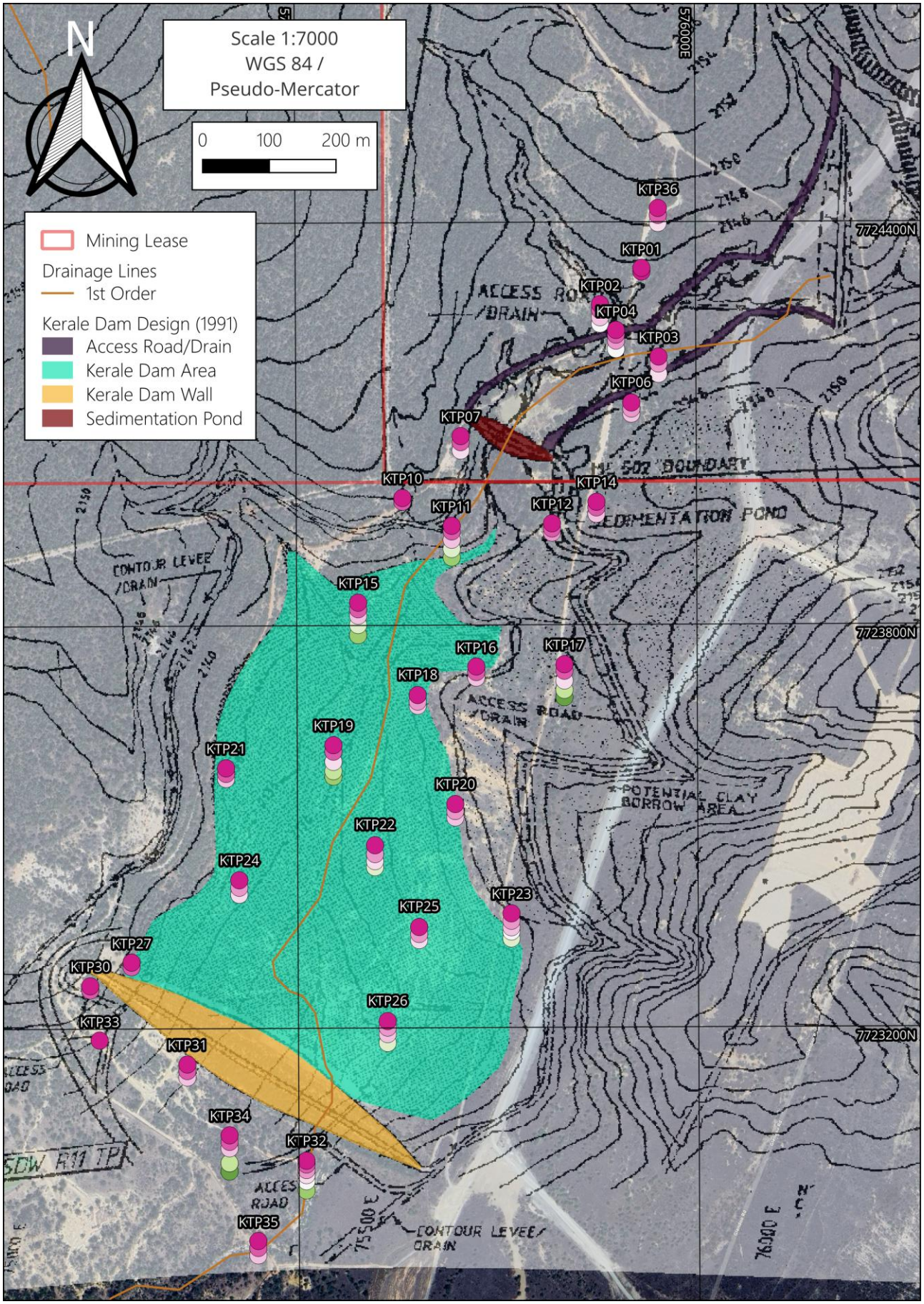
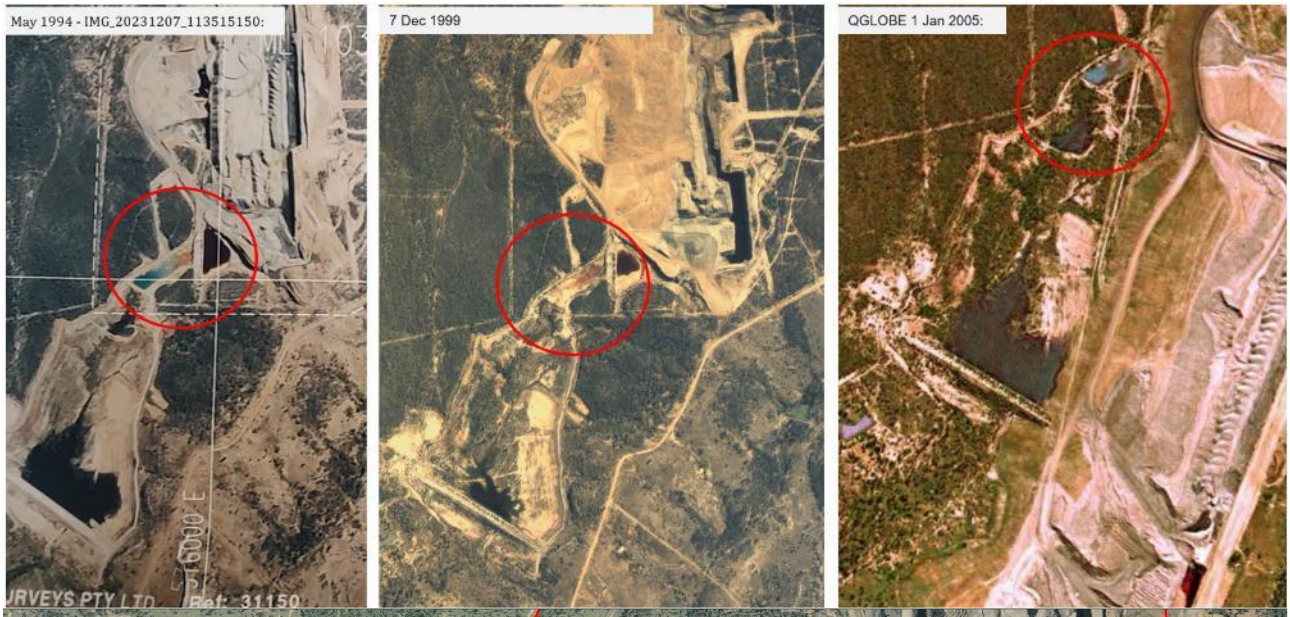
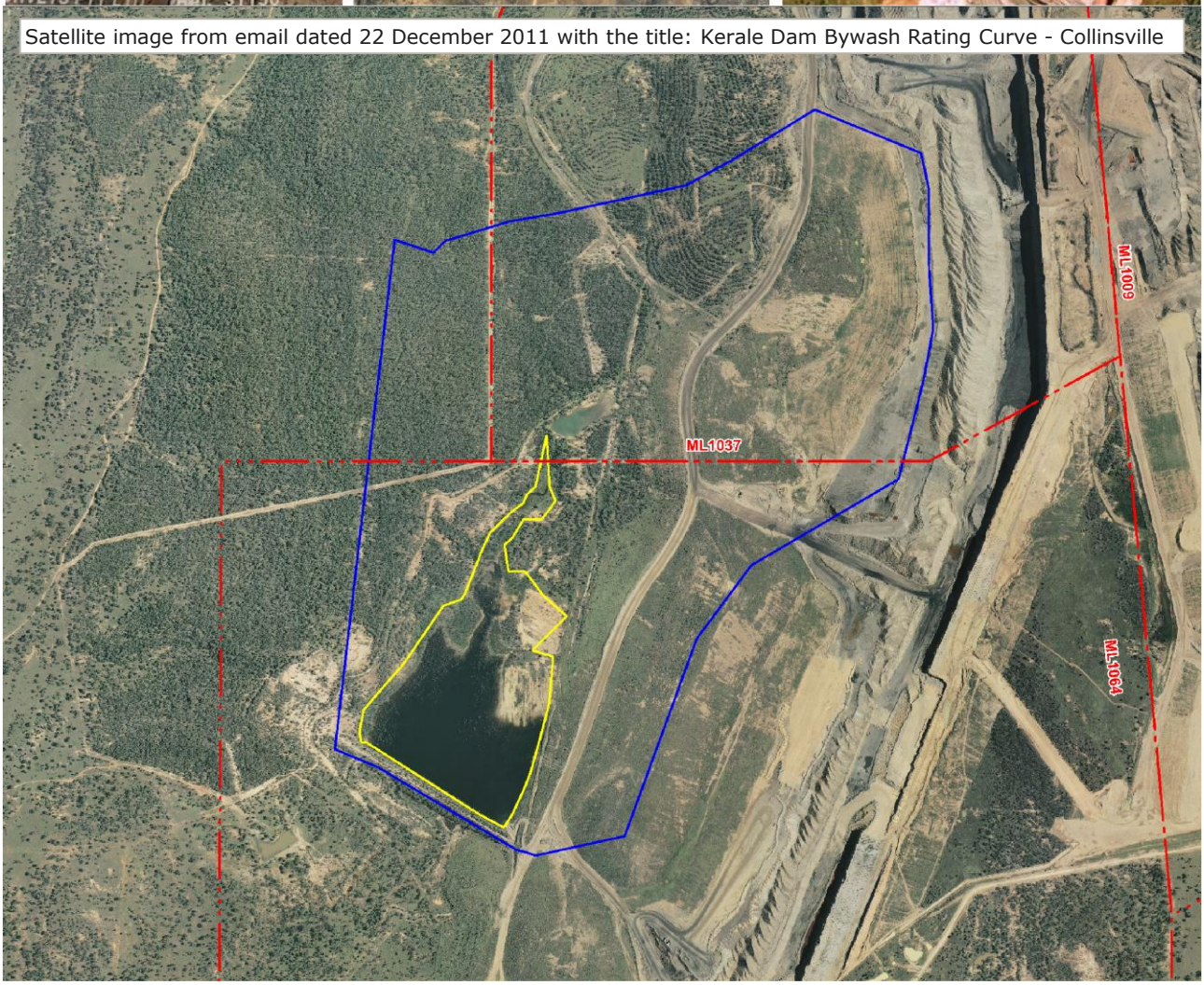


FIGURE 2-2 HISTORICAL AERIAL IMAGERY OF LIME DOSING FACILITY AND KERALE DAM





Following decommissioning, residual AMD sludge and associated reactive materials are understood to remain within and near to the footprint of the former facility.

Depending on the composition of this sludge, secondary minerals may precipitate or dissolve over time during chemical weathering. The post-decommissioning environmental behaviour of these materials is of particular significance to this assessment. Without active lime dosing to maintain alkaline conditions, the alkaline pH of the residual sludge tends to revert towards neutral or acidic levels over time, which can remobilise previously precipitated metals.

Residual alkaline lime materials may also remain in some areas and are expected to retain a high pH over time but will dissolve upon contact with acidic water.

During rainfall events, surface runoff can transport residual sludge, along with associated dissolved metals and soluble salts into Kerale Dam. Conversely, during prolonged dry periods and elevated temperatures characteristic of the Bowen Basin climate, soluble sulfate salts and secondary precipitates can concentrate within the soil profile, increasing the potential for episodic mobilisation when wet conditions return.

Preliminary sampling of surface soils completed in November 2025 showed that surface soils and sediments within the former facility footprint were strongly acidic, sulfate-rich and saline with negligible neutralising capacity. This observation is consistent influence of residual lime-AMD neutralisation residues following depletion of neutralising capcity. This sludge was believed to contain precipitated minerals such as iron (Fe) and aluminium (Al) hydroxides, gypsum ($CaSO_4$) and secondary sulfate salts. Net acid production potential (NAPP) values from this sampling were found to significantly exceed the +10 kg sulfuric acid per tonnes (H_2SO_4/t) threshold used as a trigger for potentially acid forming (PAF) material classification in the Collinsville *PRO Spoil Management Procedure* (Glencore, 2025).

Historical water quality monitoring data indicate that acidic conditions have been consistently observed in groundwater downstream Kerale Dam and surface water in the Kerale Dam since around 2011.

2.2.2 CURRENT ACTIVITIES

Under current conditions, the Kerale Dam is not actively used to store or manage mine affected water from operations at COL. Surface water entering the dam is limited to rainfall runoff from the local catchment. No controlled inflows or active water management practices are currently undertaken at the dam.

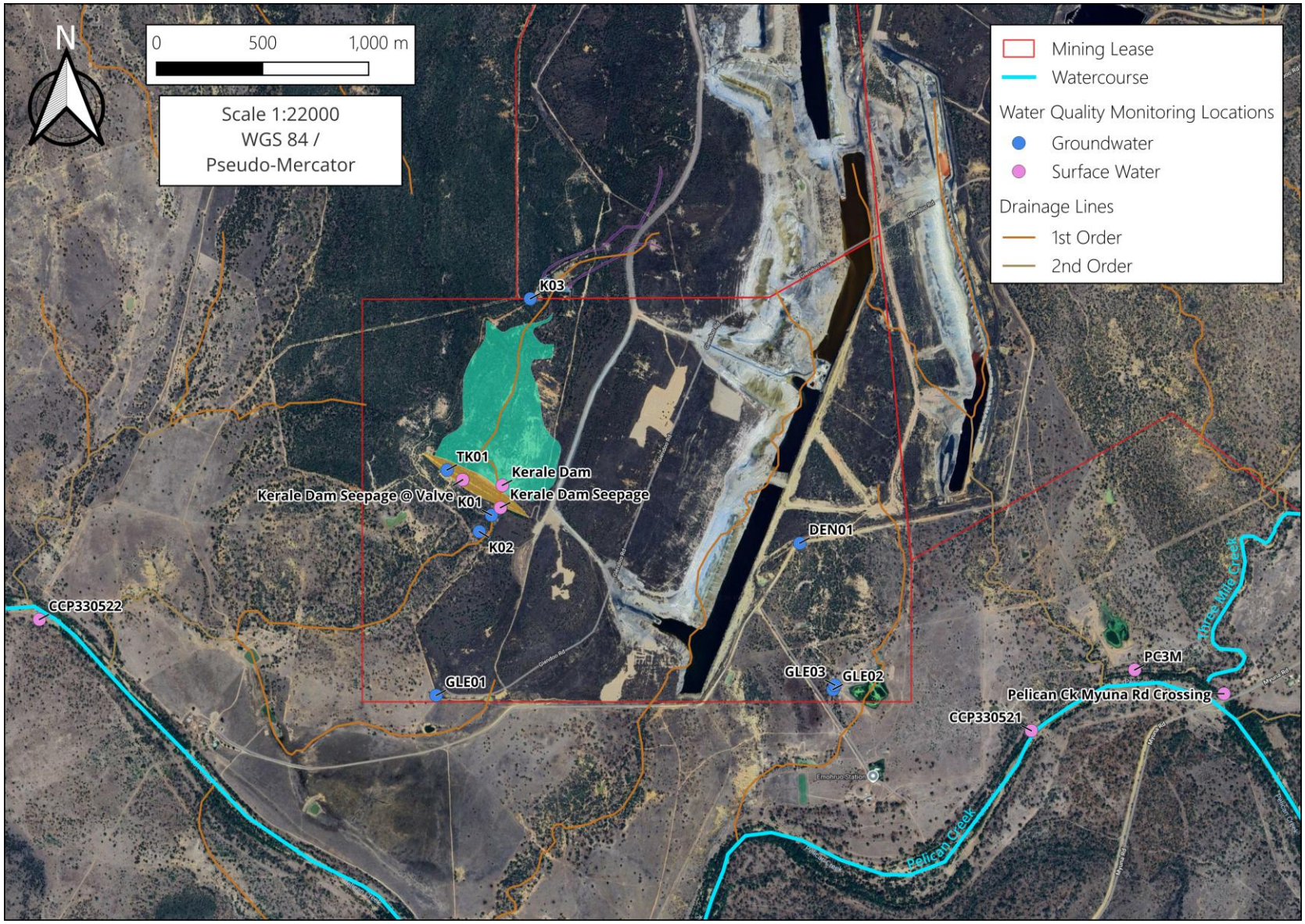
2.2.2.1 WATER QUALITY MONITORING

Water quality monitoring is undertaken within the Kerale Area using a combination of surface water and groundwater monitoring locations (Figure 2-3).

Surface water monitoring locations include Kerale Dam, Kerale Dam seepage and the seepage valve, and locations along downstream drainage lines.

Groundwater monitoring is undertaken using bores located within the Kerale Dam footprint (K03) and downgradient of the embankment, including K01, K02, TK01 and GLE01.

FIGURE 2-3 WATER QUALITY MONITORING LOCATIONS NEAR THE KERALE AREA



2.3 ENVIRONMENTAL SETTING

2.3.1 CLIMATE

COL is in a subtropical climate zone with a distinct wet and dry season. The climate is typified by hot, wet, humid summers and cool, dry winters. The region has an annual average rainfall of 706 mm, based on 86 years of records (1939-2026) at the Collinsville Post Office weather station (Bureau of Meteorology (BoM), 2026). During the wet season from December to March, average monthly rainfall ranges from 94 mm to 154 mm. Heavy rain and flooding associated with cyclonic low-pressure systems are a feature of the regional climate at COL.

Average maximum temperatures range from 25.1 degrees Celsius (°C) in July to 34.2°C in December. Minimum average temperatures range from 9.3°C in July to 22.1°C in January (BoM, 2026).

The annual mean daily evaporation is 5 mm, ranging from 6 to 7 mm during summer and 3 to 4 mm during winter. Mean evaporation exceeds mean monthly rainfall, placing the region in a net moisture deficit.

Within COL, the natural topography of the land is generally flat to undulating, with elevations ranging from 130 mAHD to 200 mAHD. In the Kerale Area, the topography declines from higher elevations of around 150 mAHD in the north, to lower elevations of around 125 mAHD at the junction between the boundary of ML1064 and the tributary of Pelican Creek. Beyond the boundary of ML1064, the terrain slopes generally to the south towards Pelican Creek. The spoil dump to the immediate east of the Kerale Dam near Pit 11 sits above the landscape with a maximum elevation of around 170 mAHD.

2.3.3 SURFACE WATER

2.3.3.1 HYDROLOGY

The natural surface water features in the vicinity of the Kerale Dam are ephemeral, flowing for a short time following episodic rainfall events. The tributary of Pelican Creek upon which the dam is constructed is a drainage feature, rather than a watercourse, under the definitions provided by the *Water Act 2000*. From the dam, this tributary extends in a generally south-west direction for approximately 2.6 km before discharging into Pelican Creek during periods of flow. The tributary crosses the boundary of ML1064 approximately 1 km downstream of the dam.

As mentioned above, Kerale Dam was constructed in the early 1990s as part of mine water management infrastructure and is located within the historical drainage line of the tributary of Pelican Creek (refer Figure 2-1).

The Kerale Dam is a water storage feature, capturing surface water runoff from the contributing catchment. As the dam catchment area is small relative to the impoundment footprint of the dam and given that average monthly evaporation exceeds average monthly rainfall, the water level in the dam is typically low. The water level in the dam is typically only a small fraction (<5%) of the dam's volumetric water storage capacity.

The western diversion landform is located along the western boundary of Kerale Dam. This diversion routes runoff around the dam and into the tributary of Pelican Creek downstream of the dam. The eastern diversion landform, located to the east of the Kerale Dam boundary,

collects runoff from the upper portion of the eastern diversion landform (preventing this water from entering Kerale Dam), and conveys this water to the tributary downstream of the dam wall rather than into the dam impoundment.

2.3.3.2 SURFACE WATER QUALITY

Kerale Area

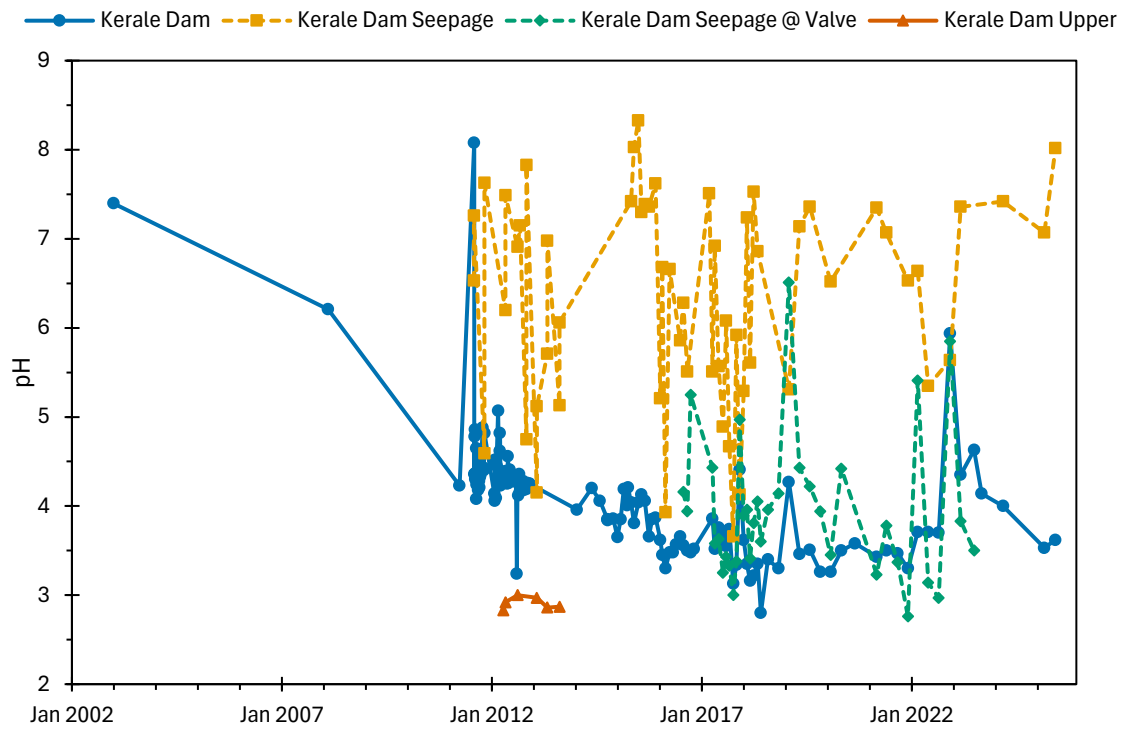
Surface water quality in the Kerale Area has been monitored since 2003. Time series plots showing historical pH and electrical conductivity (EC) in surface water from Kerale Dam, Kerale Dam Upper (i.e. the former lime dosing pond), and two seepage surface water monitoring locations (Figure 2-3) are shown in Figure 2-4 and Figure 2-5 respectively. Note that data gaps are present in the monitoring record for some locations and correspond to periods when surface water data were not collected.

Surface water pH at Kerale Dam shows a transition from near neutral conditions historically to consistently acidic conditions from around 2011 onwards. While some variability is present, there is no sustained return to neutral conditions.

In contrast, Kerale Dam seepage exhibits higher and more variable pH, ranging from moderately acidic to near neutral, with frequent fluctuations. Measurements at the seepage valve are typically acidic to moderately acidic and highly variable.

Limited data from Kerale Dam Upper, which is the same location as the former lime dosing pond, indicate consistently very acidic conditions.

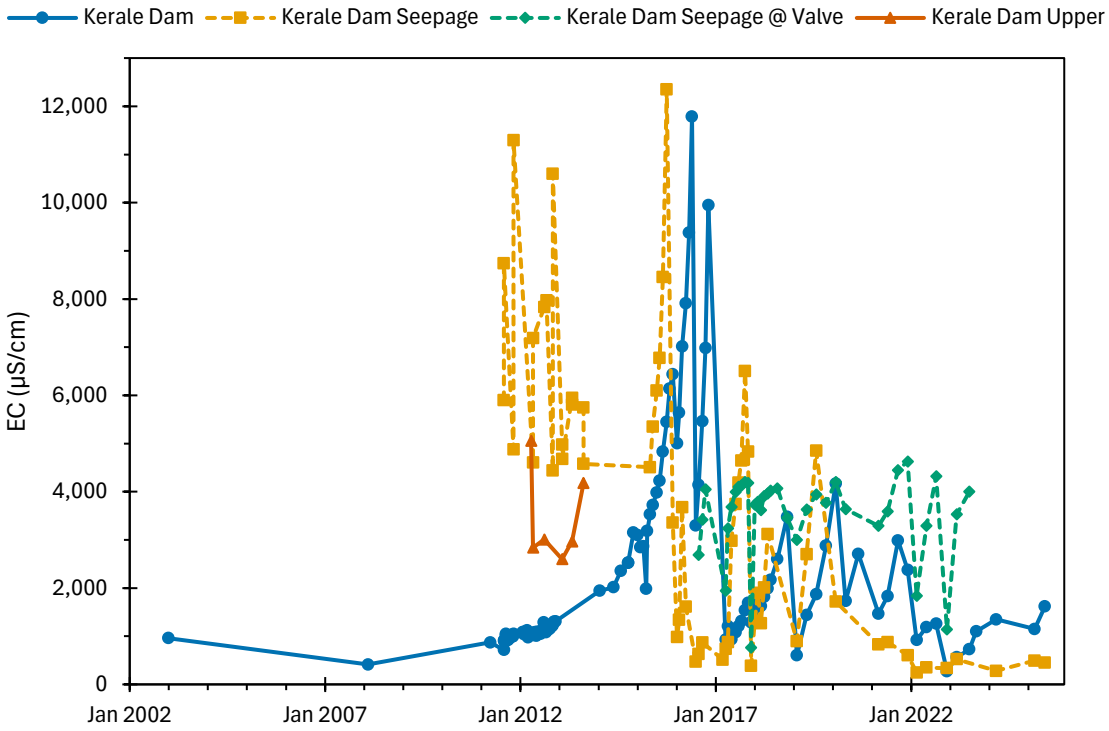
FIGURE 2-4 HISTORICAL SURFACE WATER QUALITY (pH) OF KERALE DAM, KD SEEPAGE AND KD UPPER



EC results in Figure 2-5 are highly variable across all locations. EC at Kerale Dam increased to elevated levels from ~2013 to 2017, including a pronounced peak, followed by a general

decline in more recent years. Kerale Dam seepage shows a similar pattern, with high values early in the record and a reduction after around 2016, although variability persists. EC at the seepage valve remains moderate to high and variable, with no clear long-term trend. Limited data for Kerale Dam Upper indicate moderate to high EC. Overall, EC is characterised by episodic peaks and subsequent lower, but still variable, concentrations across all locations.

FIGURE 2-5 HISTORICAL SURFACE WATER QUALITY (EC) OF KERALE DAM, KD SEEPAGE AND KD UPPER



Kerale Dam

The Kerale Dam surface water dataset comprises 142 sampling events (Appendix E1), though a number of these recorded dry or insufficient water conditions, particularly during the dry season months.

Quarterly sampling has been the general frequency in recent years, with more intensive monitoring undertaken during certain periods, notably during 2011 and 2012.

Summary statistics for key water quality parameters for Kerale Dam are presented in Table 2-2 and summarised below.

- Since 2011 surface water in Kerale Dam has been persistently acidic, with pH typically ranging from 3.3 to 4.6 across the monitoring record. The earliest sample (February 2008) recorded pH 6.21, but conditions have overall remained consistently acidic since then with no sustained recovery toward neutral, noting a single pH value above at 5.9 in December 2022.
- EC is highly variable, ranging from 255 to 11,800 µS/cm, but typically falls between 900 and 3,000 µS/cm. TDS values range from 217 to 12,800 mg/L with a mean of ~1,390 mg/L.
    - The highest EC values in Kerale Dam correspond to the lowest water levels.

- Sulfate is the dominant contributor to salinity, ranging from 100 to 8,160 mg/L (mean 946 mg/L).
- Dissolved Al and Mn are the most notably elevated metals in surface water. Co, Ni and Zn are also elevated. Fe and Pb are present at comparatively lower concentrations. Ag, As, Be, Cd, Cr, Cu, Hg, Mo, Sb, Se, U and V are present at low concentrations generally at or near detection limits.
    - Typically, the highest values for most metals coincide with the highest EC and lowest water levels, recorded in November 2016.
- Comparison of mean dissolved metal concentrations in surface water from Kerale Dam against the EA release water trigger levels indicates concentrations above trigger levels for several parameters:
    - pH: the median and mean pH values are below the trigger level range. The vast majority of readings fall below the lower trigger level of 6.0, indicating persistently acidic conditions.
    - EC: the mean and maximum values are above the trigger level of 3,000 µS/cm. The median is below the trigger level.
    - SO_4: the mean, P95 and maximum concentrations exceed the trigger level of 1,000 mg/L. The median concentration is below the trigger level.
    - Al: mean, P95 and maximum concentrations exceed the trigger level. This is the parameter that exceeds the trigger levels most consistently.
    - Cd, Cr, Pb and U: P95 and maximum concentrations exceed the trigger level. The median and mean concentrations are below the trigger level.
    - Co, Fe, Mn, Ni and Zn: mean, P95 and maximum concentrations exceed the trigger level. The median concentration is below the trigger level.
    - As, Ag, B, Cu, Hg, Mo, Se and V: all metrics (mean, median, P95 and maximum concentrations) are at or below their respective trigger levels across the full monitoring record.
- The dam is periodically dry or at very low water levels during the dry season. Water quality deteriorates through evapo-concentration as the season progresses, explaining the periods of highest EC, TDS and metal concentrations observed in the record.
- The overall water quality signature is characteristic of AMD, with variability driven by the interplay between wet season dilution, dry season evapo-concentration and potentially ongoing leaching from surrounding materials.

TABLE 2-2 SUMMARY OF KERALE DAM SURFACE WATER QUALITY (JAN 2003-SEP 2025)

Parameter	*Unit*	*EA Release Water Trigger Level*	*n*	*Min*	*P5*	*Median*	*P95*	*Max*	*Mean*
pH	-	*>6.0 or <9.0*	*68*	**2.80**	**3.29**	**4.17**	**4.83**	8.08	**4.10**
EC	*µS/cm*	*3,000*	*63*	273	881	1,160	**6,250**	**11,790**	2,050

Parameter	Unit	EA Release Water Trigger Level	n	Min	P5	Median	P95	Max	Mean
TDS	*mg/L*	-	*100*	217	658	881	3,590	12,800	1,390
SO_4		*1,000*	*103*	100	376	540	**2,900**	**8,160**	946
Cl		-	*100*	3.0	7.0	14.0	86.2	338	26.1
Dissolved metals and metalloids									
Ag	*mg/L*	*0.001*	*75*	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
Al		*0.05*	*101*	<0.001	<0.001	0.004	**30.6**	**178**	**7.16**
As		*0.013*	*91*	<0.001	<0.001	<0.001	0.004	0.012	<0.001
B		*0.370*	*96*	<0.001	<0.001	<0.001	0.215	**0.62**	0.053
Be		-	*29*	0.002	0.002	0.012	0.083	0.153	0.023
Ca		-	*96*	28	85	109	398	620	151
Cd		*0.0002*	*101*	<0.0001	<0.0001	<0.0001	**0.006**	**0.015**	0.001
Co		*0.09*	*101*	<0.001	<0.001	<0.001	**0.913**	**4.77**	**0.23**
Cr		*0.001*	*81*	<0.001	<0.001	<0.001	**0.002**	**0.005**	<0.001
Cu		*0.05*	*97*	<0.001	<0.001	<0.001	0.016	0.031	0.003
Fe		*0.1*	*101*	<0.001	<0.001	<0.001	**1.42**	**3.25**	**0.26**
Hg		*0.0006*	*74*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
K		-	*96*	5.0	6.0	7.0	33	84	12.3
Li		-	*35*	0.01	0.016	0.049	0.171	0.363	0.073
Mg		-	*96*	8.0	38	54	167	1,320	87
Mn		*1.9*	*101*	<0.001	<0.001	0.004	**22.6**	**124**	**5.72**
Mo		*0.034*	*74*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Na		-	*97*	4.0	12	29	86	533	41
Ni		*0.011*	*101*	<0.001	<0.001	<0.001	**1.35**	**6.91**	**0.34**
Pb		*0.004*	*95*	<0.001	<0.001	<0.001	**0.009**	**0.020**	0.002
Sb		-	*44*	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Se		*0.01*	*75*	<0.001	<0.001	<0.001	<0.001	**0.01**	<0.001

Parameter	Unit	EA Release Water Trigger Level	n	Min	P5	Median	P95	Max	Mean
U		*0.001*	*88*	<0.001	<0.001	<0.001	0.003	0.008	<0.001
V		*0.01*	*74*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn		*0.008*	*101*	<0.001	<0.001	<0.001	**3.02**	**10.7**	**0.63**

*Note: Values outside trigger levels are marked in **bold**.*

Pelican Creek

Surface water quality monitoring data (Table 2-3) from Pelican Creek at locations upstream and downstream of the Kerale Area are presented below. Monitoring locations are displayed in Figure 2-3 and include:

- CCP330521: Pelican Creek at Fordhams, located downstream of the confluence of 3 Mile Creek and Pelican Creek.
  - This location is upstream of the Kerale Area confluence, but downstream of 3 Mile Creek, which drains the eastern part of COL (refer Figure 1-2).
- CCP330522: Pelican Creek at the confluence with the drainage line from Ramp 11C.
  - This location is downstream of the ephemeral creek extending from the Kerale Dam embankment to Pelican Creek.
- Pelican Creek at Myuna Road Crossing.
  - This is considered a background monitoring point for this study, as it is located upstream of the COL project area and associated drainage network.

TABLE 2-3 SURFACE WATER MONITORING INFORMATION

Monitoring Point	Monitoring Time Period	Number of Monitoring Events
CCP330521	2004-12-06 to 2025-05-08	229
CCP330522	2004-06-07 to 2025-03-09	244
Pelican Creek Myuna Rd. Crossing	2017-04-03 to 2025-02-12	16

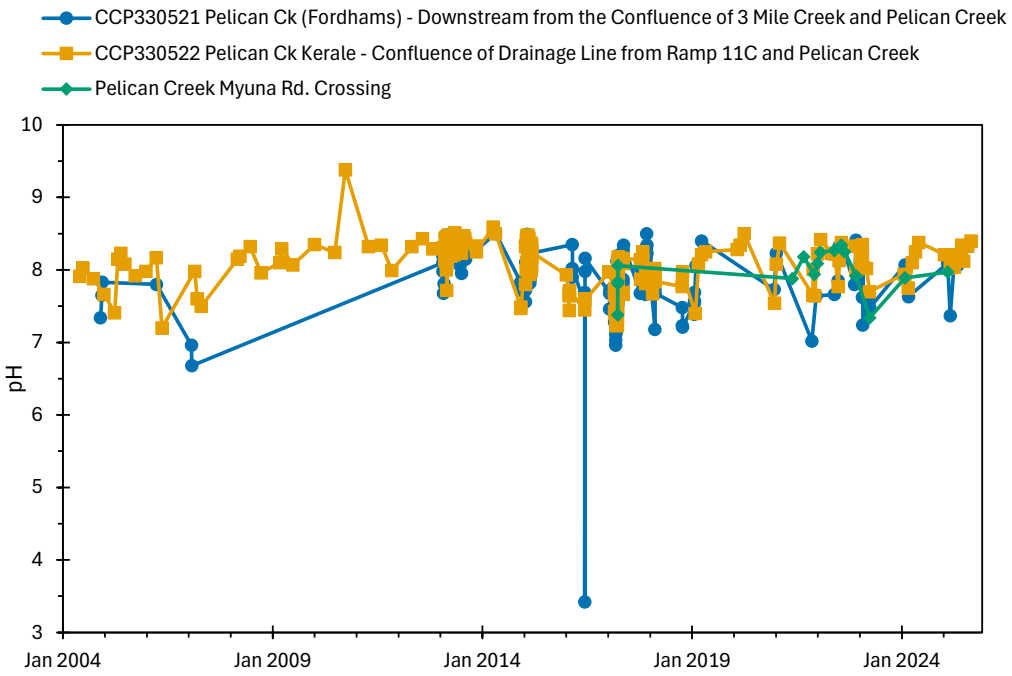
pH

Figure 2-6 shows that the surface water in Pelican Creek consistently exhibits neutral to slightly alkaline pH conditions. Across all monitoring locations, the majority of pH values fall within a narrow range of ~7.2 to 8.5, with typical values generally between 7.7 and 8.3.

A single anomalous low pH value (~3.4) is recorded at the upstream location CCP330521 during June 2016; however, this represents an isolated event that is not observed at other times or locations and is not indicative of typical conditions.

Minor spatial variability is observed, with pH at the downstream monitoring location (CCP330522) generally comparable to both upstream locations CCP330521 and Pelican Creek Myuna Road Crossing, and typically remaining within the same neutral to slightly alkaline range. Occasional higher values (up to ~8.5-9) are observed but are infrequent and not persistent.

FIGURE 2-6 PELICAN CREEK SURFACE WATER MONITORING RESULTS (pH)



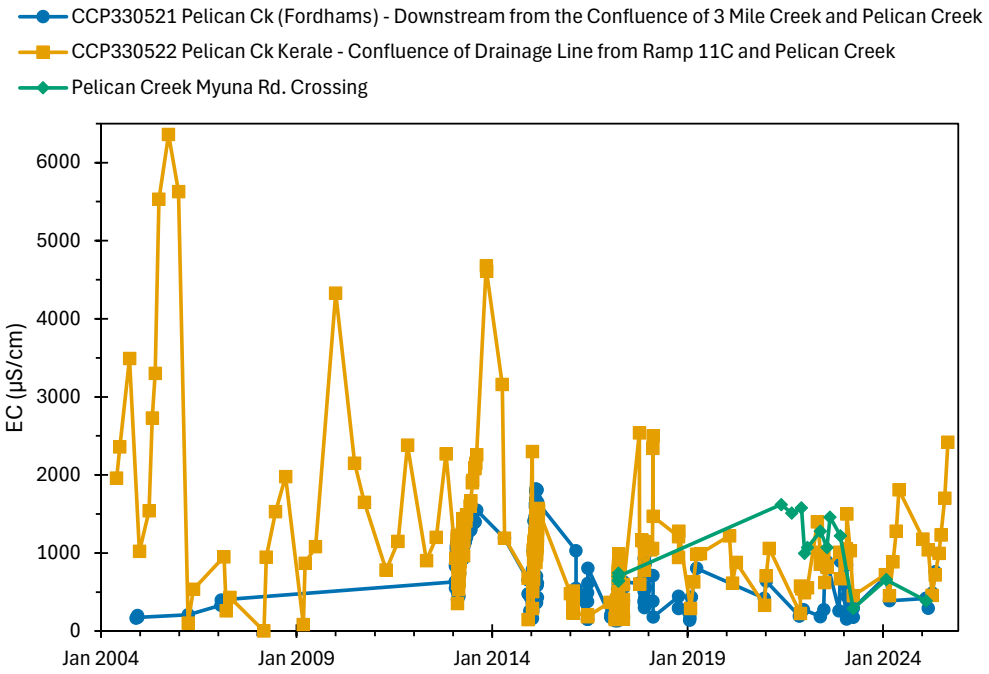
EC

EC results in Figure 2-7 show substantially greater variability than pH, particularly at the downstream monitoring location. Upstream locations generally exhibit lower EC values, typically ranging from ~200 to 800 µS/cm, with occasional increases during specific monitoring events.

In contrast, EC at CCP330522 is highly variable and includes intermittent elevated values, with several discrete peaks exceeding 2,000 µS/cm and occasional values greater than 5,000 µS/cm. These elevated concentrations are not temporally sustained and are occurring between periods where EC is comparable to upstream conditions.

No consistent long-term increasing or decreasing trend in EC is evident at any monitoring location. The overall pattern is characterised by relatively stable upstream conditions and intermittent downstream increases, indicating episodic inputs of higher salinity water rather than a continuous source.

FIGURE 2-7 PELICAN CREEK SURFACE WATER MONITORING RESULTS (EC)



Sulfate

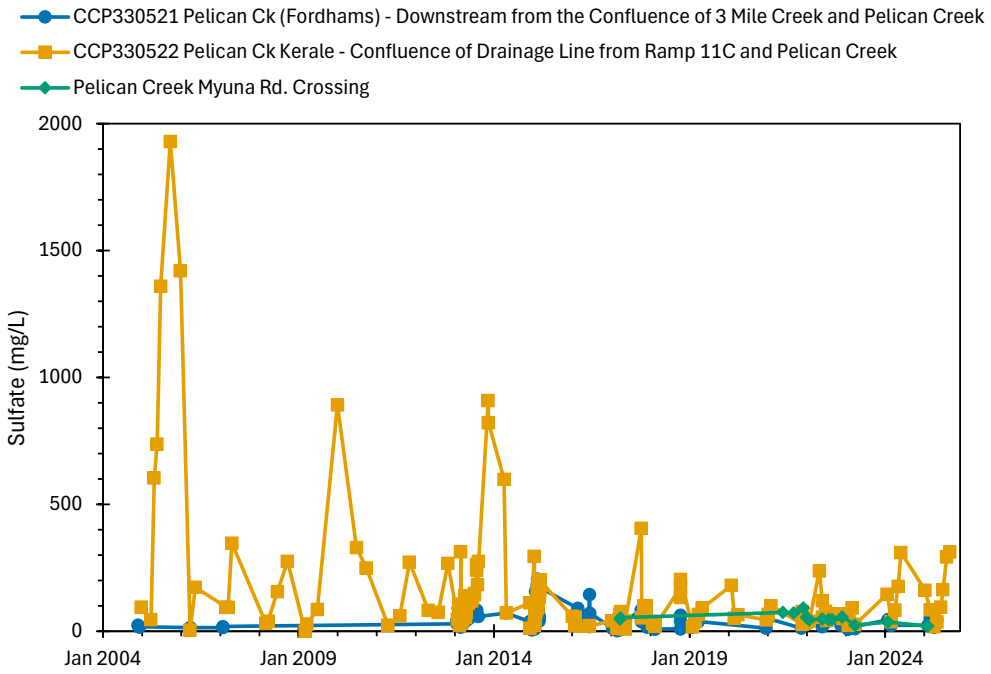
Sulfate concentrations in Figure 2-8 show the greatest spatial variability between monitoring locations. Upstream sites generally exhibit low SO_4 concentrations, typically less than 50 mg/L, with only minor fluctuations through time.

In contrast, SO_4 concentrations at the downstream monitoring location are highly variable and include intermittent elevated values. The dataset shows multiple short-duration spikes, with concentrations commonly exceeding several hundred mg/L and occasionally reaching values greater than 1,000 mg/L. These elevated concentrations are not sustained and are interspersed with periods where SO_4 levels are comparable to upstream conditions.

Comparison with the applicable water quality objectives indicates that SO_4 concentrations at upstream sites are generally consistent with guideline values, whereas concentrations at CCP330522 periodically exceed both low and high flow objectives. These exceedances occur as discrete events rather than persistent conditions.

No consistent long-term increasing or decreasing trend in SO_4 concentrations is evident. The overall pattern is characterised by relatively stable upstream conditions and episodic downstream increases, consistent with intermittent inputs of SO_4-rich water, potentially associated with catchment runoff processes, rather than a continuous source.

FIGURE 2-8 PELICAN CREEK SURFACE WATER MONITORING RESULTS (SULFATE)



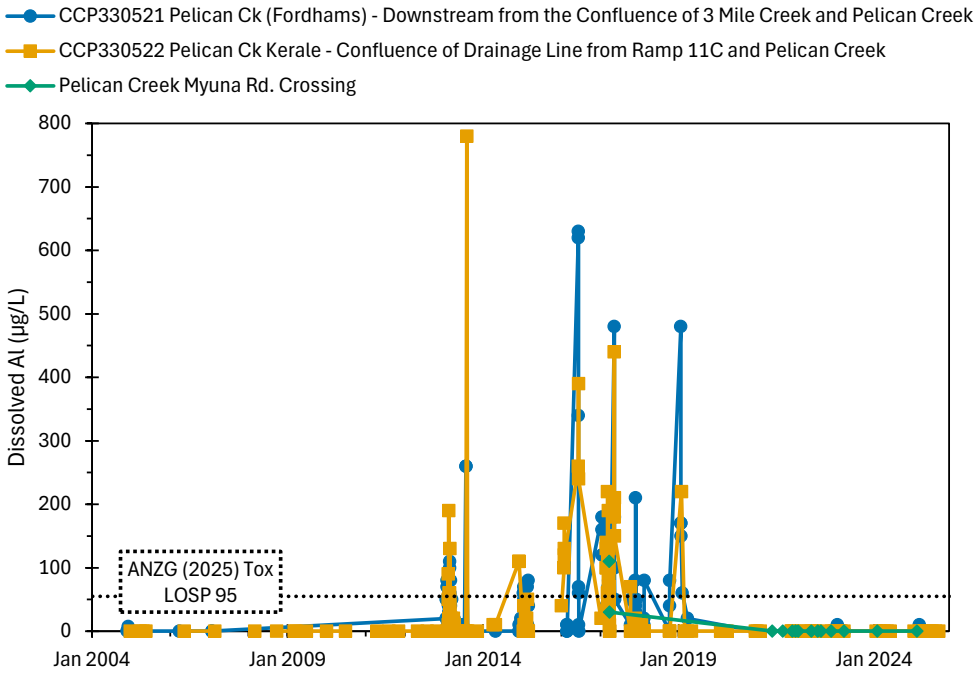
Dissolved Metals and Metalloids

Dissolved metal and metalloid concentrations were compared to ANZG (2025) freshwater level of species protection (LOSP) 95 (or unknown, where applicable) guideline values. Note that this section only covers parameters with one or more exceedances.

Dissolved Al in Figure 2-9 exhibits the highest frequency of guideline exceedance of all metals, with concentrations commonly exceeding the ANZG value at both upstream and downstream locations. The data show considerable variability, with elevated concentrations occurring as discrete spikes rather than sustained conditions.

Exceedances occur predominantly at CCP330521 (upstream Kerale Area, downstream eastern COL) and CCP330522 (downstream Kerale Area), with similar frequencies at both locations and strong temporal overlap, particularly during 2013, 2016 and 2017. In contrast, exceedances at Pelican Creek Myuna Road Crossing are rare (one event only) and do not consistently align with the main exceedance periods observed at the downstream sites. The latter location is situated upstream of COL and associated drainage network and is therefore considered representative of background conditions.

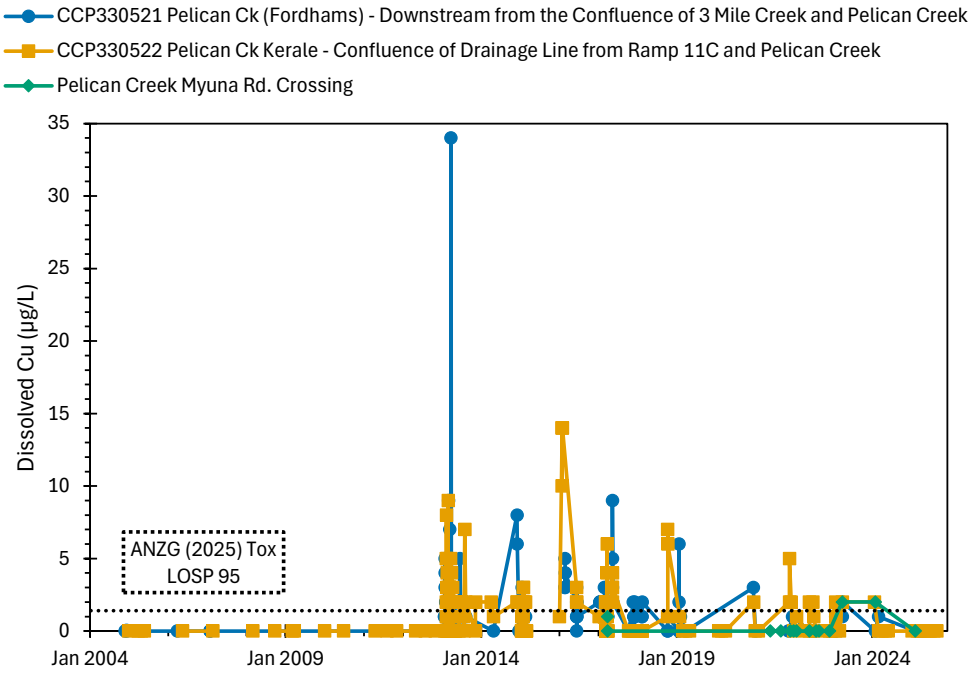
FIGURE 2-9 PELICAN CREEK SURFACE WATER MONITORING RESULTS (DISS. ALUMINIUM)



Dissolved Cu concentrations in Figure 2-10 are typically low but show considerable temporal variability, with frequent but minor exceedances recorded across the monitoring period. These occur at both upstream and downstream locations relative Kerale Area and span multiple sampling years.

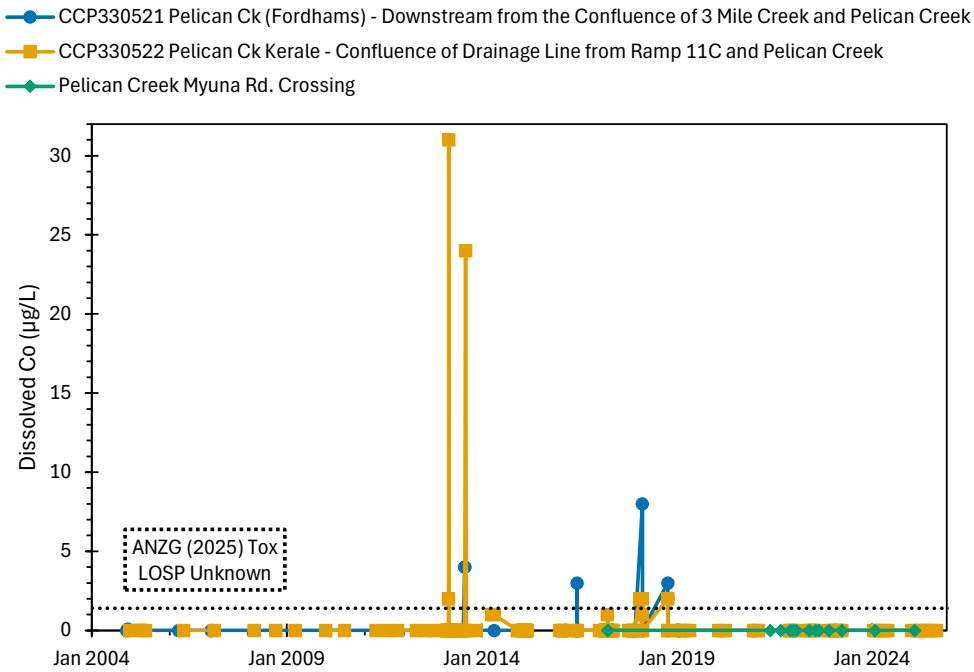
Cu exceedances occur predominantly at CCP330521 and CCP330522 during the same sampling events, while exceedances at the background monitoring location Myuna Road Crossing are rare and occur at different times. The highest dissolved Cu concentrations are observed at CCP330522 during early February 2016 and at CCP330521 during individual events in 2013 and 2014.

FIGURE 2-10 PELICAN CREEK SURFACE WATER MONITORING RESULTS (DISS. COPPER)



Dissolved Co concentrations in Figure 2-11 are generally low but show some temporal variability. Dissolved Co exceedances are limited (12 total) and occur as discrete events, primarily clustered in 2013 and 2018, with a single additional event in 2016. Exceedances are distributed equally between CCP330521 and CCP330522 and commonly occur during the same sampling periods at both sites. In contrast, no exceedances are observed at Pelican Creek Myuna Road Crossing.

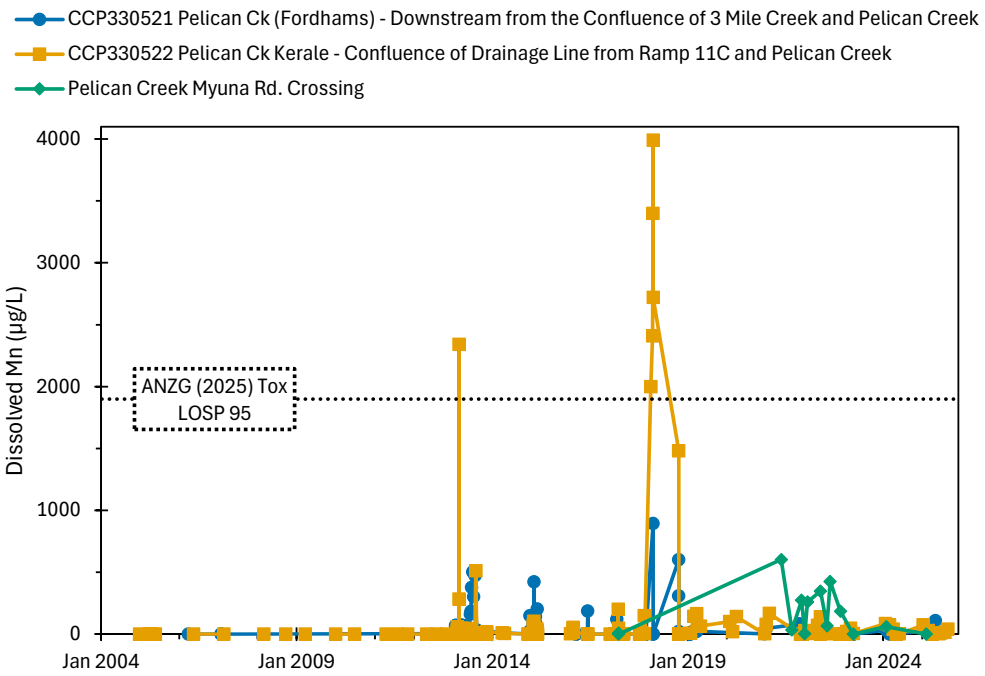
FIGURE 2-11 PELICAN CREEK SURFACE WATER MONITORING RESULTS (DISS. COBALT)



For Mn in Figure 2-12, elevated concentrations occur as intermittent spikes. Elevated concentrations are not maintained over time.

Dissolved Mn exceedances are limited to CCP330522 and occur as discrete events, primarily clustered during February 2018, with a single earlier event in March 2013. No exceedances are observed at CCP330521 or Pelican Creek Myuna Road Crossing.

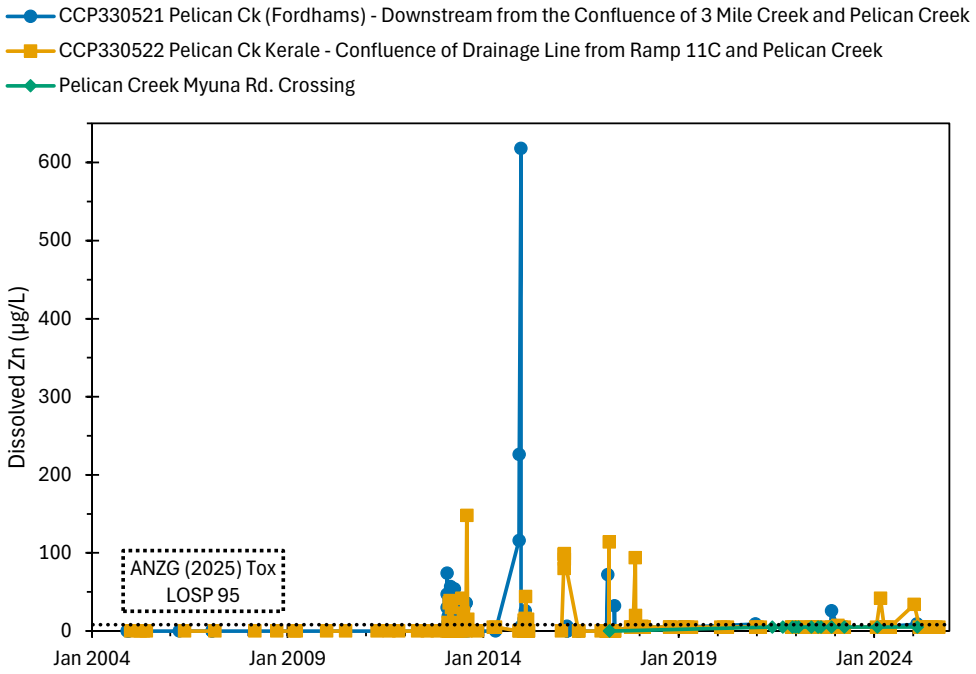
FIGURE 2-12 PELICAN CREEK SURFACE WATER MONITORING RESULTS (DISS. MANGANESE)



A similar pattern is observed for Zn, where concentrations are generally low but periodically exceed the guideline value.

Dissolved Zn exceedances occur at both CCP330521 and CCP330522, with similar frequencies at each location (~16-20%) and strong temporal clustering, particularly during major event periods in 2013, 2016 and 2017. While CCP330521 shows slightly more frequent exceedances overall, both sites respond during the same event periods and exhibit comparable behaviour. In contrast, exceedances at Pelican Creek Myuna Road Crossing are negligible.

FIGURE 2-13 PELICAN CREEK SURFACE WATER MONITORING RESULTS (DISS. ZINC)



2.3.4 GROUNDWATER

2.3.4.1 REGIONAL AND SITE GEOLOGY

COL is located at the northern extent of the Permian Bowen sedimentary basin in Queensland. The site geology comprises Quaternary to Early Permian units, with Early Permian formations overlain by Quaternary alluvial and surficial deposits.

The mine is situated at the hinge of a southeast-plunging syncline containing the Collinsville Coal Measures, a sequence of near-shore marine sedimentary rocks unconformably overlying the Lizzie Creek Volcanic Group. The coal measures comprise upper (45-75 m) and lower (120-150 m) members separated by the Glendoo Sandstone (18-40 m). The most significant coal seams are the Bowen (7-8 m) and Blake (up to 16 m) seams within the lower member. The coal sequence dips toward the south-southwest at approximately 10-15 degrees (°), and the eastern Bowen Basin is offset by the NNW-striking Collinsville Fault.

2.3.4.2 LOCAL HYDROSTRATIGRAPHY

The principal hydrostratigraphic units at and in the vicinity of the Kerale Area are the alluvial deposits of the drainage channel and tributary to Pelican Creek, the Glendoo Sandstone and the Permian coal sequences, noting that the coal sequences and Glendoo Sandstone are recharged primarily through rainfall infiltration at outcrop.

The Bowen and Blake seams of the Permian coal sequences form the most significant aquifer units due to their thickness, confined at depth by low-permeability Permian overburden. The coal seams are typically the most permeable horizons, with permeability often up to an order of magnitude higher than interburden lithologies.

The hydrogeological system has been substantially modified by mining, with underground workings altering subsurface flow paths and open cut operations increasing available recharge area.

The alluvial deposits form a shallow, permeable layer along the drainage pathway and represent the primary zone of groundwater-surface water interaction. These sediments have higher permeability than the underlying bedrock units and therefore act as the main conduit for lateral flow, allowing infiltration, storage and transport of dissolved constituents derived from the upper catchment. As a result, they play a key role in controlling the movement of acidity and dissolved metals toward Kerale Dam.

2.3.4.3 GROUNDWATER QUALITY

Groundwater quality at GLE01, K01 and K02 (Figure 2-3) has been monitored since May 2012, May 2020 and May 2020 respectively, with the most recent sampling in June 2025 for K01 and K02.

GLE01 is located ~1 km south of Kerale Dam and was installed with the purpose of monitoring seepage from Pit 11 (KCB, 2025). GLE01, which targets the deeper Glendoo sandstone formation and has a screen depth of 9 to 19 m, has not been successfully sampled since June 2016, with subsequent visits recording either dry conditions or no access.

Bores K01 and K02 are of particular relevance to this assessment as they are located proximal to Kerale Dam and target the surficial alluvial system associated with the tributary of Pelican Creek. Although bore K03 is also located in this area, it has no monitoring results due to being perpetually dry (Appendix E2).

- The dataset comprises 25 and 23 sampling events for K01 and K02 respectively, with GLE01 included at a high-level for contextual comparison only (10 events). Summary statistics for key water quality parameters are presented in Table 2-4 and summarised below.
- Groundwater quality at K01 and K02 is acidic to moderately acidic. K01 is the most acidic bore, with a median pH of 4.20 (mean 4.49), while K02 exhibits moderately acidic conditions with a median pH of 5.39 (mean 5.57). In contrast, groundwater from GLE01 is near neutral, with a median pH of 6.60 (mean 6.55).
- EC and TDS are elevated in groundwater from all bores.
    - K01 and K02 have median EC values of 4,054 and 5,788 µS/cm and median TDS of 3,920 and 4,865 mg/L respectively.
    - EC and TDS values of groundwater from GLE01 vary over a larger range, with TDS from 1,020 to 9,220 mg/L (median EC 6,175 µS/cm; median TDS 6,130 mg/L), reflecting deeper groundwater chemistry.
- Sulfate concentrations in groundwater from K01 and K02 are elevated, with median concentrations of 2,420 and 2,320 mg/L, respectively (ranges 1,800 to 2,630 mg/L).
    - By comparison, groundwater from GLE01 is characterised by lower sulfate concentrations (median 961 mg/L) but substantially higher Cl and Na concentrations (median Cl 2,220 mg/L; median Na 1,680 mg/L), indicating a distinct groundwater composition relative to the shallow alluvial aquifer in the vicinity of Kerale Dam.
- Dissolved metals were higher in groundwater from K01 and K02 than in groundwater from GLE01.
    - Median dissolved Fe concentrations were 30.4 mg/L at K01 and 26.0 mg/L at K02, while median Mn concentrations are 3.34 and 3.12 mg/L respectively.

  - Dissolved Al is markedly elevated at K01 (median 13.7 mg/L) but substantially lower at K02 (median 0.055 mg/L).
  - Ni, Zn and Co are also elevated at both bores.
- Metal concentrations at GLE01 were generally lower and are not considered to indicate the dominant geochemical processes affecting groundwater quality in the alluvial system.

Values outside the bore limits of GLE01 in the EA of groundwater quality at K01 and K02 are marked in bold in Table 2-4. Note that this was done just for comparison.

In summary:

- pH: K01 and K02 median and mean values are below the lower bore limit. All GLE01 pH values are within the bore limit range.
- EC: All median and mean values for all bores are within the bore limit.
- SO_4: All median and mean values for all bores are within the bore limit.
- Al: Dissolved Al median and mean concentrations exceed the bore limit at K01, the K02 median is within the bore limit while the mean exceeds it, and dissolved Al data are not available for GLE01.
  - Note that the EA bore limit for dissolved Al applies only under neutral to alkaline conditions. Groundwater at K01 and K02 is acidic and therefore the Al bore limit is not technically applicable at these bores.
- Cd: Median and mean concentrations are below the bore limit at GLE01 and K01, while the mean concentration exceeds the bore limit at K02.
- Co: Median and mean concentrations exceed the bore limit at all three bores.
- Cr: Median and mean concentrations are within the bore limit at GLE01 and K01 and exceed the bore limit at K02.
- Cu: Median and mean concentrations are within the bore limit at GLE01, exceed the bore limit at K01, and the K02 mean exceeds the bore limit.
- Fe: Median and mean concentrations are within the bore limit at GLE01 and exceed the bore limit at K01 and K02.
- Mn: Median and mean concentrations are within the bore limit at GLE01 and exceed the bore limit at K01 and K02.
- Ni: Median and mean concentrations exceed the bore limit at GLE01 and K01 and are within the bore limit at K02.
- Pb: Median and mean concentrations are within the bore limit at GLE01 and exceed the bore limit at K01 and K02.
- V: Median and mean concentrations are within the bore limit at GLE01, exceed the bore limit at K02, and data are not available for K01.
- Zn: Median and mean concentrations are below the bore limit at GLE01 and K02 and exceed the bore limit at K01.
- As, B, Hg, Mo, Se and U: All metrics are at or within their respective bore limits at all three bores.

TABLE 2-4 SUMMARY OF GROUNDWATER QUALITY AT GLE01, K01 AND K02

Parameter	***Unit***	**GLE01 Bore Limit from Table E2 in the EA**	**GLE01**			**K01**			**K02**		
			n	**Median**	**Mean**	**n**	**Median**	**Mean**	**n**	**Median**	**Mean**
Monitoring period			*May 2012-June 2016*			*May 2020-June 2025*			*May 2020-June 2025*		
pH	-	*6-9*	*4*	6.60	6.55	*23*	**4.20**	**4.49**	*21*	**5.39**	**5.57**
EC	*µS/cm*	*10,757*	*4*	6,175	6,150	*23*	4,054	4,058	*21*	5,788	5,815
TDS	*mg/L*	-	*8*	6,130	5,616	*24*	3,920	3,883	*22*	4,865	4,845
SO_4		*2,834*	*8*	961	929	*25*	2,420	2,388	*23*	2,320	2,334
Cl		-	*8*	2,220	2,091	*24*	93	98	*22*	696	701
Dissolved metals and metalloids											
Ag	*mg/L*	*0.001*	*8*	<0.001	<0.001	-	-	-	-	-	-
Al		*0.150 (pH>6.5)*	*0*	-	-	*25*	**13.7**	**9.69**	*22*	0.055	**0.458**
As		*0.024*	*8*	<0.001	<0.001	*3*	0.001	0.001	*4*	0.002	0.003
B		*0.674*	*8*	0.42	0.38	*25*	0.33	0.326	*23*	0.46	0.452
Be		-	*3*	<0.001	<0.001	*23*	0.006	0.005	*20*	0.003	0.003
Ca		-	*8*	386	311	*24*	503	498	*22*	517	514
Cd		*0.0002*	*8*	<0.0001	<0.0001	*20*	<0.0001	<0.0001	*10*	<0.0001	0.001
Co		*0.001*	*3*	**0.010**	**0.007**	*10*	**0.052**	**0.052**	*5*	**0.012**	**0.017**
Cr		*0.0033*	*8*	<0.001	<0.001	*17*	0.002	0.002	*7*	**0.004**	**0.005**

Parameter	*Unit*	GLE01 Bore Limit from Table E2 in the EA	GLE01			K01			K02		
			n	**Median**	**Mean**	**n**	**Median**	**Mean**	**n**	**Median**	**Mean**
Cu		*0.018*	*8*	<0.001	0.003	*24*	**0.030**	**0.068**	*13*	0.003	**0.026**
Fe		*4.289*	*3*	<0.001	0.56	*25*	**30.4**	**30.7**	*23*	**26.0**	**22.9**
Hg		*0.0006*	*8*	<0.0001	<0.0001	*0*	-	-	*1*	<0.0001	<0.0001
K		-	*8*	30	27	*24*	37	37	*22*	21	21
Li		-	*3*	0.01	0.28	*24*	0.241	0.235	*22*	0.506	0.478
Mg		-	*8*	220	180	*24*	154	156	*22*	178	179
Mn		*1.698*	*8*	0.08	0.11	*25*	**3.34**	**3.26**	*23*	**3.12**	**3.03**
Mo		*0.034*	*8*	<0.001	0.009	*0*	-	-	*2*	0.002	0.002
Na		-	*8*	1,680	1,320	*24*	309	306	*22*	671	662
Ni		*0.016*	*8*	**0.090**	**0.11**	*25*	**0.125**	**0.106**	*22*	0.007	0.012
Pb		*0.0034*	*8*	<0.001	<0.001	*20*	**0.008**	**0.016**	*8*	**0.007**	**0.011**
Sb		-	*8*	<0.001	<0.001	*2*	0.002	0.002	*1*	0.001	0.001
Se		*0.010*	*8*	<0.001	<0.001	*0*	-	-	*0*	-	-
U		*0.025*	*8*	0.01	0.009	*15*	0.001	0.001	*1*	0.002	0.002
V		*0.010*	*3*	<0.001	0.007	*-*	-	-	*1*	**0.02**	**0.02**
Zn		*0.581*	*3*	0.16	0.14	*25*	**0.862**	**0.898**	*22*	0.368	0.387

*Note: Values outside GLE01 bore limits are marked in **bold**.*

2.3.4.4 SEEPAGE POTENTIAL

This section summarises the Kerale Dam Seepage Assessment completed by Klohn Crippen Berger (KCB, 2026), evaluating the behaviour of groundwater and interaction with surface water in the vicinity of Kerale Dam and towards potential downgradient receptors.

2.3.4.5 GROUNDWATER FLOW AND SEEPAGE IN THE VICINITY OF KERALE DAM

Hydrogeological conceptualisation of groundwater in the vicinity of Kerale Dam indicates that groundwater migration occurs primarily through shallow Quaternary alluvial sediments and weathered materials beneath and adjacent to the Kerale Dam embankment. Estimated groundwater velocities are low, on the order of a few metres per year, and are strongly influenced by seasonal hydraulic gradients, evapotranspiration and episodic interaction with surface water within the ephemeral drainage network.

Model results indicate that groundwater discharge to the land surface is limited, with groundwater movement predominantly remaining within shallow subsurface pathways or being captured by engineered features under the 500-year post-closure scenario. Consistent with the hydrogeological conceptualisation presented by KCB (2026), surface water features in the vicinity of Kerale Dam are ephemeral and predominantly losing, with groundwater movement expected to be shallow, slow and intermittent, indicating limited potential for sustained groundwater discharge or baseflow contribution to surface water features KCB notes that no terrestrial groundwater-dependent ecosystems (GDEs) associated with groundwater discharge have been mapped by DETSI. However, the Australian Government's Groundwater Dependent Atlas (AG, 2026) indicate potential terrestrial GDEs associated with the area south of Kerale Dam and near Pelican Creek.

Overall, the KCB assessment indicates that groundwater movement in the Kerale Dam area is shallow and slow. Upstream of its embankment, Kerale Dam receives groundwater under most conditions, acting as an effective interception feature within the local groundwater system. When water ponds in the dam, seepage to the underlying and downgradient alluvials (beneath the embankment) occurs, allowing water from the dam to migrate downgradient. The magnitude of this subsurface flow is expected to be minor when wet season flows are considered and there is limited potential for sustained transport offsite through the alluvial pathway (KCB, 2026), noting Pelican Creek is approximately 2.7 km from the embankment.

2.3.4.6 GROUNDWATER DEPENDENT ECOSYSTEMS

GDEs near the Kerale Area were assessed using desktop GIS mapping and review of available field and hydrogeological information. For this assessment, GDEs are considered as either terrestrial GDEs, such as groundwater-dependent or riparian vegetation, or aquatic GDEs, which require sustained groundwater discharge to surface water.

Desktop mapping was undertaken using the Bureau of Meteorology Groundwater Dependent Ecosystems Atlas. The Atlas identifies potential GDEs based on national and regional-scale assessments and does not differentiate terrestrial and aquatic GDEs at a site-specific level. The results for the Kerale Area are shown in Figure 2-14.

The GDE Atlas mapping shows potential GDEs associated with drainage features, including the unnamed ephemeral creek immediately south of Kerale Dam and further downstream along Pelican Creek. These mapped features are linear and drainage-aligned and represent potential

terrestrial GDEs, such as vegetation that may access shallow groundwater intermittently. The mapping represents screening-level potential only and has not been verified by site-specific field studies. No mapped known GDEs are present within or immediately adjacent to Kerale Dam.

There is no mapping or field evidence of aquatic GDEs in the Kerale Area. KCB (2026) describes the unnamed creek downstream of Kerale Dam and Pelican Creek as ephemeral, predominantly losing systems, with limited potential for sustained groundwater discharge. Conditions necessary to support aquatic GDEs are therefore not expected to occur.

Mapped important wetlands (DEHP, 2005) and wetlands of high ecological significance (HES) (DETSI, 2022) indicate the nearest important wetland is located approximately 8.6 km southwest of Kerale Dam (Figure 2-15). No important or HES wetlands occur within the Kerale Area or along the immediate downstream drainage network.

No terrestrial or aquatic GDEs have been field-identified within or adjacent to Kerale Dam. Based on the seepage conceptualisation of KCB (2026), any interaction between groundwater and ecological receptors would be intermittent, spatially limited and seasonally controlled.

Accordingly, the mapped GDEs are considered potential terrestrial GDEs at a screening level only.

FIGURE 2-14 POTENTIAL AND KNOWN TERRESTRIAL GDES NEAR KERALE AREA

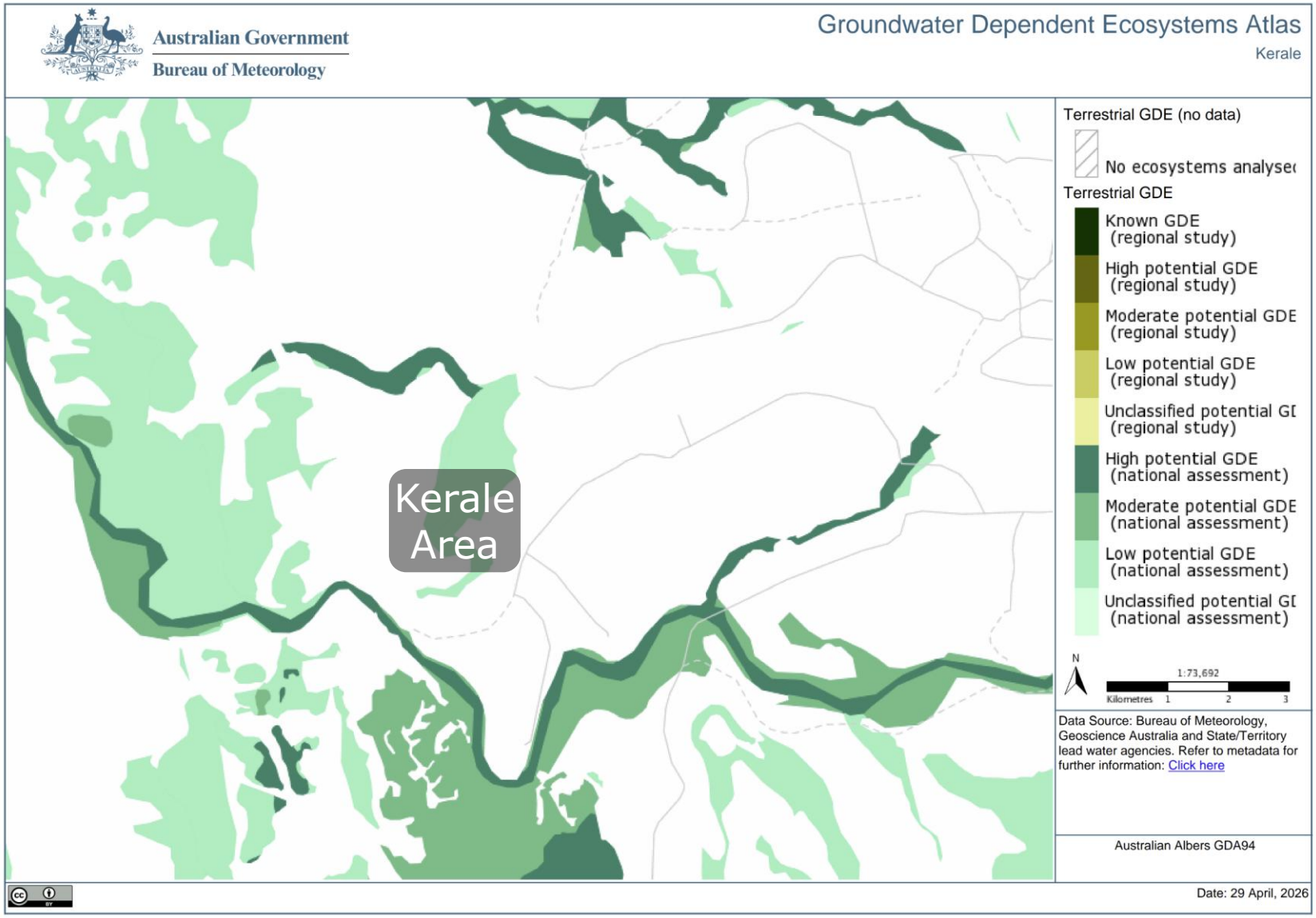
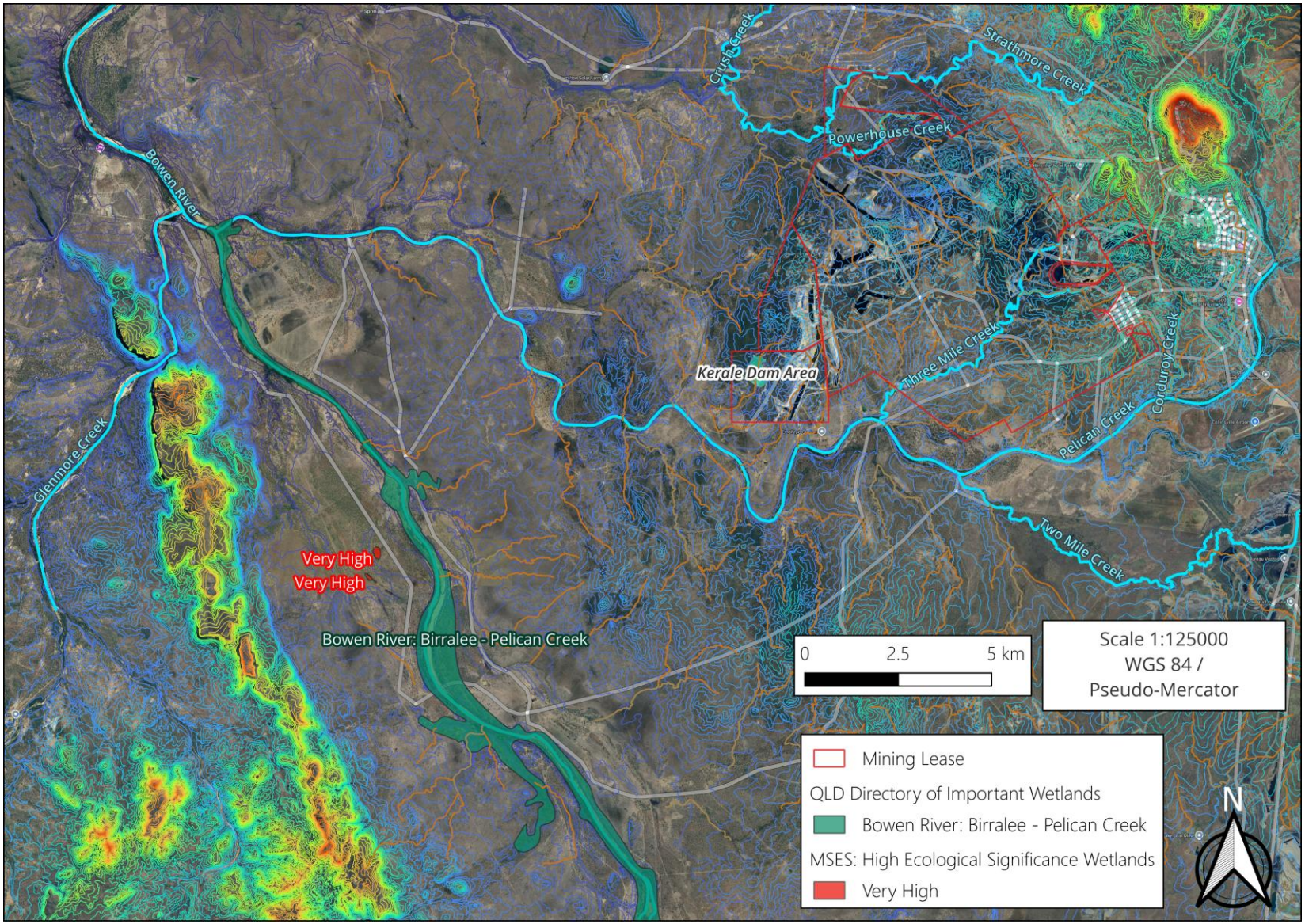


FIGURE 2-15 LOCATIONS OF IMPORTANT WETLANDS AND MSES HIGH SIGNIFICANCE WETLANDS



3. INVESTIGATION METHODOLOGIES

3.1 SOILS AND WATER QUALITY DATA

Field activities were undertaken in March 2026 to characterise soil conditions within the Kerale Area, with a focus on understanding the distribution and geochemical behaviour of acidity, associated constituents, and concentrations of contaminants of potential concern (COPCs) in soils. The results are presented in ERM (2026) where they are compared to adopted guidelines (Appendix E3). In this report, the laboratory results are used as the basis for geochemical modelling of potential groundwater and pore water conditions in the vicinity of the Kerale Area, as presented below, and for statistical assessment by PCA.

Groundwater quality data was collated from the COL database and is discussed in Section 2.3.3.2 above for comparison with results of the geochemical modelling and for assessment by PCA.

3.2 GEOCHEMICAL MODELLING METHODOLOGY

Geochemical equilibrium modelling was undertaken using PHREEQC Interactive Version 3.8.6 (USGS, 2025) to support interpretation of porewater and groundwater chemistry within the Kerale Area. The modelling was used as an interpretive tool to evaluate mineral saturation states, identify likely secondary mineral phases controlling dissolved chemistry and assess geochemical processes relevant to acidity persistence and attenuation.

PHREEQC simulations were performed using the minteq.v4 thermodynamic database, which includes a comprehensive suite of aluminium, iron, sulfate, carbonate and oxide phases relevant to acid and metalliferous drainage systems. Model inputs comprised measured chemistry from groundwater monitoring bores and ASLP leachate results from Kerale test pit samples, as reported in ERM (2026).

Equilibrium calculations were undertaken by allowing selected mineral phases to precipitate or dissolve until thermodynamic equilibrium was achieved. All mineral phases were specified with zero initial mass and were permitted to precipitate only if required to satisfy equilibrium conditions. No kinetic constraints were applied, and each simulation represents an independent equilibrium state rather than a reaction pathway or transport process.

The modelling was used to:

- Identify mineral phases likely to control aluminium, iron and sulfate behaviour in groundwater and pore water;
- Evaluate the persistence of acidic conditions in soils under equilibrium constraints; and
- Support the interpretation of spatial variability in porewater and groundwater chemistry across the Kerale Dam area.

PHREEQC results are used qualitatively to inform the CSM and are not intended to represent predictive transport or time dependent geochemical evolution.

3.2.1 MINERAL PHASES

Included mineral phases in the PHREEQC modelling are listed in Table 3-1. The phases were selected following initial PHREEQC test runs, which were used to identify phases that became saturated or approached saturation under the simulated groundwater and ASLP leachate

chemistries. Only phases with saturation indices greater than zero (SI>0) in these preliminary runs were retained for subsequent equilibrium phase simulations, while consistently undersaturated phases were excluded. This screening resulted in different mineral phase assemblages being applied to groundwater and ASLP leachate models, reflecting the contrasting chemical conditions represented by each scenario.

Note that different phases were quenched in groundwater and ASLP leachate modelling. For example, diaspore is disabled in groundwater because aluminium is removed too rapidly and under kinetically constrained conditions to allow formation of an ordered Al-oxyhydroxide, whereas surface and near-surface waters can sustain supersaturation, chemical cycling and recrystallisation that make diaspore a feasible equilibrium phase.

TABLE 3-1 INCLUDED (✓) AND QUENCHED (✗) MINERAL PHASES IN THE PHREEQC RUNS

Mineral phase	Chemical formula	Groundwater	ASLP Leachate
Al(OH)3(am)	$Al(OH)_3$	✓	✓
Al2O3	Al_2O_3		✗
Al4(OH)10SO4	$Al_4(OH)_{10}SO_4$	✓	✓
AlOHSO4	$Al(OH)SO_4$	✓	✓
Alunite	$KAl_3(SO_4)_2(OH)_6$	✓	✓
Ba3(AsO4)2	$Ba_3(AsO_4)_2$	✓	✓
Barite	$BaSO_4$	✓	✓
Bixbyite	Mn_2O_3	✓	✗
Boehmite	AlO(OH)	✗	✓
Calcite	$CaCO_3$	✓	✓
Co3O4	Co_3O_4		✗
CoFe2O4	$CoFe_2O_4$	✗	✗
Cr(OH)3(am)	$Cr(OH)_3$		✗
Cr2O3	Cr_2O_3		✗
Cu(OH)2	$Cu(OH)_2$		✓
Cupricferrite	$CuFe_2O_4$	✓	✗
Cuprousferrite	$CuFeO_2$	✗	✗
Diaspore	AlO(OH)	✗	✓
Dolomite(disordered)	$CaMg(CO_3)_2$	✓	✓
Dolomite(ordered)	$CaMg(CO_3)_2$	✓	✓
Epsomite	$MgSO_4{\cdot}7H_2O$	✓	
FCO3Apatite	$Ca_5(PO_4)_3CO_3F$	✓	
Fe(OH)2	$Fe(OH)_2$	✓	
Fe(OH)2.7Cl.3	$Fe(OH)_{2.7}Cl_{0.3}$	✓	✓

Mineral phase	Chemical formula	Groundwater	ASLP Leachate
Fe(VO3)2	$Fe(VO_3)_2$	✓	✓
Fe2(SO4)3	$Fe_2(SO_4)_3$	✓	
Fe3(OH)8	$Fe_3(OH)_8$	✓	✓
FeCr2O4	$FeCr_2O_4$		✗
Ferrihydrite	$FeOOH{\cdot}nH_2O$	✓	✓
Fluorite	CaF_2	✓	
Gibbsite	$Al(OH)_3$	✓	✓
Goethite	FeO(OH)	✓	✓
Gypsum	$CaSO_4{\cdot}2H_2O$	✓	
Hausmannite	Mn_3O_4	✓	✓
Hematite	Fe_2O_3	✗	✓
H-Jarosite	$HFe_3(SO_4)_2(OH)_6$	✓	
Hercynite	$FeAl_2O_4$	✗	✗
Hydroxylapatite	$Ca_5(PO_4)_3OH$	✓	
Hydromagnesite	$Mg_5(CO_3)_4(OH)_2{\cdot}4H_2O$	✓	
K-Jarosite	$KFe_3(SO_4)_2(OH)_6$	✓	✓
Lepidocrocite	FeO(OH)	✓	✓
Maghemite	γ-Fe_2O_3	✓	✓
Magnetite	Fe_3O_4	✓	✓
Magnesioferrite	$MgFe_2O_4$	✓	✗
Magnesite	$MgCO_3$	✓	
Malachite	$Cu_2CO_3(OH)_2$	✓	✓
Manganite	MnO(OH)	✓	✓
Melanterite	$FeSO_4{\cdot}7H_2O$	✓	
MnHPO4	$MnHPO_4$	✓	
MnSO4	$MnSO_4$	✓	
Na-Jarosite	$NaFe_3(SO_4)_2(OH)_6$	✓	✓
Pb(OH)2	$Pb(OH)_2$		✓
Pb2V2O7	$Pb_2V_2O_7$		✓
Pb3(VO4)2	$Pb_3(VO_4)_2$		✓
Pyrochroite	$Mn(OH)_2$	✓	
Pyrolusite	MnO_2	✓	
Rhodochrosite	$MnCO_3$	✓	

Mineral phase	Chemical formula	Groundwater	ASLP Leachate
Siderite	$FeCO_3$	✓	
Smithsonite	$ZnCO_3$	✓	
Strengite	$FePO_4 \cdot 2H_2O$	✓	
Tenorite	CuO		✓
Vivianite	$Fe_3(PO_4)_2 \cdot 8H_2O$	✓	
Zn(OH)2(beta)	$Zn(OH)_2$		✓
Zn(OH)2(epsilon)	$Zn(OH)_2$		✓
Zn(OH)2(gamma)	$Zn(OH)_2$		✓
Zincite	ZnO		✓
Zincosite	$ZnSO_4$	✓	

3.2.2 UNIT CONVERSIONS

Redox conditions in PHREEQC are expressed using the dimensionless 'pe' parameter, which represents electron activity and provides a measure of solution redox state. For interpretation and comparison with conventional electrochemical terminology, pe values were converted to redox potential (Eh) relative to the Standard Hydrogen Electrode (SHE).

At a temperature of 25 °C, the relationship between pe and Eh is given by:

$$Eh\ (V\ vs\ SHE) = 0.05916 \times pe$$

Converted values used for interpretation in this report are summarised in Table 3-2.

TABLE 3-2 CONVERSION TABLE OF pe TO EH

pe	Eh (mV vs. SHE)
-5	-296
-4	-237
-3	-177
-2	-118
-1	-59
0	0
1	59
2	118
3	177
4	237
5	296

3.3 PRINCIPAL COMPONENT ANALYSIS

PCA was applied as a multivariate statistical technique to evaluate relationships within and between soil analysis results and groundwater chemistry datasets relevant to the Kerale Dam

area. PCA was used as an exploratory and interpretive tool to identify dominant geochemical controls, assess similarities and differences between sample groups, and support development and refinement of the CSM.

The PCA datasets comprised selected analytical parameters from KTP soil and ASLP leachate results and historical groundwater monitoring results provided by the client. Prior to analysis, all variables were standardised to zero mean and unit variance to ensure that parameters measured in different units and concentration ranges contributed equally to the analysis.

PCA reduces the dimensionality of complex datasets by transforming correlated variables into a smaller number of orthogonal principal components (PCs). Each principal component represents a linear combination of the original variables and explains a defined proportion of the total variance in the dataset. Interpretation focused primarily on the first two principal components (PC1 and PC2) which, together, capture the majority of dataset variability.

Results are presented as:

- Score plots, which illustrate the relative similarity or separation of samples based on overall geochemical composition; and
- Biplots and variable correlation circles, which show the contribution and influence of individual parameters on each principal component.

PCA results are interpreted qualitatively and are used to support identification of dominant geochemical processes rather than to infer causality or quantify source contributions.

4. RESULTS AND ANALYSIS

4.1 FACTUAL REPORT

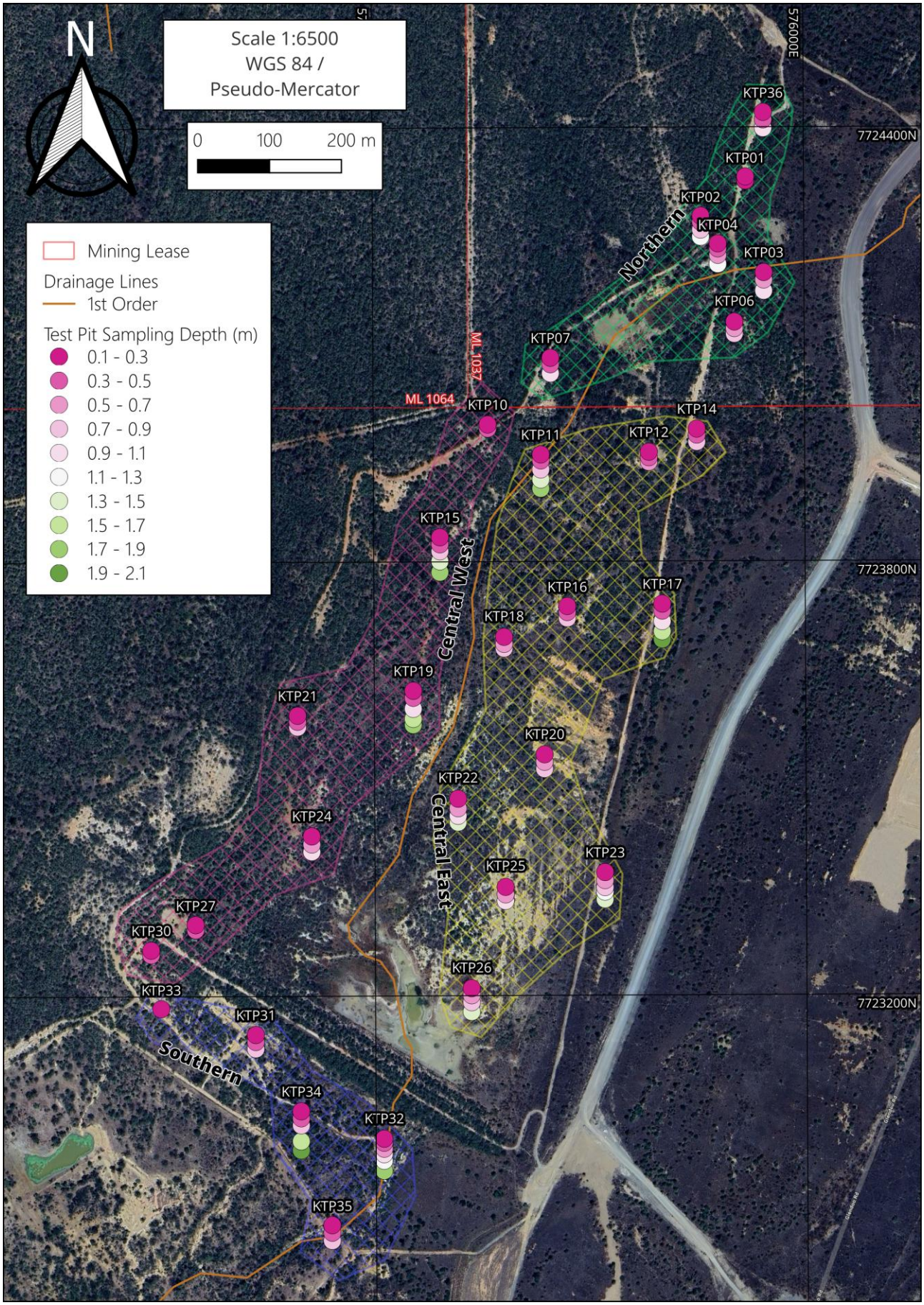
4.1.1 RESULTS SUMMARY

Field and laboratory results from the geochemical investigation factual report (ERM, 2026) are summarised in this section. Test pit locations used in this assessment are shown in Figure 4-1. The key findings from each analytical suite are summarised below.

- The northern part of the investigation area is characterised by widespread stored acidity in secondary sulfate minerals.
    - Residual sulfide is negligible across all samples, and the acidity budget is dominated by titratable actual acidity rather than chromium reducible sulfur.
    - The former lime dosing facility footprint at KTP04 represents the most significant localised accumulation of secondary sulfate minerals, with very high EC, sulfate, total metal concentration and stored acidity recorded at depth.
    - XRD confirms that secondary sulfate minerals are concentrated in this zone, with gypsum and jarosite most elevated within and immediately downstream of the former lime dosing facility footprint at KTP04, where these phases increase with depth. Carbonate minerals are limited and occur only as calcite at a small number of northern locations (KTP03-2, KTP04-1 and KTP06-2). Iron oxides occur as goethite and hematite, with elevated goethite at KTP04-3 and the highest hematite content in the dataset recorded at KTP07-3.
- The central west portion of the Kerale Dam impoundment is characterised by widespread acidic conditions with low neutralising capacity and relatively uniform geochemical behaviour with depth. Iron oxides are most elevated in this zone, with the highest goethite contents across the study area recorded at KTP24-2 and KTP19-2.
- The central east portion of the impoundment exhibits the greatest geochemical heterogeneity, with acidic aluminium-controlled profiles interspersed with locally alkaline intervals associated with residual lime or naturally occuring carbonate influence. This variability is reflected in pH, ANC, dissolved calcium and redox sensitive metal behaviour.
- The southern part of the study area, downgradient of the Kerale Dam embankment, is characterised predominantly by acidic, sulfate rich soils with limited neutralising capacity.
    - Acidity and dissolved metal concentrations persist with depth with only localised evidence of buffering or redox moderation.
    - XRD coverage of the southern zone includes KTP34-3 and KTP35-3, with secondary sulfate minerals, jarosite detected at KTP34-3 and gypsum detected at KTP35-3. Carbonate minerals are not detected in southern zone samples. Iron oxides are present as goethite and hematite at both locations, with goethite of 1.3 wt.% at KTP34-3 and hematite of 0.41 wt.% at KTP35-3.

Overall, the factual results indicate that acidity across the Kerale Dam area is spatially extensive, primarily stored in secondary sulfate minerals, and variably redistributed through shallow soils and sediments. Key COPCs identified in soils and soil leachates in the Kerale Dam area include acidity, electrical conductivity (i.e. salinity), sulfate, aluminium, iron and manganese, with additional metals of interest including cobalt, zinc and nickel.

FIGURE 4-1 TEST PIT LOCATIONS AND ZONE DESIGNATIONS



4.1.2 ADDITIONAL DISCUSSION POINTS

This section includes discussion points and in-depth analyses based on findings in the factual report (ERM, 2026).

Interpretation of the results focuses on explaining the origin and spatial distribution of acidity observed across the investigation area. Although acidic water is present within Kerale Dam (Section 2.3.3.2), the geochemical data indicate that the primary source of acidity resides in soils associated with the former lime dosing facility footprint at KTP04. Acidity identified within Kerale Dam is therefore interpreted to reflect accumulation and retention of acidity transported from this upgradient source, rather than acidity generated within the dam sediments or water body itself.

4.1.2.1 ACIDITY AND ALKALINITY

Link between strongly acidic conditions and the residual lime sludge profile at KTP04

Strongly to very strongly acidic final ASLP pH values recorded in the northern zone, particularly at KTP01, KTP02, KTP04 and KTP07, were interpreted to reflect the ongoing dissolution of secondary sulfate minerals associated with the former lime dosing facility. At KTP04, acidic intervals occur immediately adjacent to, and vertically interbedded with, lime-rich materials, indicating spatially variable neutralisation within the residual lime sludge profile. This pattern is consistent with incomplete neutralisation of historically generated acidity, where stored acidity in secondary sulfate minerals continues to be released as lime is progressively consumed.

The coexistence of acidic final pH and extreme EC at KTP04 confirms that acidity is being released from a salt-rich matrix dominated by secondary sulfate minerals, rather than from low-salinity, actively oxidising sulfide material. In contrast, strongly acidic conditions in the central west zone occur largely in the absence of elevated EC, indicating that stored acidity is being flushed from those profiles with limited salt accumulation. This distinction supports a process-based separation between lime-sludge-controlled acidity at KTP04 and broader catchment-scale redistribution of acidity elsewhere.

Sulfur content and actual acidity – interpretation of sulfur speciation and acidity storage

Integration of total sulfur (S), sulfur fractionation and actual acidity results indicates that acidity across the Kerale Dam area is predominantly stored in secondary sulfate minerals, with negligible contribution from residual sulfide.

- Very low chromium reducible sulfur (CRS) across all samples confirms that residual sulfide is not a significant contributor to current or future acidity generation.
- Titratable actual acidity (TAA) is the dominant acidity parameter across the dataset, indicating that acidity is primarily stored in secondary sulfate minerals.
- Elevated total S and non-acid-generating S at KTP04, together with elevated net acid-soluble, KCl-extractable and HCl-extractable S, are consistent with high concentrations of soluble and sparingly soluble secondary sulfate minerals associated with residual lime sludge and its weathering products at that location.
    - The contrasting spatial patterns of non-acid-generating S and TAA indicate that stored acidity is more widely distributed across the catchment than non-acid-generating sulfate, and is not confined to the former lime dosing infrastructure footprint.

- Depth-dependent increases in TAA at several locations, while total S remains relatively constant, are consistent with progressive depletion of stored acidity from the upper soil profile by leaching.
- At KTP04, non-acid-generating S increases sharply with depth, consistent with deeper lime sludge intervals retaining higher concentrations of gypsum and sparingly soluble secondary sulfate minerals.

Interpretation of dissolved and total calcium behaviour at KTP04

The contrast between elevated dissolved calcium at KTP04 and low dissolved calcium at alkaline locations in the central east zone (KTP23, KTP25 and KTP26) was interpreted to indicate lime-derived calcium at KTP04, versus naturally occurring carbonate calcium at the latter locations.

At KTP23, KTP25 and KTP26, alkaline pH suppresses calcium dissolution, and elevated total calcium is not accompanied by elevated dissolved calcium, with dissolved Ca typically at or near the limit of reporting (~1-14 mg/L) despite elevated total Ca (410 to 19,200 mg/kg) and measurable ANC (up to 33 kg H_2SO_4/t $CaCO_3$). This soil chemistry is consistent with stable carbonate phases rather than residual lime. In addition, final ASLP pH at these locations is strongly alkaline (~8.5 to 9.6), while EC is low to high (59 to 217 µS/cm) and sulfate concentrations are significantly lower, supporting interpretation of carbonate buffering rather than active lime dissolution in the central east area.

At KTP04, dissolved Ca concentrations were similar at KTP04-3 and KTP04-4 despite a five-fold difference in total Ca content. This observation indicates that Ca release is kinetically limited, controlled by lime particle surface area, rainfall infiltration rate and the hydrolysis rate of associated secondary sulfate minerals, rather than by total lime reserve. As a result, deeper intervals with larger lime reserves are not neutralising acidity at proportionally higher rates.

Lime consumption, depletion trajectory and implications for future acidity

Integration of calcium, ABA and NAG data indicates that residual lime and secondary sulfate minerals within the former lime dosing pond area represent finite and co-depleting reservoirs. Rainfall infiltration and shallow seepage promote ongoing lime consumption while simultaneously dissolving secondary sulfate minerals that release acidity.

To assess whether residual lime at KTP04 is sufficient to neutralise the stored acidity at each depth interval, total Ca from acid digestion was converted to a lime equivalent in kg $CaCO_3$/t using a conversion factor of 2.497 based on molar weight ratios. Note that this assumes all Ca is present as calcium carbonate. Some Ca may be bound in silicate minerals or gypsum, so the true lime reserve may be lower than estimated.

The quantity of lime required to neutralise the stored acidity at each interval is taken from the calculated liming rate, which represents the mass of $CaCO_3$ required to fully neutralise the acidity per tonne of dry soil.

- At KTP04-3 (0.5-0.85 mbgl), the estimated remaining lime of 51.2 kg $CaCO_3$/t is insufficient to neutralise the stored acidity (82 kg $CaCO_3$/t), giving a deficit of 30.8 kg $CaCO_3$/t. This interval is therefore already generating net acidic discharge.
- At KTP04-4 (0.85-1.4 mbgl), the estimated remaining lime of 259.7 kg $CaCO_3$/t far exceeds the acid load of <1 kg $CaCO_3$/t.

    - However, this low apparent acid load contrasts with the higher total S content at KTP04-4 (3.3%) relative to KTP04-3 (3.2%), indicating that a substantial proportion of sulfur at this depth is held in secondary sulfate minerals that are sparingly soluble and not detected by the TAA method. As a result, the low TAA at KTP04-4 should not be interpreted as an absence of stored acidity, but rather as acidity that is currently stored in less soluble mineral phases and may be released progressively as dissolution proceeds and lime is consumed.
- The above interpretation is supported by the substantially higher total metal concentrations at KTP04-4, including aluminium, iron, manganese and cobalt, which indicate a large solid-phase reservoir associated with secondary mineral accumulation rather than active dissolution under current conditions. In contrast, KTP04-3 shows lower total metal concentrations but higher dissolved acidity, consistent with more advanced depletion of neutralising capacity and greater mobilisation of stored acidity at that interval.
- Shallower intervals (KTP04-1 and KTP04-2) currently contain negligible acid loads and do not contribute materially to acidic discharge. However, as deeper lime reserves are progressively exhausted, acidity release is expected to migrate upward through the profile.
- The former lime dosing pond area is therefore interpreted to be on a trajectory of increasing acidic discharge over time, driven internally by lime depletion and secondary sulfate mineral dissolution, and independent of any external AMD input.

Note that the interpretation of geochemical behaviour at KTP04 is constrained by limited access to the former lime dosing and evaporation pond area. A large portion of the former evaporation pond footprint was not accessible for test pitting during the field investigation, and the full lateral extent of residual lime sludge and associated secondary sulfate mineral accumulation therefore remains uncertain. It is possible that additional zones with geochemical characteristics similar to those observed at KTP04 (including elevated EC, sulfate, stored acidity and residual lime) occur within unsampled portions of the former facility footprint.

In summary:

- KTP04-3 is already in lime deficit and generating net acidic discharge.
- KTP04-4 retains a large lime surplus but is releasing dissolved Ca at a similar rate to KTP04-3, confirming that lime depletion is ongoing regardless of reserve size.
    - Lime exhaustion at KTP04-4 will occur over a longer timescale but is not indefinitely sustainable, and that interval will eventually transition to a net acid-generating zone.
- KTP04-1 and KTP04-2 have negligible acid loads and are not significant contributors to acidic discharge.

The data indicates that the former lime dosing pond area is on a trajectory of increasing acidic discharge over time. This is further elaborated on in Section 4.1.2.4 below.

Ionic ratios

Integration of Ca:Mg and Cl:SO_4 molar ratios derived from ASLP leachate results provides additional insight into solute sources and transport pathways within the Kerale Area.

- Elevated Ca:Mg ratios along the northern drainage line are spatially consistent with the footprint of the former lime dosing infrastructure and support the interpretation that lime-derived calcium is migrating toward the Kerale Dam embankment.

- Low $Cl:SO_4$ ratios across most of the study area are consistent with secondary sulfate minerals stored in the soil profile from historical sulfide oxidation and confirm that sulfate-bearing leachate from the upper catchment soils represents the primary anionic contribution to Kerale Dam.

4.1.2.2 METALS AND METALLOIDS

Total metals and metalloids – interpretation of spatial patterns

Integration of total metals and metalloids data indicates that solid-phase metal enrichment across the Kerale Dam area is spatially variable and strongly influenced by historical lime dosing activities and secondary mineral accumulation.

- Elevated total concentrations of Fe, Al, Mn and Co are co-located at KTP04 within the former lime dosing footprint, consistent with accumulation of secondary sulfate and oxide minerals within residual lime sludge rather than site-wide lithological variation.
- At KTP04-4, markedly elevated total Mn (up to 5,200 mg/kg) and Co (exceeding the NEPM HIL A of 100 mg/kg) represent a significant solid-phase reservoir that is currently immobile under near-neutral conditions but presents a future dissolution risk as the lime buffer is progressively exhausted.
- Elevated Ba, Co and Ni observed at KTP18, KTP20 and KTP23 in the central east zone are not associated with distinct lithological units and are therefore interpreted to reflect localised geochemical enrichment rather than a separate geological source.
- With the exception of KTP04, total metal concentrations show no consistent site-wide increase with depth, indicating that progressive metal accumulation is confined to the former lime dosing pond area.

Integration of geochemical abundance index (GAI) results provides additional insight into the spatial distribution, sources and accumulation behaviour of metals across the Kerale Dam area:

- GAI results show near-identical spatial distributions for Co and Ni, with significant enrichment (GAI >3) concentrated at the former lime dosing pond and broadly across the central east zone, indicating a common geochemical source rather than isolated background variability.
- Ba enrichment is scattered and locally increases with depth at several locations, consistent with progressive surface depletion by leaching and accumulation of Ba-bearing phases at depth.
    - Under acidic conditions, Ba adsorbed to or co-precipitated with Fe and Mn oxyhydroxides may be released as those phases dissolve, as demonstrated by Carbonell et al. (1999) around pH 4-5.
- The western margin of the investigation area consistently shows little to no metal and metalloid enrichment, indicating limited influence from lime dosing or secondary mineral accumulation processes in that area.

Dissolved metals and metalloids – interpretation of mobility patterns

Integration of dissolved metals and metalloids results from ASLP leachate testing indicates that metal mobility across the Kerale Dam area is spatially variable and primarily governed by pH-dependent solubility of secondary mineral phases, rather than by total metal abundance alone.

- Dissolved Al and Fe show the highest frequency of guideline exceedances and are spatially concentrated in the central east zone, indicating that their mobilisation is controlled by the solubility of secondary Al- and Fe-bearing minerals under prevailing leachate pH conditions rather than by bulk metal content.
- Exceedances of ANZG guideline values for dissolved Cr, Co, Cu and Pb are generally associated with acidic final ASLP pH, indicating that mobilisation of these metals is strongly pH-dependent and linked to dissolution of secondary mineral phases under acidic conditions.
- Although dissolved Mn concentrations remain below the ANZG 95% guideline across all samples, concentrations approach the guideline under current leaching conditions, indicating that Mn represents a potential future mobility risk if pH declines further across the study area.
- At several locations where final ASLP pH decreases with depth, dissolved metal concentrations increase with depth, indicating progressive mobilisation of stored metals from secondary mineral phases within deeper soil horizons.
- Ficklin diagram classifications indicate that most samples plot in the moderate metal acidic field across all zones, consistent with widespread stored acidity and secondary mineral dissolution..
- A subset of samples plot in the alkaline moderate-high metal field, particularly in the central east and northern zones, indicating ongoing metal dissolution under conditions that would not be expected to generate AMD in a conventional sulfide-oxidation context.

Comparison between total and dissolved concentrations – implications for metal storage and future mobility

Comparison of total (soil) and dissolved (ASLP) concentrations for metal and metalloids are shown as sums in Figure 4-2.

Total metal concentrations are highest within the northern zone, particularly at the former lime dosing facility footprint (KTP04), and remain elevated across the impoundment. These areas represent substantial solid-phase metal inventories associated with accumulation of secondary mineral phases.

Dissolved metal concentrations are spatially heterogeneous, with a dominant hotspot at KTP04-3 and additional elevated values aligned along the drainage pathway. According to XRD results (further discussed in Section 4.1.2.3), this interval also contains elevated jarosite and goethite, with moderate hematite and gypsum, and is characterised by more acidic and oxidising conditions relative to adjacent samples. In contrast, KTP04-4, which occurs immediately below, contains no jarosite, hematite or goethite and is instead dominated by gypsum (28.7 wt.%), and exhibits more neutral conditions and low dissolved metal concentrations.

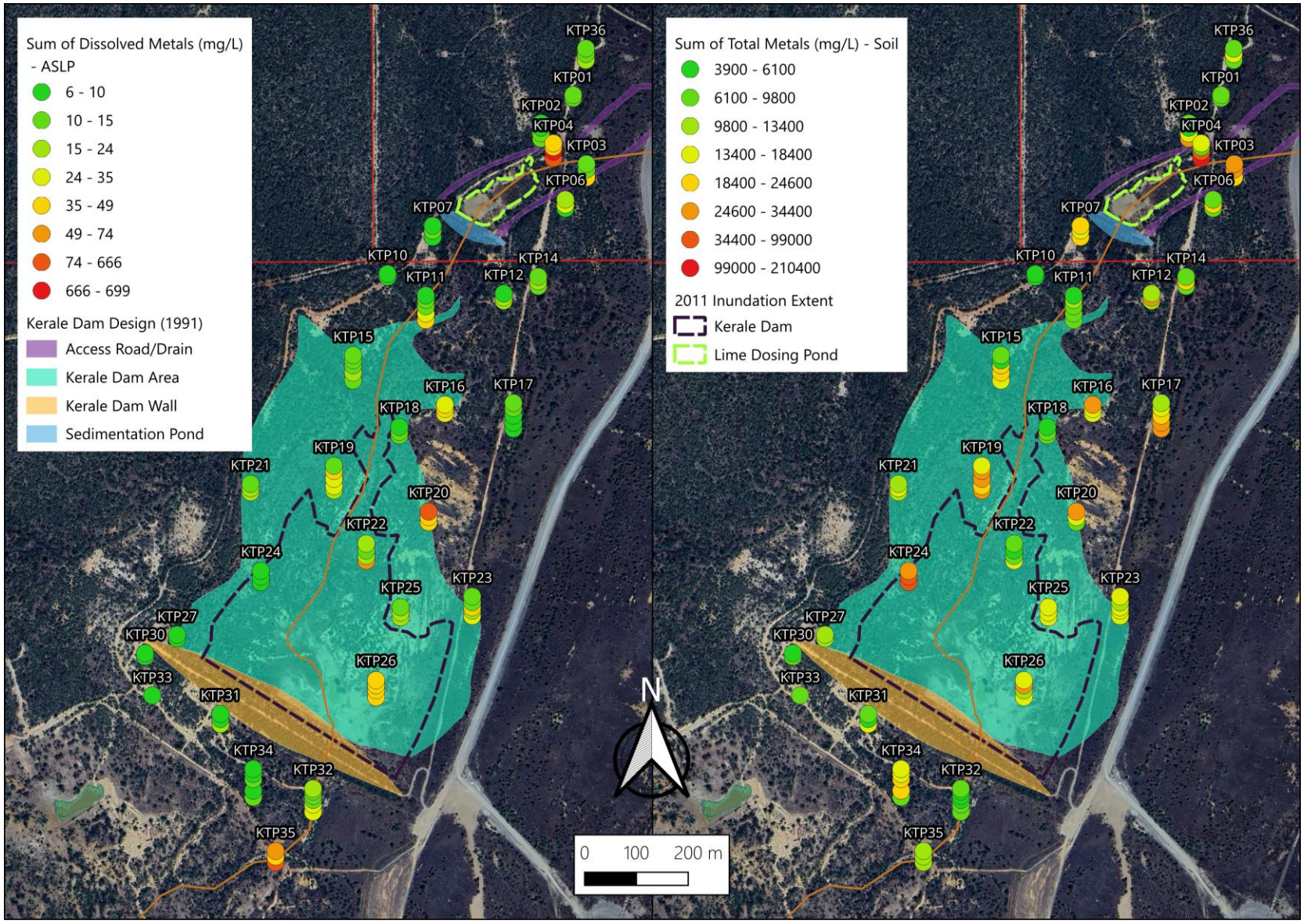
This contrast demonstrates that metal mobilisation at KTP04 is controlled by mineral assemblage and geochemical conditions within the profile. At KTP04-3, the presence of jarosite and Fe-bearing phases under acidic and oxidising conditions is consistent with active dissolution and release of metals to solution. In contrast, at KTP04-4, the absence of these phases and dominance of gypsum, which is non-acid generating, corresponds to limited metal mobilisation despite a substantial solid-phase metal inventory.

Away from KTP04, additional zones of elevated dissolved metals (including KTP16, KTP19, KTP20 and KTP35) are not randomly distributed, but are spatially aligned along the drainage pathway extending from the former evaporation pond toward the Kerale Dam embankment and further downstream. These locations correspond to the mapped drainage line and represent areas where water interaction, solute transport and progressive dissolution of stored mineral phases are most likely to occur. In contrast to KTP04, these areas generally contain only moderate total metal concentrations, indicating that elevated dissolved metals are associated with mobilisation along flow pathways rather than with the largest solid-phase metal inventories.

Overall, the comparison demonstrates that soils within the Kerale Area act as a significant reservoir of metals, with the highest concentrations located in the former lime dosing pond. Mobilisation of metals to aqueous solution is highly controlled by local mineralogy and hydrological setting. Areas of highest total metals do not consistently correspond to the highest dissolved metals; instead, mobilisation is concentrated in specific intervals (e.g. KTP04-3) and along drainage-controlled pathways where conditions favour mineral dissolution. This indicates that future metal mobility is likely to be focused along these preferential flow paths rather than uniformly across areas of highest metal storage.

To summarise, the spatial distribution of elevated dissolved metals along the drainage pathway likely reflects localised accumulations of metal-rich sediments derived from the former lime dosing pond and subsequently redistributed along the drainage line over time. Identification and removal of all such dispersed accumulations would be impractical. A more feasible and effective approach is to target the primary source of acidity and metals, namely the secondary mineral phases within the former lime dosing pond.

FIGURE 4-2 SPATIAL COMPARISON BETWEEN SUM OF DISSOLVED AND TOTAL METALS



4.1.2.3 MINERALOGY (XRD RESULTS AND IMPLICATIONS)

Secondary sulfate minerals

XRD results confirm that secondary sulfate minerals are present within the Kerale Area and are spatially associated with areas of elevated stored acidity and sulfate. Gypsum and jarosite are most abundant within and immediately downstream of the former lime dosing facility footprint, particularly at KTP04, where these phases occur at their highest measured proportions and increase with depth within the residual lime sludge profile. This distribution is consistent with elevated total sulfur, TAA, EC and sulfate concentrations identified in the geochemical dataset.

Beyond the former facility footprint, secondary sulfate minerals persist at lower levels along the inferred drainage pathway. Gypsum is identified at KTP07 and KTP35, indicating downstream transport or redistribution of sulfate-bearing materials. Jarosite is detected at several locations along the drainage line, confirming that acidity-hosting sulfate phases are not confined solely to the lime dosing infrastructure but are distributed across parts of the broader catchment.

The absence or low content of secondary sulfate minerals in some areas indicates that sulfate-hosted acidity is not uniformly distributed, but concentrated in discrete areas associated with historical AMD neutralisation and subsequent redistribution processes.

Carbonate minerals

XRD results of the tested materials indicate that carbonate minerals are largely absent from the Kerale Area, particularly along the drainage-line pathway extending down-gradient from the former lime dosing facility. Calcite is detected only at a small number of isolated locations outside the main drainage-line system (KTP03-2, KTP06-2 and KTP20-2) and is not detected in samples collected along the drainage line (including KTP07, KTP19, KTP24 and KTP35) or within the former lime dosing footprint at KTP04.

The absence of carbonate minerals along the drainage line demonstrates that historical lime dosing did not generate a laterally continuous or transportable carbonate signature. Instead, any carbonate-bearing material has been retained only at isolated locations and has not persisted or propagated along preferential flow paths. This mineralogical pattern explains why alkaline behaviour is restricted to discrete locations and why much of the drainage-line system exhibits consistently acidic characteristics despite proximity to historically lime-affected areas.

The limited prevalence of lime-derived carbonate minerals reflects the geochemical reactions that occur during lime dosing of sulfate-rich AMD. When lime-treated AMD contains elevated sulfate, dissolved (‘aq’) calcium released during neutralisation preferentially combines with sulfate to form gypsum, rather than remaining as a stable carbonate phase:

$$Ca^{2+}_{(aq)} + SO_4^{2-}{}_{(aq)} + 2\ H_2O \rightleftarrows CaSO_4{\times}2\ H_2O_{(s)}$$

As pH rises into the circumneutral range (pH~6-7), dissolved ferric iron precipitates rapidly as iron hydroxide:

$$Fe^{3+}_{(aq)} + 3\ H_2O \rightleftarrows Fe(OH)_{3(s)} + 3\ H^+_{(aq)}$$

Under sulfate-rich conditions, this iron-rich material can subsequently react to form secondary iron sulfate minerals such as K-jarosite:

$$K^+ + 3\ Fe^{3+} + 2\ SO_4^{2-} + 6\ H_2O \rightleftarrows\ KFe_3(SO_4)_2(OH)_{6(s)} + 6\ H^+$$

These reactions demonstrate that lime dosing primarily promotes the formation of secondary sulfate and iron phases, rather than leaving a persistent solid-phase carbonate residue. As a result, lime influence is evident through sulfate and iron phase accumulation near the dosing area and along limited transport pathways, while carbonate minerals remain scarce and spatially restricted.

Iron-containing phases

XRD results indicate that iron is present in the solid phase as a combination of secondary iron sulfate minerals and iron oxides, with a strongly heterogeneous spatial distribution across the Kerale Area. Iron-bearing sulfate phases, primarily jarosite, are concentrated at the former lime dosing footprint and persist at selected locations along the drainage line, while iron oxides (goethite and hematite) occur at elevated levels at discrete downstream and impoundment locations.

Jarosite is detected at KTP04 within the former lime dosing footprint and at selected drainage-line and downstream locations, including KTP07, KTP24, KTP34 and KTP35. The occurrence of jarosite beyond the immediate dosing area indicates that iron-sulfate phases formed during historical AMD neutralisation have not remained confined to the original deposition zone, but have been redistributed or preserved locally within the drainage system. This spatial pattern mirrors sulfate behaviour and supports the interpretation that part of the iron inventory is retained in acid-generating secondary sulfate minerals rather than uniformly converted to oxide phases.

Iron oxides are present predominantly as goethite and hematite, with elevated concentrations observed at specific locations rather than across entire zones. The highest hematite content in the dataset is recorded at KTP07-3 along the northern drainage line, while elevated goethite contents are identified at KTP19-2 and KTP24-2 within the central west zone.

Spatial mineralogy analysis

Jarosite and calcite

Consistent with the mineralogical interpretations above, the spatial distribution of jarosite and calcite as determined by XRD shown in Figure 4-2 highlights the concentration of secondary sulfate minerals near the former lime dosing facility footprint. Jarosite is most prominent at KTP04, reflecting formation within the lime dosing pond where AMD was neutralised with lime. Away from the facility, jarosite occurrence is spatially restricted and follows a well-defined drainage pathway.

Within Kerale Dam, jarosite is present at KTP24, which lies within the 2011 dam inundation extent. This indicates that neutralised AMD-lime mixed water stored within Kerale Dam during operations contained elevated dissolved sulfate and metals, and that these constituents later precipitated as jarosite within soils exposed to prolonged inundation. In contrast, KTP19 and KTP20 are located outside the historical Kerale Dam inundation footprint and contain no jarosite, demonstrating that secondary sulfate mineral formation did not occur where AMD-lime treated water did not reach.

Downstream of the dam wall, jarosite identified at KTP34 and KTP35 is consistent with seepage mechanisms. As this water moved along the ephemeral drainage line and interacted with soils, changes in pH, evaporation, and oxidation conditions would have promoted precipitation of

secondary sulfate minerals such as jarosite. Once formed, these minerals represent a stored solid-phase reservoir of acidity that can release acidity over time through dissolution, explaining how neutralised mine-affected water can result in persistent acidic behaviour long after active dosing and releases ceased.

In contrast to jarosite, carbonate minerals show a sparse and discontinuous distribution across the site. Calcite is restricted to isolated locations and does not form a continuous horizon within the lime dosing pond, Kerale Dam or along the drainage pathway. When viewed together with the historical Kerale Dam and lime dosing pond inundation extents, this mineralogical pattern potentially reflects a legacy imprint of AMD-lime dosing and water handling practices, and explains the absence of a laterally continuous carbonate buffering layer across the investigation area.

Hematite and goethite

Figure 4-4 shows the spatial distribution of hematite and goethite identified by XRD. These iron minerals occur at more locations than jarosite and are present both inside and outside the historical Kerale Dam inundation area.

Near the former lime dosing facility (KTP04) and immediately downstream, hematite and goethite commonly occur together with jarosite. This indicates that iron was originally transported in dissolved form in AMD-lime dosing waters and subsequently precipitated out of solution to form solid iron-containing minerals. Jarosite formed under acidic, sulfate-rich conditions, while hematite and goethite formed as water chemistry evolved over time, particularly as pH increased and sulfate concentrations declined.

Within the Kerale Dam inundation area, elevated hematite and goethite are identified at locations such as KTP19, KTP20 and KTP24. At KTP24, iron oxides occur together with jarosite, consistent with prolonged inundation by sulfate- and iron-rich water during historical storage of neutralised AMD within Kerale Dam. In contrast, KTP19 and KTP20 contain hematite and goethite but no jarosite, indicating that although iron was present and retained in soils at these locations, conditions were not suitable for jarosite formation or preservation.

Downstream of the dam wall, hematite and goethite are present at KTP34 and KTP35, including at locations where jarosite is also detected. As this water moved along the ephemeral drainage line, dissolved iron was deposited and retained in soils, forming iron oxides as water chemistry evolved.

Overall, hematite and goethite represent iron that has remained in the soil after AMD-lime dosing waters were no longer present. Jarosite formation records earlier acidic and sulfate-rich conditions, while the presence of iron oxides reflects later, more stable conditions. The coexistence and separation of these minerals across the site therefore reflect varying changes in water chemistry over time across the sampling locations.

FIGURE 4-3 SPATIAL DISTRIBUTION OF JAROSITE AND CALCITE (XRD)

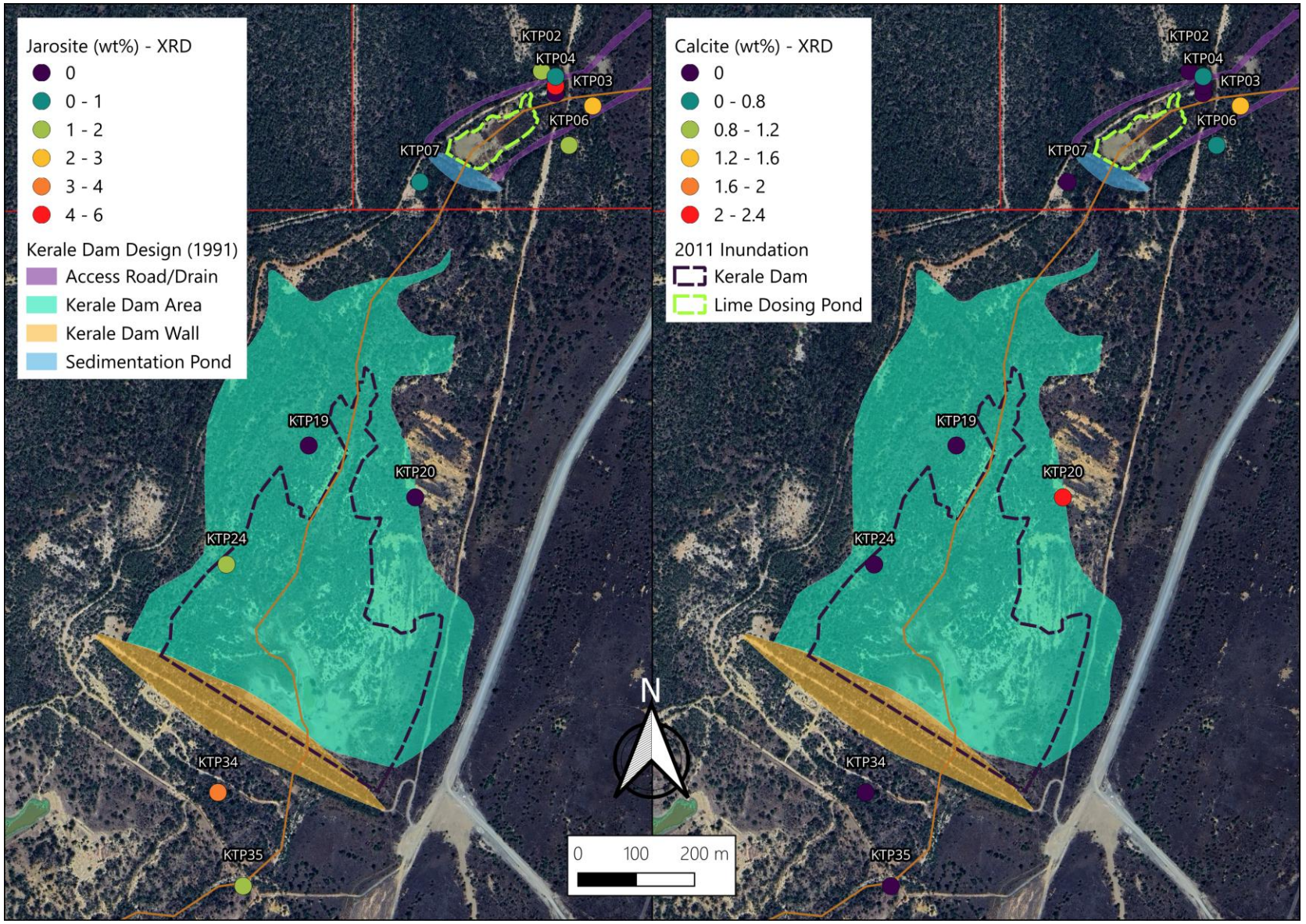
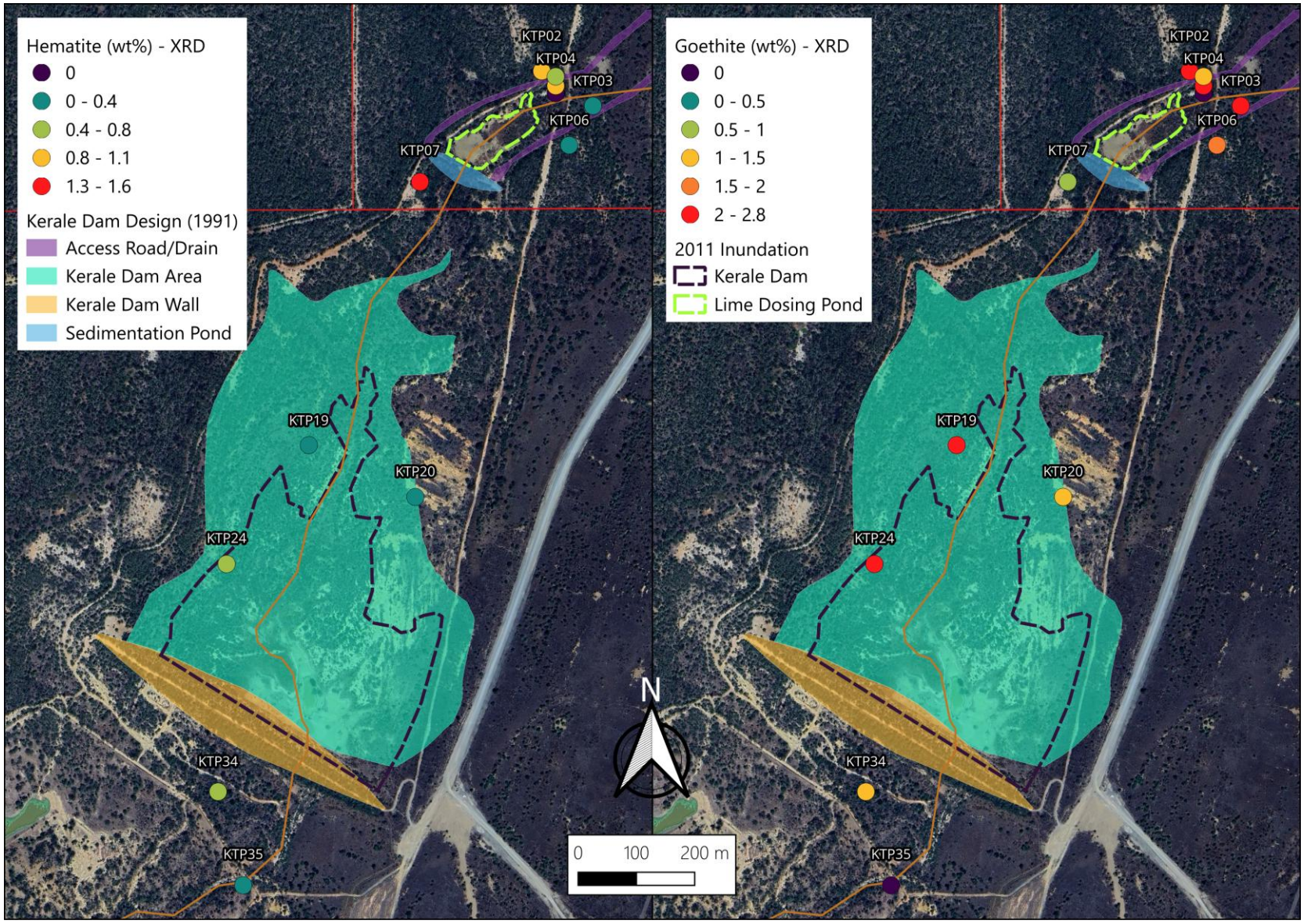


FIGURE 4-4 SPATIAL DISTRIBUTION OF HEMATITE AND GOETHITE (XRD)



Implications of mineralogy for acidity persistence

Mineralogical results indicate that the acidity observed in the Kerale Area persists due to the presence of a deposit of solid-phase secondary sulfate minerals in the former lime dosing pond area (KTP04). This deposit also contains significant amount of metals and metalloids (Section 4.1.2.2). As these minerals are slowly dissolved over time, sulfate, acidity and metals have been mobilised in contact water. As a consequence of this, certain locations along the drainage line towards the Kerale Dam embankment also contains elevated acidity and metals. Unlike transient dissolved acidity, this mineral-hosted acidity is retained over extended periods, leading to continued acidic responses even in the absence of ongoing sulfide oxidation.

Secondary sulfate minerals, including gypsum and jarosite, act as long-term reservoirs of acidity, dissolving gradually rather than being flushed or exhausted rapidly. Their occurrence at multiple locations and depths, particularly within the northern zone and along the drainage system, demonstrates that acidity persistence is governed by the stability and distribution of these minerals rather than by short-term hydrological events or isolated releases.

The concentration of secondary sulfate minerals at KTP04, together with their persistence at lower abundance along the drainage line, identifies the former lime dosing pond as the principal mineralogical source zone of acidity, with Kerale Dam reflecting downstream accumulation rather than in-situ formation. This spatial distribution explains how acidity generated and stored upgradient can persist through time and be expressed more broadly across the system.

Acidity persistence is further reinforced by the limited capacity for acid neutralisation. Carbonate minerals are scarce and restricted to isolated locations. Consequently, once acidity is released from sulfate-bearing minerals, there is no site-wide buffering mechanism capable of neutralising it, allowing acidic conditions to persist within soils and surface water in the Kerale Area.

4.1.2.4 FUTURE DISSOLUTION OF NON-ACID-GENERATING SULFUR SPECIES

Non-acid-generating S at KTP04 is attributed to secondary sulfate minerals stored within the residual lime sludge profile. As the residual lime is progressively consumed by acid hydrolysis, these minerals will continue to dissolve and release ions.

The nature of the dissolution depends on the mineral phase. Gypsum dissolution is non-acid-generating:

$$CaSO_4 \cdot 2\ H_2O \rightarrow Ca^{2+} + SO_4^{2-} + 2\ H_2O$$

In contrast, jarosite and alunite, two likely mineral phases at KTP04, hydrolysis reactions generate acidity:

$$\underline{\text{Jarosite}}: KFe_3(SO_4)_2(OH)_6 \rightarrow K^+ + 3\ FeOOH + 2\ SO_4^{2-} + 3\ H^+$$

$$\underline{\text{Alunite}}: KAl_3(SO_4)_2(OH)_6 \rightarrow K^+ + 3\ Al(OH)_3 + 2\ SO_4^{2-} + 3\ H^+$$

Note that mineral compositions across the Kerale Area as assessed by XRD analysis identifies jarosite as the dominant secondary sulfate minerals in the former lime dosing pond area (Section 1.1.1.1 above).

Jarosite is chemically stable at pH<4 and becomes relatively soluble above pH 4.7 (MEND, 2009). Alunite, chemically stable at pH<5.5, may also be present given the elevated total and dissolved Al concentrations at this site.

Results from KTP04-3 indicate that it is already in lime deficit, consistent with acid generation from jarosite hydrolysis and other secondary sulfate mineral dissolution that exceeds the remaining neutralising capacity at that interval. As lime is exhausted progressively through the profile, similar conditions are expected to develop at shallower intervals over time.

Dissolved and total aluminium and iron spatial analysis

Total and dissolved Al and Fe results were used to characterise the distribution of these elements in the soil profile and assess the extent of secondary mineral dissolution across the study area.

Total Al and Fe reflect solid-phase concentrations including secondary sulfate minerals such as alunite and jarosite, while dissolved Al and Fe in ASLP leachate reflect the fraction mobilised under prolonged contact with water. Results are shown spatially in Figure 4-5 and Figure 4-6.

- The highest concentrations of total Al and total Fe were recorded at KTP04-4, consistent with accumulation of secondary Al and Fe sulfate minerals within the residual lime sludge profile.
    - KTP04 was the only accessible sampling location at the former lime dosing pond during the time of sampling. While elevated total and dissolved Al and Fe are observed downgradient along local drainage lines, concentrations decrease with distance from KTP04 and do not reach the enrichments recorded at the pond itself.
        - This spatial pattern indicates that some leaching and redistribution has occurred, but that a substantial proportion of Al and Fe remains retained at KTP04, consistent with progressive but incomplete dissolution of secondary sulfate minerals formed within residual lime sludge.
    - Despite the high solid-phase concentrations at KTP04, dissolved Al and Fe in ASLP leachate are very low (<1 mg/L at KTP04-3 and KTP04-4). This indicates that Al and Fe are retained in solid secondary mineral phases, which limits metal release under current conditions.
        - This is in theory consistent with the low dissolution rates of diaspore as reported in Peryea (1998) and jarosite and alunite as reported in MEND (2009).
        - This is in practise supported by the XRD results in Section 4.1.2.3, which show the presence of jarosite (6 wt%), goethite (3 wt%) and hematite (1 wt%) at KTP04-3, and the absence of Fe-bearing sulfate and oxide phases at KTP04-4, which is instead dominated by gypsum (29 wt%).
- Elevated dissolved Al and Fe were concentrated in the central east zone, particularly at KTP16, KTP19 and KTP23, where values reached up to 13.9 mg/L Al and 14.8 mg/L Fe.
    - These elevated concentrations occurred across a range of final ASLP pH from near-neutral to slightly alkaline (5.5 to 8.5), consistent with the dissolution of jarosite above pH 4.7 and alunite above pH 5.5 (MEND, 2009).
- 21 samples returned acidic final ASLP pH (<5) alongside low dissolved Al (<0.9 mg/L), indicating that solid-phase Al at those locations is held in forms that do not dissolve readily even under acidic leaching conditions. This is consistent with the very slow dissolution

kinetics of alunite, which may persist in the profile long after more soluble secondary minerals have been flushed (MEND, 2009).

- The spatial differences between high solid-phase Al and Fe at KTP04 and elevated dissolved Al and Fe in the central east zone indicates that secondary mineral dissolution is more advanced at the latter locations, likely reflecting longer exposure to leaching conditions and more complete flushing of the profile.

FIGURE 4-5 DISSOLVED (ASLP) AND TOTAL (SOIL) ALUMINIUM CONCENTRATIONS

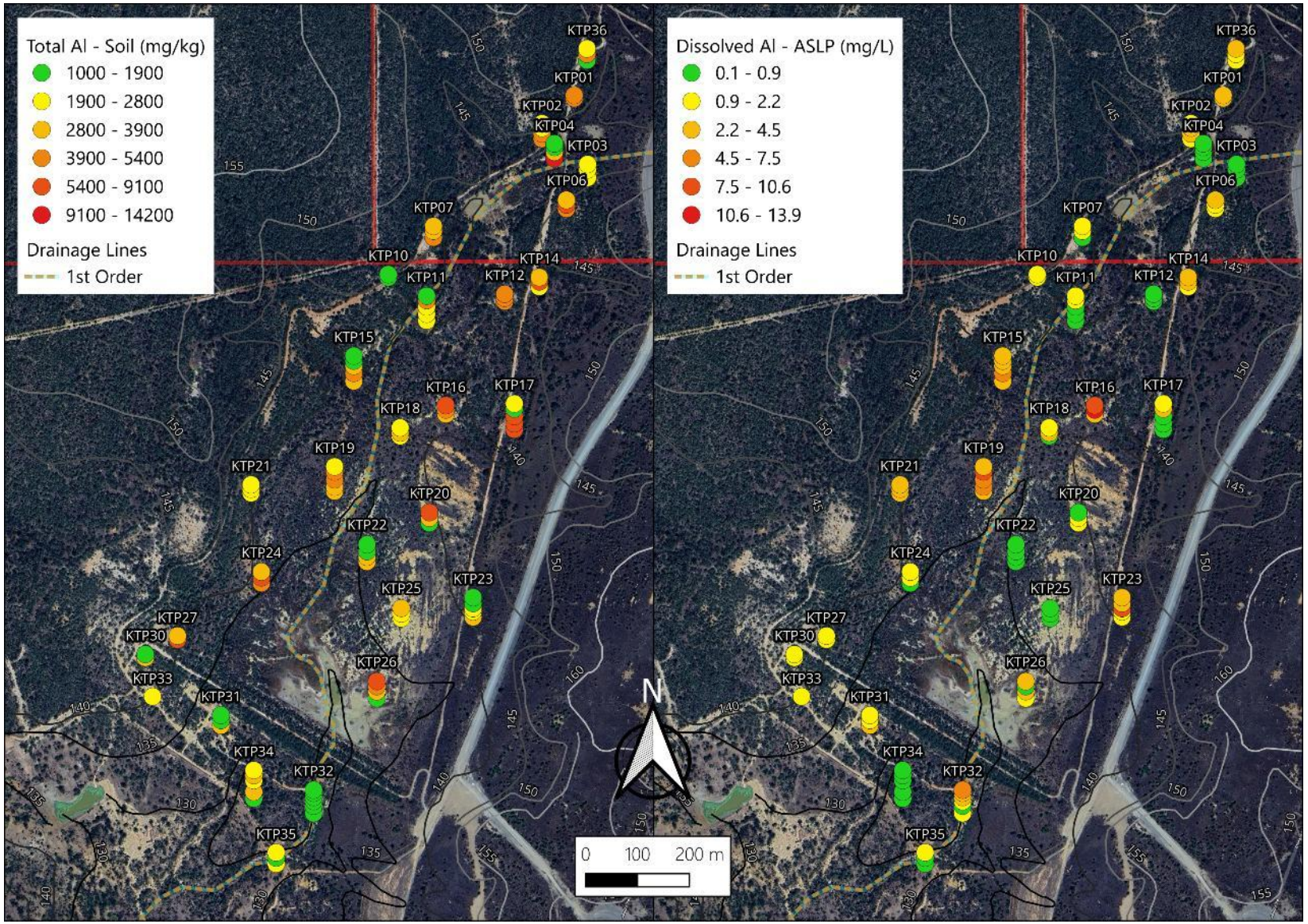
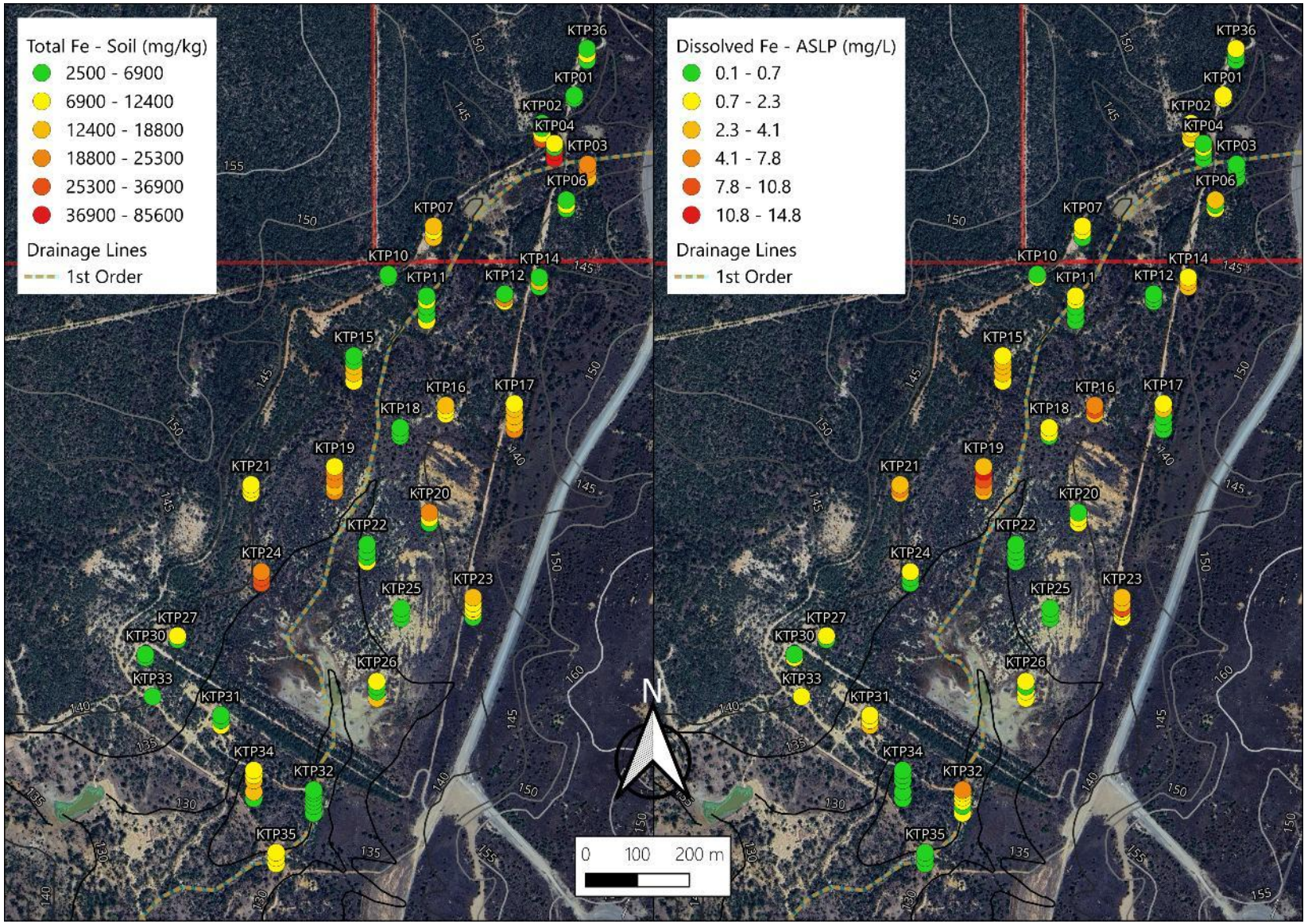


FIGURE 4-6 DISSOLVED (ASLP) AND TOTAL (SOIL) IRON CONCENTRATIONS



4.2 GEOCHEMICAL MODELLING RESULTS

Geochemical equilibrium modelling was undertaken using PHREEQC Version 3.8.6 with the minteq.v4 thermodynamic database to evaluate mineral precipitation behaviour in different types of water in the Kerale Dam area.

4.2.1 GROUNDWATER

Groundwater geochemical modelling was undertaken using monitoring data from bores K01 and K02 located downstream of the Kerale Dam embankment. It was used to assess which mineral phases are likely to precipitate as groundwater chemistry equilibrates with the surrounding mineralogy, and to identify the dominant geochemical reactions controlling dissolved metal and ion concentrations.

Average groundwater water chemistry (dissolved rather than total metals) for each bore (Table 4-1) was used as model input. In addition, an assessment of geochemical conditions vs time was completed by modelling water quality for each separate monitoring event in contact with the accumulated mineral assemblage from the previous event, providing an indication of groundwater conditions vs time. A suite of 60 mineral phases relevant to AMD geochemistry was included in the PHREEQC 'EQUILIBRIUM_PHASES' block, covering Fe oxyhydroxides, Fe and Al sulfate minerals, carbonate phases, sulfate evaporites and phosphate phases.

Precipitation of some mineral phases, such as diaspore (Hatipoğlu, 2010), boehmite (Boeva, 2022) and hematite (Kato, 2009) were quenched due to not being kinetically plausible in groundwater conditions.

TABLE 4-1 SOURCE TERM CHEMISTRY FOR PHREEQC MODELLING OF MEAN GROUNDWATER COMPOSITIONS

Parameter	***Unit***	**K01**		**K02**	
		Mean	***n***	**Mean**	***n***
pH	-	4.49	*23*	5.57	*21*
Temperature	*°C*	27.9	*23*	27.9	*21*
SO_4	*mg/L*	2,390	*25*	2,330	*23*
Alkalinity as $CaCO_3$		21.9	*24*	178	*22*
F		0.368	*25*	0.287	*23*
Ca		498	*24*	514	*22*
Mg		156	*24*	179	*22*
Na		307	*24*	662	*22*
K		37.1	*24*	20.6	*22*
Cl		98.3	*24*	701	*22*
N(5)		0.0116	*25*	0.0328	*23*
P		0.121	*24*	0.733	*22*
Fe		30.7	*25*	22.9	*23*
Al		9.69	*25*	0.439	*23*

Parameter	*Unit*	K01		K02	
		Mean	***n***	**Mean**	***n***
Mn		3.26	*25*	3.03	*23*
Cu		0.0653	*25*	0.0146	*23*
Zn		0.898	*25*	0.371	*23*
Ni		0.106	*25*	0.0111	*23*
Co		0.0518	*10*	0.00989	*9*
Pb		0.0127	*25*	0.00413	*23*
As		0.0005	*25*	0.00087	*23*
B		0.326	*25*	0.452	*23*
Cr		0.0018	*25*	0.00172	*23*
Li		0.235	*24*	0.478	*22*
Ba		0.026	*24*	0.0182	*22*
Cd		0.0003	*25*	0.000285	*23*
Be		0.005	*24*	0.00296	*22*
U		0.0008	*24*	0.000546	*22*
V		0.0048	*25*	0.00544	*23*
Se		0.0048	*25*	0.00478	*23*
Mo		0.000479	*24*	0.000614	*22*
Sb		0.000604	*24*	0.0005	*22*

Notes:
- *Values reported as <LOR were substituted with half the LOR prior to calculating means.*
- *Parameters where all values were at or below detection are reported as <LOR.*

4.2.1.1 SUMMARY OF RESULTS

This section summarises the findings of the PHREEQC modelling of dissolved groundwater chemistry for the K01 and K02 bores. Modelling was conducted using two complementary approaches:

- Single-step equilibration of the average (mean) groundwater composition for each bore.
- Sequential equilibration of water quality from individual monitoring events with the prior mineral assemblage to evaluate temporal variability in equilibrium behaviour.

For both approaches, charge balancing was done by letting PHREEQC adjust the Na and Cl concentrations until net zero charge in the system. Since both of these ions are considered inerts, this will not affect the end results of the modelling.

Further details of individual PHREEQC outputs, including resultant saturation indices (SI), which are used to indicate potential precipitation and/or dissolution, are provided in Appendix E4.

Rather than presenting results for each monitoring event individually, the summary tables group events based on dominant mineral precipitation behaviour and post-equilibration

chemical trends. This approach highlights consistent response patterns that are temporally coherent and directly relevant to understanding the persistence, buffering and redox evolution of acidic groundwater at the site.

Across both bores, equilibration behaviour resolves into a limited number of mineral-controlled response types. Where equilibration is dominated by precipitation of aluminium sulfate phases, groundwater typically converges on strongly acidic conditions with limited neutralisation capacity. Where iron oxide phases dominate, equilibration commonly involves large decreases in pe and, in some cases, increases in pH, producing post-equilibration conditions that differ fundamentally from strongly acidic groundwater.

K01 Bore

Single-step equilibration of the average K01 solution against the full mineral phase applied from the database assemblage resulted in precipitation that was dominated by alunite, with minor hematite and barite formation. Alunite precipitation consumed dissolved aluminium, potassium, and sulfate and released acidity, driving pH from moderately acidic input conditions toward strongly acidic post-equilibration values. Iron oxide and oxyhydroxide phases other than hematite remained undersaturated and did not precipitate. Gypsum and carbonate minerals were also undersaturated (SI<0), consistent with negligible alkalinity and persistently acidic conditions in K01 groundwater.

Equilibration of the 24 individual K01 monitoring events in time order demonstrates that alunite exerts a consistent buffering control on groundwater chemistry across nearly all events. Although some variability in redox behaviour occurs, post-equilibration pH converges to a narrow strongly acidic range in the majority of events, irrespective of input pH. Magnetite precipitation occurs only in a limited subset of higher-pH events and does not persist across the monitoring record.

The temporal results indicate that acidic groundwater conditions at K01 are persistent and primarily controlled by aluminium sulfate equilibria, with limited capacity for neutralisation or sustained redox moderation.

K02 Bore

Single-step equilibration of the average K02 groundwater composition against the revised mineral phase assemblage resulted in precipitation of magnetite, gibbsite, and barite. Magnetite was the dominant precipitating phase and reflects adjustment of dissolved iron under reducing conditions, contributing to a decrease in pe from the default oxidising value toward weakly reducing conditions. Aluminium precipitation occurred only as gibbsite and was associated with a minor decrease in pH, indicating weak aluminium buffering relative to K01. Aluminium sulfate phases remained undersaturated and did not precipitate under average conditions.

Sequential equilibration of the individual K02 monitoring events shows more heterogeneous behaviour compared to K01. Magnetite precipitation occurs in most events and dominates equilibrium behaviour under slightly acidic to neutral input pH conditions. In a subset of events, alunite precipitates under strongly acidic conditions, indicating localised aluminium and sulfate control. These alunite-precipitating events converge toward strongly acidic post-equilibration pH, consistent with alunite-controlled buffering under elevated aluminium and sulfate activity.

Gibbsite and $Fe(OH)_{2.7}Cl_{0.3}$ precipitate only in isolated events and do not persist across sequential timesteps, indicating localised and transient controls rather than systematic buffering behaviour. Barite precipitates consistently at low mass across most events, driven by elevated barium and sulfate concentrations, but does not materially influence sulfate chemistry.

Overall, the K02 temporal results indicate weaker and more variable mineral buffering compared to K01, with equilibrium behaviour controlled primarily by iron redox adjustment through magnetite precipitation and limited aluminium buffering.

4.2.2 KTP ASLP SAMPLES

This section summarises the findings of the PHREEQC modelling of the ASLP results of the KTP samples, with the results considered to indicate porewater composition. Additional details of the results are included in Appendix E5.

Table 4-2 summarises the PHREEQC results by grouping samples according to zone and dominant precipitated mineral phases according to their degree of supersaturation. Rather than presenting individual sample outputs, the table highlights consistent response patterns that are spatially coherent and directly relevant to the project objective of understanding the behaviour and distribution of acidic porewaters across the site.

Note that diaspore (aluminium hydroxide oxide) was not quenched for the geochemical equilibrium modelling of KTP ASLP samples due to it being a feasible phase in certain surface water systems (Zhao, 2023).

Across all zones, equilibration behaviour resolves into a limited number of phase controlled response types. Where precipitation by supersaturation (SI>0) is predicted to be dominated by diaspore alone, modelled waters consistently converge on acidic and oxidising conditions, indicating persistence of acidic chemistry without effective neutralisation or redox moderation. Where hematite and or magnetite are expected to precipitate, equilibration commonly involves large decreases in pe and, in some cases, increases in pH, producing post equilibration conditions that differ fundamentally from the acidic model inputs.

The table shows that:

- In the northern zone, particularly around KTP04 and KTP06, there are substantial spatial and vertical differences in modelling results.
    - The coexistence of acidic oxidising and alkaline reducing conditions within short distances indicates highly localised geochemical controls consistent with legacy site activities.
    - The absence of diaspore precipitation in deep KTP04 samples due to low dissolved aluminium, contrasted with nearby KTP06 where the highest diaspore, hematite, magnetite and carbonate precipitate masses across the dataset occur.
    - Although porewater chemistry in this area is spatially heterogeneous due to residual lime and iron phases, these effects are localised and do not result in sustained alkalinity at the surface water scale, which remains consistently acidic due to dilution, mixing and the finite nature of lime buffering.

- In the central east zone, results of equilibration vary, range from acidic, aluminium controlled profiles, to intermediate transitional profiles and alkaline profiles, which are dominated by precipitation of hematite and magnetite.
    - This variability indicates spatial variability in pore water chemistries and geochemical controls, without assuming a single acidity source.
    - The mass statistics confirm this variability, with diaspore precipitation modelled in most samples but at highly variable total precipitated mass, and with locally elevated hematite, magnetite and carbonate precipitation producing the highest combined phase masses observed across all zones.
- In the central west zone and much of the southern zone, results of equilibration are more consistent, dominated by diaspore precipitation, and with porewaters remaining acidic and oxidising after equilibration.
    - These patterns indicate widespread acidic porewater conditions that persist regardless of depth, with little evidence of local buffering or redox control.
    - The precipitation masses of diaspore is consistently higher than in other areas.
    - Hematite, magnetite and barite occur only at low levels and in localised areas, and carbonate phases are absent.

These results demonstrate that acidic and alkaline porewaters are likely to coexist in the Kerale area, with associated variations in mineral precipitation.

TABLE 4-2 SUMMARY OF PHREEQC RESULTS OF KTP ASLP CHEMISTRY

Zone	Sub-group	Sample ID(s)	Equilibration Trend	Dominant Phase(s)	Post-equilibration Chemistry	Interpretation
Northern – former lime dosing area n_{tot} = 22	Acidic, aluminium-controlled	KTP01-1, KTP01-2, KTP02-1, KTP02-3, KTP02-4, KTP07-1, KTP07-2, KTP07-3	pH decreases and pe increases during equilibration	Diaspore	Acidic and oxidising conditions persist after precipitation	Acidic porewaters with no evidence of lime buffering or iron-controlled redox reactions
	Residual lime/carbonate influenced	KTP03-1, KTP03-2, KTP03-3	pH remains alkaline with modest pe decrease	Diaspore with hematite and magnetite, carbonate locally	Alkaline and oxidising conditions maintained	Residual influence of historical lime dosing activities
	Heterogeneous lime and iron distribution	KTP04-1, KTP04-2, KTP04-3, KTP04-4	Strongly variable pH and pe response between samples	Diaspore, barite, hematite and magnetite in varying combinations	Co-existence of acidic oxidising and alkaline reducing conditions	Localised legacy effects from AMD-lime dosing activities around the evaporation pond producing spatially variable porewater chemistry
	Highly reactive lime-affected materials	KTP06-1, KTP06-2, KTP06-3	Large pH increase and strong pe decrease in reactive samples	Diaspore with hematite and magnetite	Alkaline to near-neutral conditions with reduced pe	Concentrated lime dosing residues allowing extensive precipitation and large chemical changes during equilibration
Central west – western impoundment n_{tot} = 22	Acidic, aluminium-controlled	*All*	pH decreases, pe increases uniformly	Diaspore	Acidic and oxidising conditions	Widespread stored acidity and lack of buffering lead to consistent equilibration behaviour regardless of depth
Central east – eastern impoundment and drainage line	Acidic, aluminium-controlled	KTP11-1, KTP11-2, KTP11-3, KTP11-4, KTP12-1, KTP12-2, KTP12-3, KTP14-1, KTP14-2, KTP22-4	pH decreases, pe changes little	Diaspore	Acidic and oxidising conditions persist	Acidic porewaters with no evidence of lime buffering or iron-controlled redox reactions

Zone	Sub-group	Sample ID(s)	Equilibration Trend	Dominant Phase(s)	Post-equilibration Chemistry	Interpretation
n_{tot} = 41	Transitional seepage and iron interaction	KTP16-1, KTP16-2, KTP16-3, KTP17-1, KTP17-2, KTP17-3, KTP17-4, KTP17-5	pH decreases, pe decreases variably	Diaspore with hematite and magnetite in some intervals	Acidic to near-neutral pH with mixed redox states	Partial influence of iron-rich materials produces variable redox changes
	Lime-affected alkaline profiles	KTP18-2, KTP18-3, KTP20-1, KTP20-2, KTP20-3, KTP23-1, KTP23-2, KTP23-3, KTP23-4, KTP23-5, KTP25-1, KTP25-2, KTP25-3, KTP26-1, KTP26-2, KTP26-3, KTP26-4	pH increases, pe decreases strongly	Hematite and magnetite, diaspore locally	Alkaline conditions with oxidising to reducing pe	Precipitation dominated by iron oxides under alkaline conditions drives strong redox changes
Southern – downgradient of Kerale Dam n_{tot} = 19	Acidic, aluminium-controlled	KTP31-1, KTP31-2, KTP31-3, KTP32-1, KTP32-2, KTP32-3, KTP32-4, KTP32-5, KTP34-1, KTP34-2, KTP34-3, KTP34-4, KTP34-5, KTP34-6, KTP35-2, KTP35-3	pH decreases, pe increases	Diaspore	Acidic and oxidising conditions persist	Downgradient transport and persistence of stored acidity dominate equilibration behaviour
	Localised lime or iron-rich materials	KTP32-6, KTP35-1	pH stable to slightly higher, pe decreases strongly	Hematite and magnetite	Near-neutral to alkaline pH with reducing conditions	Localised iron-rich materials at depth produce strong redox changes

4.2.3 COMPARISON OF GROUNDWATER AND KTP ASLP RESULTS

PHREEQC modelling results for groundwater (K01 and K02) and KTP ASLPs are compared to assess geochemical processes occurring across the Kerale area and to evaluate whether groundwater chemistry reflects the same controls as those identified in soil leaches. The primary objective of this comparison is to assess the extent to which groundwater at K01 and K02 exhibits geochemical behaviour and acidity characteristics consistent with legacy AMD-lime dosing activities identified from the KTP ASLP profiles. Groundwater results therefore provide an integrated test of whether soil-hosted sources of stored acidity and secondary mineral assemblages identified through the KTP investigation are influencing broader-scale water chemistry.

K01 and K02 are both located in the southern zone of the Kerale area (Figure 4-7), downgradient of the dam wall. K01 is situated approximately 80 m south of the dam wall near KTP32, while K02 is located approximately 175 m south of the dam wall near KTP35. Although neither bore is located within the footprint of the former lime dosing facility, their downgradient position means that groundwater chemistry reflects cumulative inputs transmitted through the soil profile and drainage pathways from across the Kerale catchment.

Groundwater seepage modelling indicates that water migrating from the Kerale Dam impoundment through the alluvial system moves at only a few meters per year (KCB, 2026). Since the commencement of lime dosing around 1990, this corresponds to groundwater movement to the area downgradient of the dam wall. As such, this distance is consistent with the potential influence of the former lime dosing system on groundwater at K01 and possibly at K02, located further down gradient.

The groundwater comparison in Table 4-3 is made against KTP ASLP samples located above the dam wall and within the Kerale soil profile, specifically KTP26, KTP22, and KTP19, and against central east KTP samples. These specific KTP samples represent upgradient locations containing porewater with likely AMD-lime influence.

K01 groundwater shows greater similarity to these KTP porewater samples than K02 based on overlap in pH, aluminium phase behaviour and redox range.

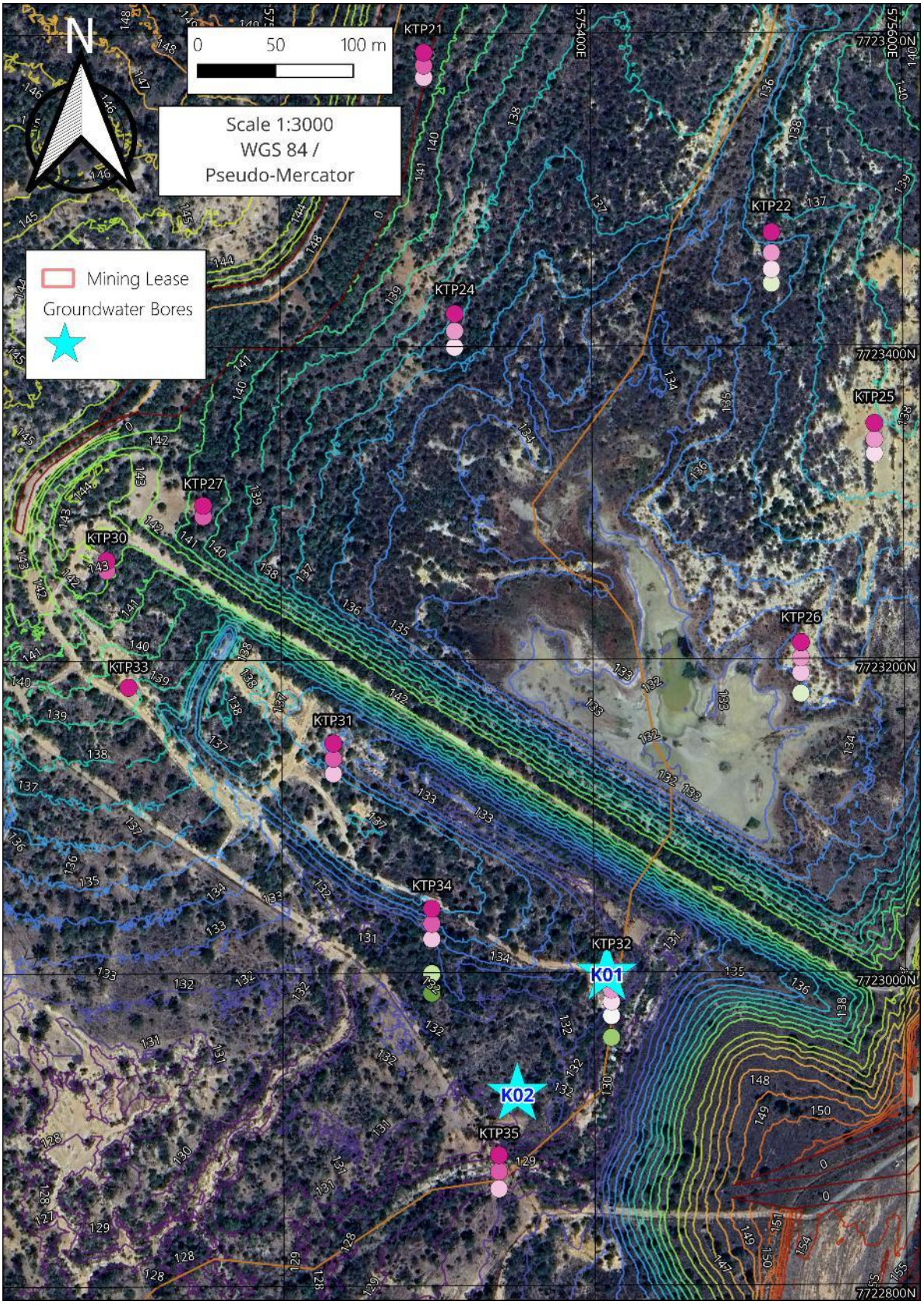
- K01 pH (3.53 to 6.14) overlaps with the acidic to circumneutral range observed in ALSP samples from KTP26, KTP22, and KTP19 (3.80 to 9.91), whereas K02 pH (4.46 to 6.49) is consistently higher and shows less overlap with the more acidic KTP porewater conditions.
- Aluminium phase behaviour further distinguishes K01 from K02. Alunite was predicted to precipitate in more sampling events, and at higher masses in K01 groundwater (23 events, 3.1 to 53 mg/kg) than in K02 groundwater (18 events, 0.08 to 25 mg/kg).
    - This indicates closer correspondence between K01 groundwater and aluminium-controlled conditions observed in ASLPs for KTPs in this area.
- Redox conditions at K01 (-2.31 to 4.95) overlap more fully with the KTP ASLP modelled pe range (-5.17 to 5.07). K02 spans a wider redox range (-2.77 to 6.76) as it extends to more strongly oxidising conditions than those modelled for most KTP ASLP samples.

TABLE 4-3 PHREEQC RESULTS COMPARISON OF KTP ASLP AND GROUNDWATER

Location/group	n_{tot}	pH range	pe range	Dominant Precipitated Phases (n, mg/kg)
KTP26, KTP22, KTP19 (above dam wall)	13	3.80-9.91	-1.85-4.62	Diaspore (12, 0.27-23.6); Hematite (6, 0.0008-1.92); Magnetite (2, 0.22-0.91); Calcite (1, 1.75)
Northern zone KTP (all)	22	3.78-9.38	-1.88-5.10	Diaspore (21, 0.044-8.54); Hematite (8, 0.072-3.48); Magnetite (3, 0.066-0.73); Calcite (4, 0.083-5.12)
Central east zone KTP (all)	41	3.75-10.44	-5.17-5.07	Diaspore (35, 0.27-25.5); Hematite (20, 0.00045-15.4); Magnetite (6, 0.22-7.57); Calcite (4, 0.87-2.25)
K01 groundwater	25	3.53-6.14	-2.31-4.95	Alunite[1] (23, 3.1-53); Barite (23, 0.01-0.11); Magnetite (6, 8.7-51); Fe(OH)2.7Cl0.3 (19, 0.26-59); MnHPO4 (4, 0.02-3.8); Gibbsite (1, 6.8)
K02 groundwater	25	4.46-6.49	-2.77-6.76	Magnetite (22, 0.0003-41); Alunite[1] (18, 0.08-25); Barite (21, 0.006-0.15); $Fe(OH)_{2.7}Cl_{0.3}$ (19, 0.26-59); MnHPO4 (4, 0.02-3.8); Gibbsite (1, 1.2)

[1] Noting that diaspore is quenched in groundwater modelling while its precipitation is allowed in the ASLP modelling.

FIGURE 4-7 SOUTHERN KERALE AREA WITH KTP SAMPLING LOCATIONS, FINAL LANDFORM TOPOGRAPHY AND K01 AND K02 BORE LOCATIONS



4.3 STATISTICAL ASSESSMENT

PCA was undertaken to support interpretation of the sources, behaviour, and persistence of acidity in groundwater within the Kerale area, with emphasis on the influence of legacy AMD lime dosing and the general geochemical properties of the soils. Full details are provided in Appendix E6 with the results are summarised as follows.

- PCA results indicate that acidity within Kerale Dam soils and porewater is primarily associated with sulfate and dissolved metal behaviour, consistent with the presence and mobilisation of secondary sulfate minerals formed during historical AMD management activities.
  - Samples with elevated PC1 scores are characterised by high dissolved SO_4 and associated dissolved metals, indicating release of stored acidity from sulfate mineral phases.
- The majority of KTP porewater samples plot away from this sulfate- and metal-enriched domain, indicating that strong acidity generation is not pervasive across the catchment.
  - This suggests that acidity is spatially restricted and stored, rather than continuously generated throughout the soil profile.
- A small number of porewater samples, most notably KTP04-3 and KTP04-4, are strongly separated from the main KTP population.
  - These samples exhibit very high sulfate enrichment and elevated dissolved metal concentrations, consistent with localised accumulation and dissolution of secondary sulfate minerals.
  - Their location at the former lime dosing facility footprint supports the interpretation that residual materials from historical AMD neutralisation have contributed to long-term acidity storage, which is now being episodically mobilised.
- PCA also identifies a subset of KTP samples controlled primarily by pH rather than sulfate or metal concentrations.
  - These samples indicate intervals where acid buffering processes dominate, consistent with residual lime, carbonate material, or secondary alkalinity associated with historical dosing activities.
  - This behaviour demonstrates that lime dosing has resulted in both attenuation and persistence of acidity, depending on local mineralogical and hydrological conditions.
- The combined PCA patterns therefore reflect co-existence of multiple acidity mechanisms within the Kerale Dam catchment, including:
  - stored acidity in secondary sulfate minerals, including episodic mobilisation of sulfate and metals from discrete source zones, and
  - localised buffering and attenuation where lime residues or alkaline materials remain effective.
- Groundwater data were included to test whether these soil-based processes are expressed downgradient and to inform potential source-pathway relationships.
  - Limited overlap between enriched porewater samples and selected groundwater samples indicates that pathway connectivity between the lime dosing plant area and groundwater south of the dam wall is unlikely.

- Historical groundwater data from the designated seepage monitoring bore (GLE01) indicate geochemical characteristics that overlap with Kerale Dam soil leachates at specific times. However, this bore has been dry since 2017 and does not currently provide a reliable basis for assessing ongoing soil-groundwater interaction.

Overall, the statistical assessment supports a conceptual model in which historical AMD management and lime dosing have created heterogeneous geochemical conditions, with acidity primarily stored in secondary sulfate minerals and mobilised from discrete locations rather than generated uniformly across the Kerale Dam catchment.

PCA provides evidence that both acidity persistence and partial attenuation are legacy outcomes of past management practices, and that current porewater chemistry, as represented by ASLP results, reflects the ongoing evolution of these materials under present-day hydrological conditions.

5. CONCEPTUAL SITE MODEL

5.1 OVERVIEW

A CSM is the qualitative description of plausible mechanisms by which human and/or environmental receptors may be exposed to site impact. For exposure to be considered possible, a mechanism (a 'pathway') must exist by which impact from a source can reach a receptor. This is labelled an SPR linkage.

Where a direct connection between a source and a receptor via an identified pathway is supported by available information, the pathway is considered complete. Where a pathway cannot be demonstrated due to the absence of a source, pathway or receptor, it is considered incomplete. Pathways are considered potentially complete where information is insufficient to conclusively demonstrate completeness or incompleteness.

This CSM focusses on the geochemistry of the Kerale area and is informed by groundwater and surface water quality data from that area, the hydrogeological conceptualisation and seepage assessment undertaken by KCB (2026), water balance modelling by WSP (2026) and the geochemical investigation of soils by ERM (2026).

The CSM considers the location and form of potential sources of impact to soil and/or groundwater, mechanisms for transport of COPCs from the inferred sources via shallow groundwater and surface water systems, and potential linkages to downstream environmental receptors.

In this CSM, the former lime dosing facility footprint (KTP04) is the primary origin of stored acidity, while Kerale Dam functions as an intermediate accumulation zone that may act as a secondary source of acidic water to downstream environments under certain hydrological conditions. For example, during periods of elevated water levels in the dam following rainfall, which may increase seepage into the underlying alluvial sediments.

5.2 POTENTIAL SOURCES OF IMPACT

The primary potential sources of impact include:

- Soils and sediments within the Kerale Area, including areas associated with the former lime dosing pond footprint (KTP04) and the intersecting drainage line, which contain stored acidity predominantly in secondary sulfate minerals formed during historical AMD management activities. These minerals act as a source of acidity and dissolved metals through dissolution under acidic conditions.
    - Geochemical data (ERM, 2026) indicate that acidity within the Kerale Dam surface water is largely derived from stored acidity in secondary sulfate minerals at the location of the lime dosing pond in the northern zone. These materials represent a potentially persistent source of acidity and dissolved metals that may be mobilised under leaching conditions.
        - In addition, soils along the drainage pathway extending from the former lime dosing pond toward the Kerale Dam embankment (e.g. KTP16, KTP19, KTP20 and KTP35) represent secondary source zones where stored acidity and metals are mobilised and transported under surface water and shallow subsurface flow conditions.

    - While some lime-residual areas currently exhibit higher pH and buffering capacity, geochemical data indicate that lime and secondary sulfate minerals represent finite and co-depleting reservoirs, such that these materials may transition from locally neutralising to net acid-generating over time as lime is exhausted.
- Stored water within Kerale Dam, which acts as a receptor and secondary (indirect) source of impact following accumulation of acidic runoff and seepage from upgradient soils, including the former lime dosing facility footprint.
    - Since 2018, surface water within Kerale Dam has been both acidic (pH typically <5) and saline (EC up to 4,000 µS/cm).
- Residual materials associated with historical AMD management activities, particularly within and immediately downgradient of the former lime dosing facility footprint. This includes two types of zones;
    - One characterised by elevated pH and ANC due to residual lime; and
    - One of low pH, high EC, sulfate and stored acidity associated with secondary sulfate minerals where residual lime has been depleted.

Key COPCs associated with the above sources include acidity, salinity, sulfate, Al, Fe, Mn, Zn, Co and Ni, with the dominant COPCs differing between acidic stored-sulfate source areas and lime-residual higher-alkalinity zones.

During rainfall events, surface runoff may mobilise residual sludge and soil-hosted secondary sulfate minerals within the Kerale Area, transporting associated dissolved metals and soluble salts into Kerale Dam. Conversely, during prolonged dry periods and elevated temperatures characteristic of the Bowen Basin climate, soluble sulfate salts and secondary precipitates can concentrate within the soil profile through evaporation and recrystallisation. This process increases the persistence of stored acidity within source areas and enhances the potential for episodic mobilisation of acidity and associated COPCs when wet conditions return.

5.3 TRANSPORT MECHANISMS AND EXPOSURE PATHWAYS

Transport of acidity and dissolved metals across the Kerale Area is not uniform and is predominantly focused along the central drainage line extending from the former lime dosing facility toward the Kerale Dam embankment and downstream. Along this pathway, acidity is transported from soils in the former lime dosing pond footprint via surface water and shallow subsurface systems toward Kerale Dam and downgradient environments.

- Runoff within the Kerale Dam catchment:
    - The central drainage line represents the primary surface water and shallow subsurface pathway for transport of dissolved metals and acidity from upstream soils and sediments toward the Kerale Dam embankment.
- Shallow groundwater seepage from stored acidic water in Kerale Dam:
    - Hydrogeological assessment indicates that Kerale Dam is unlined and underlain by weathered and unconsolidated Quaternary sediments, including sandy and silty units capable of transmitting groundwater.
        - When there is sufficient stored water in the dam this water may seep into the underlying sediments and migrate laterally into the alluvial system downgradient of the dam embankment at low rates.

- Runoff from the area below the Kerale Dam embankment:
  - Surface water runoff following rainfall events may mobilise acidity and dissolved constituents from soils and shallow sediments immediately downgradient of the embankment into the ephemeral tributary, north of Pelican Creek.
- Downstream transport toward Pelican Creek:
  - Pelican Creek lies more than 2 km downgradient and represents the primary environmental receptor of seepage and runoff originating from the Kerale Area.
    - Seepage from Kerale Dam that has entered the alluvial system downgradient of the embankment would migrate through the sediments associated with the ephemeral tributary of Pelican Creek. However, groundwater migration in this area is predicted to be slow, in the order of a few metres per year and COPCs associated with the dam would be subject to near-surface evapoconcentration, mixing, and episodic recharge and dilution from surface water along the flow path.
    - This is consistent with groundwater quality data from the two monitoring bores downgradient of Kerale Dam, which show higher COPC concentrations in the bore closest to the dam (K01) compared to the bore further downgradient (K02). This provides supporting evidence for the conceptual downgradient transport pathway described above.

Worth noting is that the WSP water balance model indicates that Kerale Dam water levels remain below the spillway level under the assessed closure conditions, with no overtopping events predicted. The Kerale Dam embankment design includes a central clay core and downstream sand filter, and seepage is anticipated to occur primarily through shallow pathways, as described above, rather than via overtopping or rapid surface discharge.

The ephemeral surface water system downstream of Kerale Dam is not considered to receive groundwater discharge during dry periods. Instead, interaction between surface water and groundwater is limited to recharge of the underlying alluvial groundwater system by the ephemeral tributary during wet periods. This interpretation is consistent with the conceptual understanding that, downgradient of the dam embankment groundwater discharge to the ephemeral channel is limited.

5.4 POTENTIAL RECEPTORS

Potential environmental receptors relevant to this CSM include:

- Surface water in Pelican Creek, located approximately 2.7 km downgradient of Kerale Dam, and in the ephemeral tributary of Pelican Creek.
  - Pelican Creek represents the ultimate downstream surface water receptor for seepage or runoff originating from the dam area and transported via the ephemeral tributary, however, since both of these features are ephemeral, transport of runoff and potentially seepage to these receptors would occur primarily during wet season conditions.
- Mapped important wetlands and wetlands of high ecological significance occur regionally (Figure 2-15); however, the nearest mapped wetland is approximately 8.6 km southwest of Kerale Dam, and no such receptors are present within the Kerale Area or along the immediate downstream drainage network.

- No aquatic GDEs have been identified in the Kerale Area based on available mapping and field evidence.
    - The ephemeral tributary and Pelican Creek are described as predominantly losing systems in KCB (2026), meaning that surface water infiltrates into the underlying sediments rather than being sustained by groundwater discharge. As a result, flows are short-lived and rainfall-driven, with limited baseflow and no persistent groundwater input, so conditions required to support aquatic GDEs are not expected to occur.
- Potential terrestrial GDEs associated with drainage features, including the unnamed ephemeral tributary south of Kerale Dam and downstream along Pelican Creek, as identified by the Bureau of Meteorology GDE Atlas (Figure 2-14 in Section 2.3.4.6).
    - These mapped features are linear and drainage-aligned and represent screening-level potential only (not field verified), interpreted as vegetation that may access shallow groundwater intermittently.
    - Any interaction with groundwater is expected to be intermittent, spatially limited and seasonally controlled.

Note that no terrestrial or aquatic GDEs have been field-identified within or adjacent to Kerale Dam to this date. If interaction between these receptors and groundwater were to occur, it is expected to be intermittent and seasonally controlled, with limited potential for sustained exposure due to the ephemeral nature of the surface water system and attenuation of seepage from the dam in groundwater.

5.5 POTENTIALLY COMPLETE SOURCE-PATHWAY-RECEPTOR LINKAGES

Figure 5-1 presents the CSM for the Kerale Dam area, summarising the identified potential sources, pathways, exposure modes and receptors based on the factual findings of this investigation. The CSM reflects current understanding of surface water and groundwater interactions upstream and downstream of the embankment and highlights pathways considered potentially complete, incomplete or uncertain at this stage. Acidic soils within the Kerale Dam footprint, along drainage lines and at selected downstream locations are included as key source areas contributing acidity and dissolved constituents under leaching conditions.

Kerale Dam Stored Water and Catchment Soils – Shallow Groundwater Seepage – Downstream Alluvial System

Stored water within Kerale Dam, together with surrounding soils containing stored acidity in secondary sulfate minerals, represents a potential source of dissolved acidity and metals. Dissolution of these minerals under acidic and oxidising conditions provides the primary mechanism for generation of acidity and dissolved metals entering the identified pathways.

Hydrogeological conceptualisation indicates that Kerale Dam is unlined and underlain by shallow, weathered Quaternary sediments that are capable of transmitting groundwater. A hydraulic connection is therefore likely to exist between stored water in the dam and the shallow alluvial sediments associated with the ephemeral tributary of Pelican Creek immediately downgradient of the embankment.

Seepage is expected to occur at low rates through these shallow materials, with migration controlled by seasonal hydraulic gradients, permeability contrasts within the alluvium and local

topography. Potential aquatic and terrestrial ecosystems along the ephemeral tributary of Pelican Creek represent the primary downgradient receptors for this pathway. This linkage is considered potentially complete due to the presence of a plausible source, a seepage pathway that is potentially shallow enough to contribute groundwater to these GDEs, and an identified potential receptor.

Acidic Soil South of Kerale Dam Embankment – Surface Water Runoff – Unnamed Ephemeral Creek

Surface water runoff generated during rainfall events represents a mechanism for mobilisation of acidity and dissolved constituents from soils south and downgradient of the Kerale Dam embankment. Runoff from areas immediately below the dam wall may enter the ephemeral tributary of Pelican Creek during wet season conditions.

The tributary would also act as a transient receptor, with flow occurring only following episodic rainfall events. Interaction between surface runoff and accumulated acidity in soils and shallow sediments may result in short-term mobilisation of COPCs. This linkage is considered potentially complete due to the presence of a source and pathway during rainfall events; however, exposure is intermittent and temporally limited.

Shallow Alluvial System – Groundwater and Surface Water Transport – Pelican Creek

Pelican Creek is identified as the primary surface water receptor for seepage or runoff originating from the Kerale Area via the tributary of Pelican Creek and associated alluvial system. Groundwater seepage analysis indicates that migration rates through the alluvium are likely to be slow, in the order of a few metres per year, with episodic wet-period recharge and flow-driven mixing associated with surface water inputs.

While a conceptual hydraulic connection exists between the Kerale Area and Pelican Creek via groundwater in the shallow alluvial system associated with the tributary, the long transport distance (approximately 2.7 km), slow seepage rates, and ephemeral nature of the system mean that although this linkage is considered potentially complete, COPC concentrations from the Kerale Area would be highly attenuated. As such, sustained input of seepage impact groundwater to surface water in Pelican Creek is considered unlikely, with any linkage expected to be limited to episodic wet-period flow conditions rather than persistent interaction. In addition, surface water flows in Pelican Creek are several orders of magnitude greater than inflows from the Kerale Dam catchment and shallow alluvial system, such that any inputs from the Kerale Area would be diluted during active flow conditions.

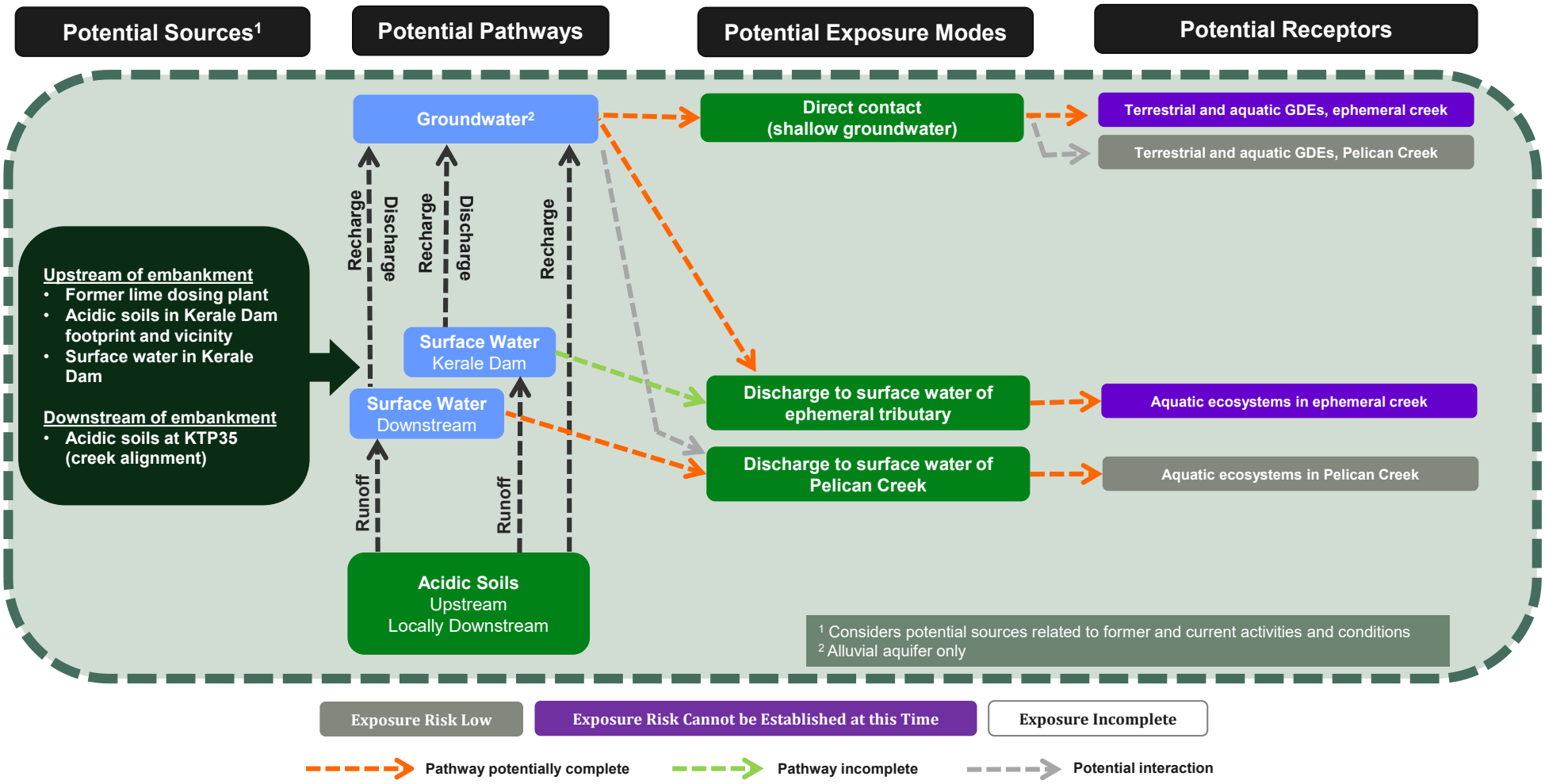
Kerale Dam Seepage and Runoff – Shallow Groundwater and Surface Water Interaction – Potential Groundwater-Dependent Ecosystems

National-scale GDE mapping identifies potential terrestrial GDEs associated with the tributary of Pelican Creek and Pelican Creek, however, these have not been confirmed by field mapping. Shallow groundwater seepage from Kerale Dam and episodic surface water flows, particularly during wet season conditions, may intermittently influence moisture availability within these systems.

Given the ephemeral nature of surface water flow and its role in recharging groundwater in the underlying alluvial system, interaction of groundwater with potential GDEs is considered intermittent. Therefore, although this linkage is considered potentially complete, it is subject to

significant uncertainty regarding the presence of GDEs and the extent, duration and frequency of exposure to seepage impacted groundwater.

FIGURE 5-1 CONCEPTUAL SITE MODEL DIAGRAM



6. CONCLUSIONS

The geochemical investigation and interpretation of the Kerale Area demonstrate that acidic conditions within Kerale Dam and its immediate catchment are consistent with legacy geochemical conditions associated with historical AMD management activities within the Kerale Dam catchment, as demonstrated by the observed stored acidity in the form of secondary sulfate minerals primarily in the lime dosing pond area.

Soil and ASLP leachate data confirm that residual sulfide is negligible across the Kerale Area and that the acidity budget is dominated by stored acidity held in secondary sulfate minerals. These minerals are distributed within soils and shallow sediments across the Kerale Dam footprint, including but not limited to the former lime dosing facility area. The former facility represents the most significant localised accumulation of these materials; however, acidic porewaters are widespread across the dam impoundment and downgradient areas, indicating persistent redistribution of stored acidity along the drainage line and surrounding soils.

Elsewhere within the Kerale Dam catchment, particularly to the west at sampling locations within the historical dam footprint but away from the main drainage line, stored soil acidity is observed. These areas were most likely inundated by neutralised AMD-lime dosing waters during historical operations (refer to Figure 2-1); however, the persistence of acidity reflects residual, soil-hosted acidity remaining since the cessation of inundation in the early 2000s, rather than ongoing influence from Kerale Dam water storage or former lime dosing activities.

Geochemical equilibrium modelling using PHREEQC demonstrates that porewater chemistry across the Kerale Area is controlled by a limited number of mineral buffering regimes. In most locations, equilibration is dominated by aluminium hydroxide and sulfate phases, resulting in persistent acidic and oxidising conditions with limited neutralisation capacity. Locally alkaline and reducing conditions occur where residual lime, carbonate or iron-rich materials remain present; however, these conditions are spatially restricted, heterogeneous and do not represent a catchment-scale buffering mechanism.

Groundwater geochemical modelling indicates that shallow groundwater chemistry downgradient of Kerale Dam reflects the same mineral-controlled acidity processes observed in Kerale catchment soils, particularly aluminium sulfate equilibria. This consistency supports the interpretation that shallow groundwater chemistry downgradient of the Kerale Dam embankment is influenced by interaction with soil-hosted secondary minerals within the dam catchment.

Multivariate statistical analysis further supports this interpretation. PCA demonstrates that Kerale Area soil leachate chemistry is geochemically distinct from groundwater quality in the alluvial sediments downgradient of Kerale Dam. The variability within the dataset is primarily controlled by sulfate loading, acidity and associated dissolved metals.

The results of the soil assessment and geochemical modelling were integrated with information on groundwater and surface water quality, seepage from Kerale Dam and the water balance to develop a CSM for the Kerale Area. Mobilisation of acidity and dissolved metals is concentrated along the central drainage pathway extending from the former lime dosing pond toward the dam embankment and downstream.

The CSM indicates that Kerale Dam acts as an accumulation area for acidic runoff and shallow seepage of groundwater, transporting COPCs from source areas associated with the former lime dosing pond and resultant soil acidity in the catchment to Kerale Dam.

Seasonally, conditions may develop that allow seepage of surface water from Kerale Dam to the underlying sediments and alluvial sediments downgradient of the dam wall. Additionally, runoff from the catchment down gradient of the dam transports acidity and other COPCs from catchment soils to the ephemeral tributary and towards Pelican Creek.

During wetter periods, surface water from the ephemeral tributary is likely to recharge the shallow groundwater in the underlying alluvial system. As such, shallow groundwater and surface water pathways are considered potentially complete under seasonal conditions. However, seepage rates from Kerale Dam are low, with slow and episodic transport of COPCs in groundwater, and substantial attenuation would occur in groundwater within the alluvial aquifer towards Pelican Creek. Similarly, surface water flow along the tributary to Pelican Creek would occur only in the wet season when flow rates are high and would be accompanied by substantial dilution.

Although Pelican Creek is identified as the ultimate downgradient receptor, sustained exposure to COPCs in either surface water or groundwater is considered unlikely based on current understanding.

7. STATEMENT OF LIMITATIONS

The limitations outlined below should be considered when interpreting the findings, conclusions and recommendations presented in this report.

- This report was prepared using currently available information provided by the client, supplemented by test pitting and field investigations conducted in the Kerale area during March 2026.
- The findings and conclusions are based on site conditions observed at the time of investigation and on laboratory analyses completed for the collected samples.
- The assessment is limited by the number, depth and spatial distribution of test pits undertaken and may not represent all subsurface conditions across the wider investigation area.
- Subsurface conditions may vary between sampling locations and with depth, and materials not encountered during the investigation may be present elsewhere within the site.
- Laboratory results are subject to inherent uncertainties associated with sampling, handling, analytical methods and detection limits.
- Comparisons with guideline values are provided for screening and interpretive purposes only and do not constitute a formal risk assessment unless explicitly stated.
- Changes in site conditions, regulatory frameworks or the availability of additional information after completion of this report may affect the conclusions and recommendations presented.

8. REFERENCES

Abdi, H., & Williams, L. J. (2010). Principal component analysis. Wiley interdisciplinary reviews: computational statistics, 2(4), 433-459.

Black, S., Allen, D., North, M., Price, B., Rothnie, N., & Sharma, R. (2018). Applicability of the chromium reducible sulfur test for acid metalliferous drainage prediction in hard rock mining. Applied geochemistry, 91, 45-53.

Boeva, N. M., Makarova, M. A., Shipilova, E. S., Slukin, A. D., Soboleva, S. V., Zhegallo, E. A., ... & Bortnikov, N. S. (2022). Gibbsite and boehmite in weathering crusts of different ages affected by lateritization: location and formation. In Doklady Earth Sciences (Vol. 504, No. 2, pp. 353-361). Moscow: Pleiades Publishing.

Carbonell, A. A., Pulido, R., DeLaune, R. D., & Patrick Jr, W. H. (1999). Soluble barium in barite and phosphogypsum amended Mississippi River alluvial sediment (Vol. 28, No. 1, pp. 316-321). American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.

Dear, S. E., Moore, N. G., Dobos, S. K., Watling, K. M., & Ahern, C. R. (2002). Soil management guidelines. Queensland acid sulfate soil technical manual.

DEHP. (2005). A Directory of Important Wetlands in Australia, 3rd Edition, Environment Australia 2001 by Wetland Inventory Team, Northern Region, DEHP. Updated by Resource Assessment Unit, Qld. DEHP 2005.

DETSI. (2022). Matters of state environmental significance - High ecological significance wetlands – Queensland. Retrieved on 08 May 2026 from: https://environment.des.qld.gov.au/management/planning-guidelines/method-mapping-mses

ERM. (2006). Geochemical Investigation of Kerale Area Factual Report. Prepared by ERM Pty Limited for Collinsville Open Cut.

Ficklin, W. H., Plumlee, G. S., Smith, K. S., & McHugh, J. B. (1992). Geochemical classification of mine drainages and natural drainages in mineralized areas. Proceedings of the 7th International Symposium on Water-Rock Interaction, 381-384.

Förstner, U., Ahlf, W., & Calmano, W. (1993). Sediment quality objectives and criteria development in Germany. Water Science and Technology, 28(8-9), 307-316.

Glencore. (2025). Collinsville Open Cut PRO Spoil Management Procedure. Version 1.0. Effective: 15/07/2025.

Hatipoğlu, M., Helvacı, C., Chamberlain, S. C., & Babalık, H. (2010). Mineralogical characteristics of unusual “Anatolian” diaspore (zultanite) crystals from the İlbirdağı diasporite deposit, Turkey. Journal of African Earth Sciences, 57(5), 525-541. https://doi.org/10.1016/j.jafrearsci.2010.01.002

Hazelton, P., & Murphy, B. (2007). Interpreting soil test results: What do all the numbers mean? (2nd ed.). CSIRO Publishing.

Kato, Y., Suzuki, K., Nakamura, K., Hickman, A. H., Nedachi, M., Kusakabe, M., ... & Ohmoto, H. (2009). Hematite formation by oxygenated groundwater more than 2.76 billion

years ago. Earth and Planetary Science Letters, 278(1-2), 40-49. https://doi.org/10.1016/j.epsl.2008.11.021

KCB. (2025). EA Amendment for NUMAs around Pit 11 and Pit 7 EA Groundwater Report Draft. Prepared by KCB Australia Pty Ltd. 03 December.

KCB. (2026). Kerale Dam Seepage Assessment – Draft. Prepared by KCB Australia Pty Ltd. 24 April.

Krężel, A., & Maret, W. (2016). The biological inorganic chemistry of zinc ions. Archives of biochemistry and biophysics, 611, 3-19.

Müller, G. (1969). Index of geoaccumulation in sediments of the Rhine River. GeoJournal, 2(3), 108-118.

Peryea, F. J., & Kittrick, J. A. (1988). Relative solubility of corundum, gibbsite, boehmite, and diaspore at standard state conditions. Clays and Clay Minerals, 36(5), 391-396.

Price, W. A. 2009. Prediction manual for drainage chemistry from sulphidic geologic materials (MEND Report 1.20.1). CANMET Mining and Mineral Sciences Laboratories, Mine Environment Neutral Drainage Program.

USGS. (2025). PHREEQC (version 3.8.6). U.S. Geological Survey. 07 January. https://www.usgs.gov/software/phreeqc-version-3

Yi, C. P., & Majid, S. R. (2018). The electrochemical performance of deposited manganese oxide-based film as electrode material for electrochemical capacitor application. Semiconductors-Growth and Characterization, 142-153.

Zhao, L., Liu, X., Wang, Q., Ma, X., Liu, L., Sun, X., & Deng, J. (2023). Genetic mechanism of super-large karst bauxite in the northern North China Craton: Constrained by diaspore in-situ compositional analysis and pyrite sulfur isotopic compositions. Chemical Geology, 622, 121388.

APPENDICES

Appendix ID	Title
Appendix E1	Surface Water Monitoring Data
Appendix E2	Groundwater Monitoring Data
Appendix E3	Geochemical Assessment Guidelines
Appendix E4	PHREEQC Raw Data Results
Appendix E5	Geochemical Modelling by PHREEQC
Appendix E6	Statistical Assessment by PCA

APPENDIX E1 SURFACE WATER MONITORING DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
2	CCP330521	06/12/2004 00:00:00	7.34	7.34		167	24	420	0.2						0.27
3	CCP330521	18/12/2004 00:00:00	7.65	7.65		201	17	600	0.4						7.42
4	CCP330521	21/12/2004 00:00:00	7.83	7.83		176	17	800	0.4						0.1
5	CCP330521	07/04/2006 00:00:00	7.8	7.8		210	14	118	0.2	13					0.08
6	CCP330521	06/02/2007 00:00:00	6.96	6.96		331	14	150	0.1	15					0.05
7	CCP330521	08/02/2007 00:00:00	6.68	6.68		399	18	1040	0.1	19					0
8	CCP330521	01/02/2013 00:00:00	8.1			633	29	354	0.3	76					20
9	CCP330521	02/02/2013 00:00:00	7.98			552	37	357	0.3	59					50
10	CCP330521	03/02/2013 00:00:00	8.19			833	42	462	0.4	105					0
11	CCP330521	04/02/2013 00:00:00	8.32			852	45	469	0.4	107					0
12	CCP330521	05/02/2013 00:00:00	8.31			912	47	518	0.4	121					0
13	CCP330521	06/02/2013 00:00:00	8.31			966	49	528	0.4	131					0
14	CCP330521	07/02/2013 00:00:00	7.68			960	49	580	0.5	144					50
15	CCP330521	08/02/2013 00:00:00				960	50	604		149					70
16	CCP330521	09/02/2013 00:00:00				980	48	576	0.5	153					80
17	CCP330521	10/02/2013 00:00:00				1000	48	576	0.4	156					0
18	CCP330521	11/02/2013 00:00:00	7.81			1090	91	598	0.5	171					0
19	CCP330521	12/02/2013 00:00:00	8.16			1050	62	676	0.4	172					0
20	CCP330521	13/02/2013 00:00:00	8.21			1060	50	582	0.4	157					20
21	CCP330521	14/02/2013 00:00:00	8.2			1090	53	661	0.4	155					0
22	CCP330521	15/02/2013 00:00:00	8.1			1100	54	648	0.4	156					0
23	CCP330521	16/02/2013 00:00:00	8.16			1140	92	700	0.3	162					10
24	CCP330521	17/02/2013 00:00:00	8.21			1110	60	644	0.4	157					0
25	CCP330521	18/02/2013 00:00:00	8.18			1130	97	681	0.3	162					20
26	CCP330521	19/02/2013 00:00:00	8.31			1070	70	643	0.4	141					0
27	CCP330521	20/02/2013 00:00:00	8.29			1100	67	646	0.4	155					0
28	CCP330521	21/02/2013 00:00:00	8.48	8.48		1030	48	748	0.4	150					0
29	CCP330521	22/02/2013 00:00:00	8.2	8.2		405	21	401	0.2	36					0.04
30	CCP330521	23/02/2013 00:00:00	8.37			615	23	572	0.3	60					40
31	CCP330521	24/02/2013 00:00:00	8.18			484	34	612	0.3	44					80
32	CCP330521	25/02/2013 00:00:00	8.21			675	35	463	0.3	78					30
33	CCP330521	26/02/2013 00:00:00	8.25			765	35	491	0.4	92					20
34	CCP330521	27/02/2013 00:00:00	8.25			764	36	485	0.4	88					60
35	CCP330521	28/02/2013 00:00:00	8.3			778	33	485	0.4	88					0
36	CCP330521	02/03/2013 00:00:00	8.45			878	34	444	0.4	104					0
37	CCP330521	03/03/2013 00:00:00	8.47			899	34	478	0.4	111					0
38	CCP330521	04/03/2013 00:00:00	8.44			922	33	469	0.4	114					0
39	CCP330521	05/03/2013 00:00:00	8.18			631	50	474	0.3	71					110
40	CCP330521	06/03/2013 00:00:00	8.12			447	16	274	0.3	42					100
41	CCP330521	07/03/2013 00:00:00	8.2			582	22	328	0.4	60					60
42	CCP330521	08/03/2013 00:00:00	8.25			682	24	381	0.4	74					30
43	CCP330521	09/03/2013 00:00:00	8.28			733	26	410	0.4	82					10
44	CCP330521	10/03/2013 00:00:00	8.32			772	26	420	0.4	86					0
45	CCP330521	11/03/2013 00:00:00	8.47			714	26	436	0.4	90					0
46	CCP330521	12/03/2013 00:00:00	8.46			735	27	430	0.4	96					0
47	CCP330521	13/03/2013 00:00:00	8.47			750	27	442	0.4	100					80
48	CCP330521	14/03/2013 00:00:00	8.43			833	30	507	0.4	101					40

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
2	CCP330521	0	0	0	15	0	0	0		0			0	0
3	CCP330521	0	0	0	90	0	0.04	0.09		0.07			0	0.06
4	CCP330521	0	0	0	17	0	0	0		0			0	0
5	CCP330521	0	0	0	16	0	0	0	0.16	0		0	0	0
6	CCP330521	0	0	0	36	0	0	0	0.12	0		0	0	0
7	CCP330521	0	0	0	45	0	0	0	0	0		0.25	0	0
8	CCP330521	1	0	0	36	0	0	0	0	0	20	4	0	0
9	CCP330521	2	60	0	34	0	1	0	80	0	16	3	1	1
10	CCP330521	2	0	0	46	0	1	0	0	0	24	68	1	1
11	CCP330521	2	0	0	52	0	0	0	0	0	29	22	1	0
12	CCP330521	2	0	0	52	0	0	0	0	0	29	71	1	0
13	CCP330521	2	0	0	54	0	0	0	0	0	30	11	1	0
14	CCP330521	1	0	0	51	0	5	0	0	0	32	38	1	0
15	CCP330521	1	0	0	3	0	4	0	0	0	2	30	1	0
16	CCP330521	2	140	0	50	0	3	0	0	0	31	25	1	0
17	CCP330521	2	60	0	50	0	0	0	0	0	31	48	2	0
18	CCP330521	1	0	0	60	0	0	0	0	0	36	19	0	0
19	CCP330521	2	0	0	58	0	0	0	0	0	36	38	1	0
20	CCP330521	2	60	0	62	0	1	0	0	0	35	54	2	0
21	CCP330521	3	50	0	62	0	2	0	0	0	35	40	1	0
22	CCP330521	3	0	0	62	0	2	0	0	0	35	56	2	2
23	CCP330521	2	50	0	62	0	1	0	0	0	35	65	1	1
24	CCP330521	3	0	0	62	0	3	0	0	0	35	45	1	1
25	CCP330521	2	0	0	62	0	2	0	0	0	34	61	1	2
26	CCP330521	2	0	0	59	0	2	0	0	0	32	22	1	0
27	CCP330521	2	0	0	58	0	2	0	0	0	31	49	1	0
28	CCP330521	0	0	0	58	0	0	0	0	0	32	0.05	0	0
29	CCP330521	0	0	0	25	0	0	0	0	0	12	0	0	0
30	CCP330521	1	0	0	35	0	3	0	0	0	20	3	1	0
31	CCP330521	6	0	0	29	0	3	0	70	0	14	2	0	1
32	CCP330521	3	50	0	40	0	3	0	50	0	21	35	1	0
33	CCP330521	2	50	0	46	0	2	0	0	0	25	45	1	0
34	CCP330521	1	0	0	46	0	5	0	0	0	25	44	0	2
35	CCP330521	2	0	0	47	0	2	0	0	0	26	49	1	0
36	CCP330521	2	0	0	52	0	0	0	0	0	29	22	1	0
37	CCP330521	2	50	0	52	0	0	0	0	0	29	1	1	0
38	CCP330521	2	0	0	53	0	0	0	0	0	30	21	1	0
39	CCP330521	0	0	0	34	0	0	0	550	0	16	12	0	2
40	CCP330521	2	0	0	24	0	2	0	150	0	15	4	1	1
41	CCP330521	2	0	0	30	0	2	0	90	0	18	24	1	0
42	CCP330521	1	0	0	36	0	3	0	0	0	21	17	1	0
43	CCP330521	2	0	0	39	0	2	0	0	0	23	26	1	0
44	CCP330521	2	0	0	40	0	2	0	0	0	24	27	1	0
45	CCP330521	2	80	0	44	0	0	0	0	0	25	0	1	6
46	CCP330521	2	0	0	46	0	2	0	0	0	27	29	2	0
47	CCP330521	0	0	0.1	47	0	9	0	0	0	27	25	0	3
48	CCP330521	1	0	0.1	51	0	3	0	0	0	30	34	0	1

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
2	CCP330521			0		0	0	0	0		0.02	0.24	0.26	
3	CCP330521			0		0	0	0.19	0		0.02	0.29	0.31	
4	CCP330521			0		0	0	0	0		0.01	0.38	0.39	
5	CCP330521		19	0	0	0	0.01	0	0		0.02	0.83	0.85	
6	CCP330521		13	0	0	0	0	0.02	0		0.01	0.04	0.05	
7	CCP330521		19	0	0	0	0	0.01	0		0.02	0.06	0.09	
8	CCP330521	3	64	0	0	0	0	0	0		0	0.06	0.06	
9	CCP330521	3	53	0	0	0	0	0	0		0	0.14	0.14	
10	CCP330521	3	84	0	0	0	0	0	0		0	0.05	0.05	
11	CCP330521	3	98	0	0	0	0	0	0		0	0.03	0.03	
12	CCP330521	3	98	0	0	0	0	0	0		0	0.01	0.01	
13	CCP330521	3	102	0	0	0	0	0	0		0	0.01	0.01	
14	CCP330521	3	110	0	0	0	0	74	0		0	0.01	0.01	
15	CCP330521	0	6	0	0	0	0	47	0		0	0.02	0.02	
16	CCP330521	3	118	0	0	0	0	30	0		0	0	0	
17	CCP330521	3	118	0	0	0	0	6	0		0	0	0	
18	CCP330521	4	131	0	0	0	0	0	0		0	0.02	0.02	
19	CCP330521	3	128	0	0	0	0	0	0		0	0.03	0.03	
20	CCP330521	3	116	0	0	0	0	0	0		0	0.01	0.01	
21	CCP330521	3	121	0	0	0	0	0	0		0	0	0	
22	CCP330521	4	119	0	0	0	0	11	0		0	0	0	
23	CCP330521	3	130	0	0	0	0	0	0		0	0	0	
24	CCP330521	3	122	0	0	0	0	0	0		0	0.04	0.04	
25	CCP330521	3	131	0	0	0	0	0	0		0	0.04	0.04	
26	CCP330521	3	115	0	0	0	0	0	0		0	0.03	0.03	
27	CCP330521	3	125	0	0	0	0	19	0		0	0.03	0.03	
28	CCP330521	2	112	0	0	0	0	0	0		0	0	0	
29	CCP330521	2	36	0	0	0	0	0.02	0		0	0.06	0.06	
30	CCP330521	2	54	0	0	0	0	0	0		0	0.03	0.03	
31	CCP330521	2	44	0	0	0	0	0	0		0	0.04	0.04	
32	CCP330521	2	70	0	0	0	0	9	0		0	0.06	0.06	
33	CCP330521	2	81	0	0	0	0	0	0		0	0.05	0.05	
34	CCP330521	2	78	0	0	0	0	39	0		0	0.03	0.03	
35	CCP330521	2	80	0	0	0	0	0	0		0	0.02	0.02	
36	CCP330521	2	94	0	0	0	0	0	0		0	0	0	
37	CCP330521	2	93	0	0	0	0	0	0		0	0	0	
38	CCP330521	2	96	0	0	0	0	0	0		0	0	0	
39	CCP330521	3	67	0	0	0	0	0	0		0	0.03	0.03	
40	CCP330521	3	44	0	0	0	0	0	0		0	0.02	0.02	
41	CCP330521	2	54	0	0	0	0	0	0		0	0.02	0.02	
42	CCP330521	2	65	0	0	0	0	0	0		0	0.02	0.02	
43	CCP330521	3	70	0	0	0	0	0	0		0	0.02	0.02	
44	CCP330521	2	74	0	0	0	0	0	0		0	0.02	0.02	
45	CCP330521	3	83	0	0	0	0	0	0		0	0	0	
46	CCP330521	3	89	0	0	0	0	0	0		0	0	0	
47	CCP330521	3	89	0	0	0	0	57	0		0	0	0	
48	CCP330521	3	96	0	0	0	0	15	0		0	0	0	

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	**Sample Site**	**Total Nitrogen as N (mg/L)**	**Total Phosphorus as P (mg/L)**	**Dissolved Oxygen (% saturation)**	**Acidity as CaCO3 (mg/L)**	**Total Hardness as CaCO3 (mg/L)**	**Dissolved Antimony (µg/L)**	**Dissolved Beryllium (µg/L)**	**Dissolved Lithium (µg/L)**	**Field Water Temperature (°C)**	**Total Kjeldahl Nitrogen as N (mg/L)**	**Dissolved Silicon (mg/L)**	**Comments/Observations**
2	CCP330521		1.74										
3	CCP330521		21.2										
4	CCP330521		0.89										
5	CCP330521	3.9	0.9		4						3.1		
6	CCP330521	14.8	3.53		16						14.8		
7	CCP330521	11.5	2.24		10						11.4		
8	CCP330521	0.5	0.04		3	172	0	0	2		0.4		
9	CCP330521	1	0.08		3	151	0	0	4		0.9		
10	CCP330521	0.4	0.09		2	214	0	0	2		0.4		
11	CCP330521	0.4	0.21		0	249	0	0	3		0.4		
12	CCP330521	0.4	0.03		0	249	0	0	3		0.4		
13	CCP330521	0.4	0.11		0	258	0	0	3		0.4		
14	CCP330521	0	0.2			259	0	0	2		0		
15	CCP330521	0	0.17			16	0	0	1		0		
16	CCP330521	0	0.32			252	0	0	1		0		
17	CCP330521	0	0.17			252	0	0	2		0		
18	CCP330521	0	0.18		2	298	0	0	0		0		
19	CCP330521	0	0.2		0	293	0	0	2		0		
20	CCP330521	0.3	0.14		3	299	0	0	3		0.3		
21	CCP330521	0.2	0.17		2	299	0	0	4		0.2		
22	CCP330521	0.3	0.12		5	299	0	0	3		0.3		
23	CCP330521	0.3	0.11		1	299	0	0	5		0.3		
24	CCP330521	0.2	0.13		0	299	0	0	4		0.2		
25	CCP330521	0.2	0.17		0	295	0	0	4		0.2		
26	CCP330521	0.2	0.22		0	279	0	0	4		0.2		
27	CCP330521	0.3	0.16		0	272	0	0	4		0.3		
28	CCP330521	1.6	0.33		0	277	<0.001				1.6		
29	CCP330521	2.2	0.52		0	112	<0.001				2.1		
30	CCP330521	1.8	0.13		0	170	0	0	1		1.8		
31	CCP330521	2.2	0.07		0	130	0	0	3		2.2		
32	CCP330521	0.5	0.25		3	186	0	0	3		0.4		
33	CCP330521	0.4	0.21		2	218	0	0	2		0.3		
34	CCP330521	0.5	0.29		2	218	0	0	2		0.5		
35	CCP330521	0.2	0.28		2	224	0	0	2		0.2		
36	CCP330521	0.1	0.16		0	249	0	0	2		0.1		
37	CCP330521	0.3	0.22		0	249	0	0	3		0.3		
38	CCP330521	0.2	0.2		0	256	0	0	2		0.2		
39	CCP330521	0.6	0.48		2	151	0	0	5		0.6		
40	CCP330521	0.2	0.24		0	122	0	0	2		0.2		
41	CCP330521	0.1	0.07		0	149	0	0	2		0.1		
42	CCP330521	0	0.09		0	176	0	0	2		0		
43	CCP330521	0.1	0.11		0	192	0	0	2		0.1		
44	CCP330521	0	0.93		0	199	0	0	2		0		
45	CCP330521	0.2	0.24		0	213	0	0	2		0.2		
46	CCP330521	0.2	0.2		0	226	0	0	2		0.2		
47	CCP330521	0.3	0.15		0	228	0	0	0		0.3		
48	CCP330521	0.2	0.15		0	251	0	0	2		0.2		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
49	CCP330521	15/03/2013 00:00:00	8.39			852	31	468	0.4	108					0
50	CCP330521	16/03/2013 00:00:00	8.4			872	32	471	0.4	107					20
51	CCP330521	17/03/2013 00:00:00	8.48			891	33	494	0.4	113					0
52	CCP330521	18/03/2013 00:00:00	8.41	8.41		908	38	519	0.5	117					0.02
53	CCP330521	19/03/2013 00:00:00	8.37	8.37		920	37	531	0.5	122					0
54	CCP330521	20/03/2013 00:00:00	8.34	8.34		916	37	495	0.4	116					0
55	CCP330521	21/03/2013 00:00:00	8.18			970	35	537	0.4	123					0
56	CCP330521	22/03/2013 00:00:00	8.2			982	34	573	0.4	124					10
57	CCP330521	23/03/2013 00:00:00	8.22			995	36	553	0.4	128					0
58	CCP330521	24/03/2013 00:00:00	8.16			993	35	537	0.4	127					50
59	CCP330521	25/03/2013 00:00:00	8.38			965	38	567	0.4	131					0
60	CCP330521	26/03/2013 00:00:00	8.27			975	39	541	0.4	131					0
61	CCP330521	27/03/2013 00:00:00	8.26			988	39	562	0.4	136					0
62	CCP330521	29/03/2013 00:00:00	8.33			1000	39	551	0.4	140					0
63	CCP330521	30/03/2013 00:00:00	8.34			1010	40	572	0.4	144					0
64	CCP330521	31/03/2013 00:00:00	8.3			1020	41	568	0.4	146					0
65	CCP330521	01/04/2013 00:00:00	8.36			1030	43	570	0.4	149					0
66	CCP330521	04/04/2013 00:00:00	8.39			1060	46	606	0.4	171					0
67	CCP330521	07/04/2013 00:00:00	8.31			1080	45	625	0.4	167					0
68	CCP330521	09/04/2013 00:00:00	8.29			1090	46	618	0.4	180					0
69	CCP330521	10/04/2013 00:00:00	8.31	8.31		1100	45	608	0.4	172					0.01
70	CCP330521	11/04/2013 00:00:00	8.31	8.31		1120	49	613	0.4	166					0
71	CCP330521	12/04/2013 00:00:00	8.28	8.28		1080	44	592	0.4	172					0.01
72	CCP330521	13/04/2013 00:00:00	8.39	8.39		1050	115	581	0.4	153					0.01
73	CCP330521	14/04/2013 00:00:00	8.4	8.4		923	37	523	0.4	122					0.06
74	CCP330521	16/04/2013 00:00:00	8.32			970	39	499	0.4	139					20
75	CCP330521	23/04/2013 00:00:00	8.32			1090	44	600	0.4	169					0
76	CCP330521	28/04/2013 00:00:00	8.32			1140	49	603	0.4	183					0
77	CCP330521	06/05/2013 00:00:00	8.37			1140	50	638	0.4	185					0
78	CCP330521	09/05/2013 00:00:00	8.43			1180	49	665	0.4	194					0
79	CCP330521	17/05/2013 00:00:00	8.51			1200	54	683		198					<0.01
80	CCP330521	23/05/2013 00:00:00	8.28			1240	50	650	0.3	203					0
81	CCP330521	21/06/2013 00:00:00	8.22			1290	65	808	0.6	234					0
82	CCP330521	26/06/2013 00:00:00	8.28			1300	68	782	0.6	239					0
83	CCP330521	03/07/2013 00:00:00	8.06			1360	62	743	0.4	261					10
84	CCP330521	14/07/2013 00:00:00	7.95			1400	68	837	0.4	278					0
85	CCP330521	21/07/2013 00:00:00	8.14			1380	79	767	0.3	276					0
86	CCP330521	04/08/2013 00:00:00	8.22			1400	82	759	0.3	273					260
87	CCP330521	04/08/2013 00:00:00	8.22			1400	82	759	0.3	273					260
88	CCP330521	20/08/2013 00:00:00	8.15			1550	58	921	0.4	205					0
89	CCP330521	06/05/2014 00:00:00	8.5			1190	72		0.3						0
90	CCP330521	12/12/2014 00:00:00	7.83			656	37		0.6						0
91	CCP330521	13/12/2014 00:00:00	7.83			476	26		0.4						10
92	CCP330521	30/12/2014 00:00:00	7.74	7.74		258	5		0.3						<25
93	CCP330521	31/12/2014 00:00:00	7.71	7.71		440	33		0.3						20
94	CCP330521	21/01/2015 00:00:00	7.79			359	48		0.3						20
95	CCP330521	22/01/2015 00:00:00	7.56			244	39		0.2						60

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
49	CCP330521	0	0	0	49	0	0	0	0	0	29	54	0	0
50	CCP330521	2	0	0	50	0	2	0	0	0	30	40	1	0
51	CCP330521	2	0	0	52	0	2	0	0	0	31	39	1	0
52	CCP330521	0	0	0	53	0	0	0	0	0	32	0.05	0	0
53	CCP330521	0	0	0	52	0	0	0	0	0	32	0.05	0	0
54	CCP330521	0	0	0	55	0	0.01	0	0.09	0	33	0.04	0	0
55	CCP330521	2	50	0	53	0	4	0	0	0	31	14	1	0
56	CCP330521	2	50	0	52	0	2	0	0	0	31	28	1	0
57	CCP330521	1	90	0	56	0	3	0	0	0	32	18	6	0
58	CCP330521	2	0	0	57	0	7	0	0	0	33	28	1	2
59	CCP330521	2	0	0	56	0	2	0	0	0	32	41	1	0
60	CCP330521	2	50	0	58	0	2	0	0	0	33	41	1	0
61	CCP330521	2	0	0	58	0	2	0	0	0	33	62	1	0
62	CCP330521	2	60	0	59	0	0	0	0	0	34	56	1	0
63	CCP330521	2	80	0	58	0	0	0	0	0	34	52	1	0
64	CCP330521	2	70	0	59	0	0	0	0	0	34	13	2	0
65	CCP330521	2	60	0	59	0	3	0	0	0	34	74	1	0
66	CCP330521	2	50	0	60	0	34	0	0	0	37	40	1	2
67	CCP330521	2	90	0	63	0	0	0	0	0	38	54	1	3
68	CCP330521	2	60	0	62	0	3	0	0	0	38	44	1	2
69	CCP330521	0	0	0	63	0	0	0	0	0	39	0.01	0	0
70	CCP330521	0	0	0	61	0	0	0	0	0	38	0.06	0	0
71	CCP330521	0	0	0	60	0	0	0	0	0	37	0	0	0
72	CCP330521	0	0.06	0	58	0	0	0	0	0	34	0.02	0	0
73	CCP330521	0	0.05	0	54	0	0	0	0.06	0	30	0.05	0	0
74	CCP330521	2	0	0	56	0	3	0	0	0	33	61	1	1
75	CCP330521	2	0	0	60	0	2	0	0	0	36	53	1	0
76	CCP330521	2	0	0	63	0	1	0	0	0	38	66	1	0
77	CCP330521	2	0	0	66	0	2	0	0	0	41	53	0	0
78	CCP330521	2	0	0	68	0	2	0	0	0	41	52	0	0
79	CCP330521	0.002	0.06	<0.0001	69	<0.001	0.002	<0.001	<0.05	<0.001	41	0.092	<0.001	<0.001
80	CCP330521	2	0	0	64	0	0	0	0	0	40	62	1	0
81	CCP330521	1	0	0	69	0	0	0	0	0	45	160	1	0
82	CCP330521	1	0	0	70	0	5	0	0	0	46	184	1	0
83	CCP330521	1	0	0	73	0	1	0	0	0	46	377	1	0
84	CCP330521	1	0	0	73	0	1	0	0	0	45	503	1	0
85	CCP330521	1	0	0	68	0	2	0	0	0	45	302	1	0
86	CCP330521	0	0	0	76	0	2	4	1620	0	46	475	0	8
87	CCP330521	0	0	0	76	0	2	4	1620	0	46	475	0	8
88	CCP330521	2	0	0	70	0	1	0	0	0	38	33	0	0
89	CCP330521	0	0	0		0	0	0	0	0		10	0	0
90	CCP330521	1	70	0		4	8	0	0	0		2	4	32
91	CCP330521	1	60	<0.1000		3	6	<1.0000	50	<1.0000		9	4	31
92	CCP330521	<2.5	<1250	<0.25		<2.5	<25	<25	<1250	<2.5		150	<2.5	51
93	CCP330521	2	<50	<0.1		<1	2	<1	80	<1		28	<1	2
94	CCP330521	<1.0000	<50.0000	<0.1000		<1.0000	<1.0000	<1.0000	70	<1.0000		<1.0000	<1.0000	2
95	CCP330521	0	0	0		0	0	0	90	0		0	0	2

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
49	CCP330521	3	93	0	0	0	0	0	0		0	0	0	
50	CCP330521	3	95	0	0	0	0	5	0		0	0	0	
51	CCP330521	3	98	0	0	0	0	0	0		0	0	0	
52	CCP330521	3	102	0	0	0	0	0.01	0		0	0	0	
53	CCP330521	3	99	0	0	0	0	0	0		0	0	0	
54	CCP330521	3	106	0	0	0	0	0	0		0	0	0	
55	CCP330521	2	100	0	0	0	0	0	0		0	0	0	
56	CCP330521	2	96	0	0	0	0	0	0		0	0.01	0.01	
57	CCP330521	2	105	0	0	1	0	0	0		0	0.01	0.01	
58	CCP330521	2	106	0	0	0	0	39	0		0	0.01	0.01	
59	CCP330521	3	100	0	0	0	0	0	0		0	0	0	
60	CCP330521	3	104	0	0	0	0	0	0		0	0	0	
61	CCP330521	3	104	0	0	0	0	0	0		0	0.01	0.01	
62	CCP330521	3	107	0	0	0	0	0	0		0	0	0	
63	CCP330521	3	107	0	0	0	0	0	0		0	0	0	
64	CCP330521	3	110	0	0	0	0	0	0		0	0	0	
65	CCP330521	3	110	0	0	0	0	0	0		0	0	0	
66	CCP330521	3	119	0	0	0	0	0	0		0	0	0	
67	CCP330521	3	124	0	0	0	0	0	0		0	0	0	
68	CCP330521	3	123	0	0	0	0	0	0		0	0.02	0.02	
69	CCP330521	3	122	0	0	0	0	0	0		0	0	0	
70	CCP330521	3	124	0	0	0	0	0.01	0		0	0	0	
71	CCP330521	3	117	0	0	0	0	0.01	0		0	0.02	0.02	
72	CCP330521	3	122	0	0	0	0	0	0		0	0.02	0.02	
73	CCP330521	3	106	0	0	0	0	0.01	0		0	0.04	0.04	
74	CCP330521	2	107	0	0	0	0	54	0		0	0	0	
75	CCP330521	3	117	0	0	0	0	9	0		0	0	0	
76	CCP330521	3	120	0	0	0	0	13	0		0	0	0	
77	CCP330521	3	131	0	0	0	0	0	0		0	0	0	
78	CCP330521	3	131	0	0	0	0	0	0		0	0.01	0.01	
79	CCP330521	3	126	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	0.01	0.01	
80	CCP330521	3	132	0	0	0	0	0	0		0	0	0	
81	CCP330521	2	147	0	0	0	0	0	0		0	0	0	
82	CCP330521	3	149	0	0	0	0	10	0		0	0	0	
83	CCP330521	2	154	0	0	0	0	18	0		0	0	0	
84	CCP330521	3	155	0	0	0	0	29	0		0	0	0	
85	CCP330521	3	151	0	0	0	0	0	0		0	0	0	
86	CCP330521	3	160	0	0	0	0	36	0		0	0	0	
87	CCP330521	3	160	0	0	0	0	36	0		0	0	0	
88	CCP330521	2	135	0	0	1	0	0	0		0	0.01	0.01	
89	CCP330521			0	0	0	0	0	0		0	0	0	
90	CCP330521			0	0	0	0	116	0	0.02	0	0.2	0.2	4.1
91	CCP330521			<10.0000	<1.0000	<1.0000	<10.0000	226	<0.1000	<0.01	<0.01	<0.01	<0.01	7.3
92	CCP330521			<0.25	<0.025	<2.5	<25	618	<0.25	<0.01	<0.01	<0.01	<0.01	10.10
93	CCP330521			<0.01	<0.001	<1	<10	6	<0.1	0.05	<0.01	0.06	0.06	9
94	CCP330521			<10.0000	<1.0000	<1.0000	<10.0000	<5.0000	<0.1000	0.02	<0.010000000	0.09	0.09	4.6
95	CCP330521			0	0	0	0	0	0	0.01	0	0.06	0.06	4.4

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
49	CCP330521	0.2	0.18		0	242	0	0	0		0.2		
50	CCP330521	0.2	0.14		0	248	0	0	2		0.2		
51	CCP330521	0.2	0.18		0	258	0	0	2		0.2		
52	CCP330521	0.2	0.11		2	264	<0.001				0.2		
53	CCP330521	0.2	0.24		2	262	<0.001				0.2		
54	CCP330521	0.2	0.46		2	273	<0.001				0.2		
55	CCP330521	0.2	0.16		1	260	0	0	2		0.2		
56	CCP330521	0.2	0.16		2	258	0	0	2		0.2		
57	CCP330521	0.2	0.16		2	272	0	0	2		0.2		
58	CCP330521	0.3	0.14		4	278	0	0	2		0.3		
59	CCP330521	0.1	0.13		4	272	0	0	2		0.1		
60	CCP330521	0	0.17		5	281	0	0	2		0		
61	CCP330521	0	0.18		5	281	0	0	2		0		
62	CCP330521	0	0.12		3	287	0	0	2		0		
63	CCP330521	0	0.11		3	285	0	0	3		0		
64	CCP330521	0.1	0.11		3	287	0	0	3		0.1		
65	CCP330521	0.1	0.09		3	287	0	0	2		0.1		
66	CCP330521	0.2	0.12		0	302	0	0	2		0.2		
67	CCP330521	0.2	0.11		0	314	0	0	2		0.2		
68	CCP330521	0.2	0.11		2	311	0	0	2		0.2		
69	CCP330521	0.4	0.18		79	318	<0.001				0.4		
70	CCP330521	0.2	0.13		3	309	<0.001				0.2		
71	CCP330521	0.3	0.24		8	302	<0.001				0.3		
72	CCP330521	0.3	0.16		0	285	<0.001				0.3		
73	CCP330521	0.2	0.25		8	258	<0.001				0.2		
74	CCP330521	0.2	0.11		2	276	0	0	2		0.2		
75	CCP330521	0.3	0.51		12	298	0	0	3		0.3		
76	CCP330521	0.4	0.03		7	314	0	0	3		0.4		
77	CCP330521	0.2	0.08		0	334	0	0	2		0.2		
78	CCP330521	0.2	0.02		1	339	0	0	2		0.2		
79	CCP330521	0.2	<0.01		<1		<0.001				0.2		
80	CCP330521	0.5	0.14		5	324	0	0	2		0.5		
81	CCP330521	0.1	0.05		6	358	0	0	3		0.1		
82	CCP330521	0.2	0.05		5	364	0	0	2		0.2		
83	CCP330521	0	0.02		0	372	0	0	2		0		
84	CCP330521	0	0.02		0	368	0	0	2		0		
85	CCP330521	0.7	0.06		7	355	0	0	2		0.7		
86	CCP330521	0.6	0.08		2	379	0	0	4		0.6		
87	CCP330521	0.6	0.08		2	379	0	0	4		0.6		
88	CCP330521	0.2	0.13		1	331	0	0	3		0.2		
89	CCP330521		0.03			284					0.2		
90	CCP330521	0.8	0.21			135					0.6		
91	CCP330521	0.5	0.25			98					0.5		
92	CCP330521	1.5	0.4	10.1		91					1.5		
93	CCP330521	6.9	1.14	9		113					6.8		
94	CCP330521	1.6	0.26			94					1.5		
95	CCP330521	1.1	0.19			67					1		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
96	CCP330521	22/01/2015 14:00:00	7.72			163	9		0.1						60
97	CCP330521	23/01/2015 00:00:00	8.38			790	60		0.4						0.02
98	CCP330521	24/01/2015 00:00:00	8.11			505	39		0.2						0.02
99	CCP330521	26/01/2015 00:00:00	7.88			260	9		0.2						70
100	CCP330521	27/01/2015 00:00:00	8.11			404	27		0.2						50
101	CCP330521	29/01/2015 00:00:00	8.39			1030	79		0.3						10
102	CCP330521	01/02/2015 00:00:00	8.29			530	37		0.2						0.01
103	CCP330521	03/02/2015 00:00:00	8.49			1030	72		0.3						0
104	CCP330521	04/02/2015 00:00:00	8.01	8.01		1410	156		0.2						0
105	CCP330521	05/02/2015 00:00:00	7.83			748	62		0.4						0
106	CCP330521	07/02/2015 00:00:00	8.46			893	70		0.5						0
107	CCP330521	08/02/2015 00:00:00	8.45			976	78		0.4						0
108	CCP330521	09/02/2015 00:00:00	8.41			1060	83		0.4						10
109	CCP330521	10/02/2015 00:00:00	8.4			1140	97		0.4						0
110	CCP330521	11/02/2015 00:00:00	8.22			1060	88		0.3						0
111	CCP330521	12/02/2015 00:00:00	8.23			1140	100		0.4						0
112	CCP330521	13/02/2015 00:00:00	8.14			1190	109		0.4						0
113	CCP330521	14/02/2015 00:00:00	8.1			1230	116		0.4						0
114	CCP330521	15/02/2015 00:00:00	8.1			1190	108		0.4						0
115	CCP330521	16/02/2015 00:00:00	8.42			1320	127		0.3						0
116	CCP330521	17/02/2015 00:00:00	8.34			1470	147		0.3						0
117	CCP330521	18/02/2015 00:00:00	8.34			1590	168		0.3						0
118	CCP330521	19/02/2015 00:00:00	8.33			1630	175		0.3						0
119	CCP330521	20/02/2015 00:00:00	8.01	8.01		1690	185		0.3						0
120	CCP330521	22/02/2015 00:00:00	7.98	7.98		1790	201		0.3						0
121	CCP330521	23/02/2015 00:00:00	8.35	8.35		1800	205		0.3						0
122	CCP330521	24/02/2015 00:00:00	7.97	7.97		1820	185		0.3						0
123	CCP330521	25/02/2015 00:00:00	8.28	8.28		1180	88		0.3						0
124	CCP330521	26/02/2015 00:00:00	8.1	8.1		1480	144		0.3						0
125	CCP330521	27/02/2015 00:00:00	8.08	8.08		1660	177		0.3						0
126	CCP330521	28/02/2015 00:00:00	8.05	8.05		1640	175		0.3						0
127	CCP330521	01/03/2015 00:00:00	7.82	7.82		365	41		0.2						70
128	CCP330521	02/03/2015 00:00:00	7.96	7.96		703	78		0.3						10
129	CCP330521	03/03/2015 00:00:00	7.87			1140									
130	CCP330521	05/03/2015 00:00:00	7.97	7.97		1630	199		0.2						0
131	CCP330521	06/03/2015 00:00:00	8.03	8.03		1610	175		0.2						0
132	CCP330521	07/03/2015 00:00:00	8.31	8.31		1810	187		0.4						
133	CCP330521	08/03/2015 00:00:00	7.99	7.99		583	47		0.4						
134	CCP330521	09/03/2015 00:00:00	8.03	8.03		431	40		0.2						80
135	CCP330521	10/03/2015 00:00:00	7.93	7.93		615	58		0.4						40
136	CCP330521	12/03/2015 00:00:00	8.23	8.23		1650	173		0.4						
137	CCP330521	03/03/2016 17:50:00	8.35			1030	90	543	0.3	155	0	6	200	207	10
138	CCP330521	03/03/2016 19:50:00	7.9			546	78	353	0.3	66	0	0	84	84	0
139	CCP330521	03/03/2016 21:50:00	8.01			437	41	326	0.4	48	0	0	95	95	10
140	CCP330521	04/03/2016 13:50:00	8.02			462	43	255	0.4	53	0	0	99	99	0
141	CCP330521	19/06/2016 05:40:00	7.54			200	31		0.2						630
142	CCP330521	19/06/2016 07:40:00	7.67			150	18		0.2						620

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
96	CCP330521	2	<50.0000	<0.1000		<1.0000	2	<1.0000	70	<1.0000		<1.0000	<1.0000	2
97	CCP330521	0	0	0		0	0	0	0	0		0	0	0
98	CCP330521	0	0	0		0	0	0	0	0		0	0	0
99	CCP330521	1	0	0		0	2	0	100	0		2	0	0
100	CCP330521	2	0	0		1	3	0	60	0		2	0	0
101	CCP330521	2	0	0		4	2	0	0	0		85	0	0
102	CCP330521	0	0	0		0	0	0	0	0		0	0	0
103	CCP330521	2	0	0		0	2	0	0	0		2	0	0
104	CCP330521	0	60	0		0	1	0	0	0		423	0	2
105	CCP330521	3	50	0		0	1	0	0	0		23	2	0
106	CCP330521	3	60	0		0	1	0	0	0		64	2	0
107	CCP330521	2	0	0		0	2	0	0	0		45	2	0
108	CCP330521	2	0	0		2	2	0	0	0		60	1	0
109	CCP330521	3	50	0		6	0	0	0	0		30	2	0
110	CCP330521	3	0	0		2	0	0	0	0		66	1	0
111	CCP330521	1	60	0		0	1	0	0	0		0	3	2
112	CCP330521	1	50	0		0	0	0	0	0		0	1	0
113	CCP330521	1	50	0		0	0	0	0	0		26	1	0
114	CCP330521	1	0	0		0	0	0	0	0		26	1	0
115	CCP330521	2	60	0		0	0	0	0	0		10	1	0
116	CCP330521	1	60	0		0	0	0	0	0		98	1	0
117	CCP330521	1	60	0		0	0	0	0	0		143	1	0
118	CCP330521	0	0	0		0	0	0	0	0		0	0	0
119	CCP330521	1	60	0		0	0	0	0	0		39	1	0
120	CCP330521	0	70	0		0	0	0	0	0		0	1	0
121	CCP330521	1	70	0		0	0	0	0	0		0	0	0
122	CCP330521	1	0	0		0	0	0	0	0		0	1	0
123	CCP330521	2	60	0		0	0	0	0	0		0	2	0
124	CCP330521	1	0	0		0	0	0	0	0		0	1	0
125	CCP330521	1	50	0		0	0	0	0	0		0	1	1
126	CCP330521	1	60	0		0	0	0	0	0		0	1	0
127	CCP330521	0	0	0		0	1	0	170	0		0	0	1
128	CCP330521	0	50	0		0	0	0	60	0		0	1	1
129	CCP330521													
130	CCP330521	0	0	0		0	0	0	0	0		67	1	0
131	CCP330521	0	0	0		0	0	0	0	0		203	0	0
132	CCP330521													
133	CCP330521													
134	CCP330521	0	0	0		0	0	0	130	0		0	0	0
135	CCP330521	0	0	0		0	0	0	100	0		17	0	0
136	CCP330521													
137	CCP330521	2	0	0	54	0	5	0	0	0	30	0	1	2
138	CCP330521	0	0	0	32	0	3	0	0	0	15	2	0	2
139	CCP330521	0	0	0	28	0	3	0	50	0	12	0	0	2
140	CCP330521	0	0	0	27	0	4	0	220	0	13	0	1	2
141	CCP330521	0	0	0		0	2	0	490	0		1	0	2
142	CCP330521	0	0	0		0	1	0	380	0		0	0	0

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
96	CCP330521			<10.0000	<1.0000	<1.0000	<10.0000	<5.0000	<0.1000	0.06	<0.010000000	0.16	0.16	3.9
97	CCP330521			0	0	0	0	0.04	0	0.03	0.01	0.38	0.39	7
98	CCP330521			0	0	0	0	0	0	0.08	0.02	0.24	0.26	5.6
99	CCP330521			0	0	0	0	0	0	0.02	0	0.16	0.16	3.2
100	CCP330521			0	0	0	0	0	0	0.06	0	0.16	0.16	8.9
101	CCP330521			0	0	0	0	15	0	0.03	0	0.18	0.18	7.4
102	CCP330521			0	0	0	0	0	0	0.01	0	0	0	8.2
103	CCP330521			0	0	0	0	13	0	0.05	0	0.02	0.02	7
104	CCP330521			0	0	0	0	14	0	0.06	0	0	0	8.7
105	CCP330521			0	0	0	0	0	0	0.05	0	0	0	6.7
106	CCP330521			0	0	0	0	5	0	0.03	0	0.01	0.01	6.4
107	CCP330521			0	0	0	0	12	0	0.03	0	0.01	0.01	6.2
108	CCP330521			0	0	0	0	26	0	0.03	0	0.02	0.02	9.6
109	CCP330521			0	0	0	0	0	0	0.02	0	0	0	9.8
110	CCP330521			0	0	0	0	0	0	0.03	0	0.02	0.02	8.8
111	CCP330521			0	0	0	0	0	0	0.08	0	0	0	9.5
112	CCP330521			0	0	0	0	0	0	0.04	0	0	0	7.4
113	CCP330521			0	0	0	0	0	0	0.04	0	0.03	0.03	7.7
114	CCP330521			0	0	0	0	0	0	0.04	0	0	0	9.2
115	CCP330521			0	0	0	0	0	0	0.03	0	0	0	9.1
116	CCP330521			0	0	0	0	0	0	0.03	0	0	0	8.4
117	CCP330521			0	0	0	0	0	0	0.02	0	0	0	9
118	CCP330521			0	0	0	0	0	0	0.03	0	0	0	7.7
119	CCP330521			0	0	0	0	0	0	0.04	0	0	0	9.4
120	CCP330521			0	0	0	0	0	0	0.07	0	0	0	9.7
121	CCP330521			0	0	0	0	0	0	0.02	0	0	0	8.2
122	CCP330521			0	0	0	0	0	0	0.01	0	0	0	8.6
123	CCP330521			0	0	0	0	0	0	0.04	0	0	0	7.5
124	CCP330521			0	0	0	0	0	0	0.02	0	0	0	8.3
125	CCP330521			0	0	0	0	0	0	0.04	0	0	0	7.1
126	CCP330521			0	0	0	0	0	0	0.03	0	0	0	7.6
127	CCP330521			0	0	0	0	0	0	0.08	0	70	70	7.7
128	CCP330521			0	0	0	0	0	0	0.05	0	20	20	8
129	CCP330521													
130	CCP330521			0	0	0	0	0	0	0.03	0	0	0	8.9
131	CCP330521			0	0	0	0	0	0	0.03	0	0	0	7
132	CCP330521									0.04	0	0	0	7.4
133	CCP330521									0.08	10	20	30	6.4
134	CCP330521			0	0	0	0	0	0	0.04	0	120	120	7.4
135	CCP330521			0	0	0	0	0	0	0.04	0	60	60	6
136	CCP330521									0.03	0	0	0	8.4
137	CCP330521	5	100	0	0	1	0	6	0		0	0.02	0.02	7.6
138	CCP330521	4	56	0	0	0	0	0	0		0.12	0.1	0.22	7.7
139	CCP330521	4	47	0	0	0	0	0	0		0.01	0.16	0.17	5.7
140	CCP330521	4	48	0	0	0	0	0	0		0.01	0.14	0.15	7.7
141	CCP330521			0	0	0	0	0	0	0.11	0.02	0.15	0.17	5.6
142	CCP330521			0	0	0	0	0	0	0.04	0	0.25	0.25	5.2

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
96	CCP330521	6.8	1.95			49					6.6		
97	CCP330521	1	0.24	4.3		164					600		
98	CCP330521	1.3	0.38	5.3		132					1000		
99	CCP330521	2.2	0.76			74					2		
100	CCP330521	1.3	0.39	9.5		119					1100		
101	CCP330521	0.6	0.21	7.4		223					400		
102	CCP330521	0.6	0.21	7.8		151					600		
103	CCP330521	0.4	0.1	7		202					400		
104	CCP330521	0.2	0.03	8.7		331					200		
105	CCP330521	0.6	0.13	7.9		195					600		
106	CCP330521	0.4	0.09	6.4		218					400		
107	CCP330521	0.4	0.09	6.2		220					400		
108	CCP330521	0.5	0.07	9.6		227					500		
109	CCP330521	400	70	9.8		309					400		
110	CCP330521	0.4	0.07	8.8		279					400		
111	CCP330521	0.6	0.04	9.5		273					600		
112	CCP330521	0.3	0.04	7.4		301					300		
113	CCP330521	0.2	0.4	7.7		328					200		
114	CCP330521	0.2	0.3	9.2		303					200		
115	CCP330521	0.1	0	9.1		377					100		
116	CCP330521	0	0	8.4		388					0		
117	CCP330521	0.1	0	9		404					100		
118	CCP330521	0.1	0	7.7		416					100		
119	CCP330521	400	20	9.4		458					400		
120	CCP330521	200	0	9.7		476					200		
121	CCP330521	200	10	8.2		479					200		
122	CCP330521	200	10	8.6		474					200		
123	CCP330521	300	20	7.5		321					300		
124	CCP330521	200	20	8.3		392					200		
125	CCP330521	400	320	7.1		437					400		
126	CCP330521	200	10	7.6		443					200		
127	CCP330521	1000	180	7.7		93					900		
128	CCP330521	500	60	8		175					500		
129	CCP330521												
130	CCP330521	200	0	8.9		434					200		
131	CCP330521	200	10	7		432					200		
132	CCP330521	300	20	7.4		360					300		
133	CCP330521	600	50	6.4		135					600		
134	CCP330521	600	10	7.4		110					500		
135	CCP330521	400	30	6		158					300		
136	CCP330521	400	20	8.4		398					400		
137	CCP330521	1.2	0.15		0	258	0		3		1.2		
138	CCP330521	2.3	0.37		7	142	0		4		2.1		
139	CCP330521	2.4	0.41		7	119	0		3		2.2		
140	CCP330521	1.4	0.15		5	121	0		3		1.2		
141	CCP330521	2.1	350			44					1900		
142	CCP330521	1.8	340			42					1.6		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
143	CCP330521	19/06/2016 09:40:00	7.62			153	25		0.2						340
144	CCP330521	20/06/2016 03:40:00	3.42			492	145		0.1						70
145	CCP330521	21/06/2016 03:40:00	7.69			378	36		0.2						60
146	CCP330521	22/06/2016 00:30:00	7.98			610	56		0.2						10
147	CCP330521	23/06/2016 00:30:00	8.16			806	71		0.3						0
148	CCP330521	23/01/2017 15:00:00	7.68			176	11	702	0.4	9	0	0	67	67	180
149	CCP330521	23/01/2017 19:13:00	7.46			216	16	767	0.3	12	0	0	75	75	120
150	CCP330521	23/01/2017 23:13:00	7.72			182	12	618	0.4	9	0	0	65	65	160
151	CCP330521	06/03/2017 12:15:00	7.28			238	51	481	0.1	13	0	0	38	38	40
152	CCP330521	06/03/2017 15:40:00	7.58			132	2	168	0.2	4	0	0	58	58	160
153	CCP330521	17/03/2017 20:03:00	6.96			216	32	464	0.2	11	0	0	56	56	130
154	CCP330521	17/03/2017 22:03:00	7.03			154	14	924	0.2	8	0	0	52	52	180
155	CCP330521	18/03/2017 00:03:00	7.11			143	11	812	0.2	8	0	0	55	55	160
156	CCP330521	18/03/2017 12:03:00	7.19			156	14	1190	0.2	8	0	0	56	56	160
157	CCP330521	19/03/2017 06:03:00	7.41			203	15	873	0.3	11	0	0	71	71	110
158	CCP330521	19/03/2017 21:20:00	7.41			232	34	732	0.1	25	0	0	69	69	60
159	CCP330521	20/03/2017 18:00:00	7.65			391	37	269	0.2	22	0	0	118	118	40
160	CCP330521	21/03/2017 04:03:00	7.33			177	15	334	0.2	8	0	0	61	61	100
161	CCP330521	22/03/2017 00:04:00	7.15			274	57	472	0.2	14	0	0	46	46	20
162	CCP330521	23/03/2017 01:00:00	7.15			246	40	562	0.2	14	0	0	60	60	70
163	CCP330521	26/03/2017 18:11:00	8.12			537	33	326	0.5	60	0	0	157	157	30
164	CCP330521	28/03/2017 22:11:00	7.48			133	5	174	0.1	4	0	0	59	59	130
165	CCP330521	29/03/2017 02:11:00	7.58			168	8	181	0.1	3	0	0	78	78	80
166	CCP330521	30/03/2017 14:11:00	7.58			377	21	251	0.2	20	0	0	144	144	30
167	CCP330521	02/04/2017 12:50:00	8.02			612	51	369	0.3	65	0	0	149	149	70
168	CCP330521	03/04/2017 00:00:00		7.52	708.4										
169	CCP330521	03/04/2017 16:30:00	8.07			690	54	405	0.3	81	0	0	166	166	100
170	CCP330521	04/04/2017 00:00:00		7.55	760										
171	CCP330521	04/04/2017 16:00:00	8			724	58	422	0.3	101	0	0	167	167	30
172	CCP330521	05/04/2017 00:00:00		7.75	810										
173	CCP330521	05/04/2017 16:30:00	8.08			764	62	469	0.3	109	0	0	178	178	30
174	CCP330521	06/04/2017 00:00:00		7.95	874										
175	CCP330521	06/04/2017 14:20:00	8.14			842	77	504	0.3	122	0	0	184	184	0
176	CCP330521	07/04/2017 00:00:00		8.09	869										
177	CCP330521	07/04/2017 13:45:00	8.2			848	69	513	0.3	126	0	0	197	197	0
178	CCP330521	19/05/2017 15:50:00	7.82			180	12	155	0.2	10	0	0	65	65	480
179	CCP330521	20/05/2017 13:40:00	7.87			390	27	239	0.2	35	0	0	115	115	180
180	CCP330521	21/05/2017 13:40:00	8.26			555	39	317	0.3	52	0	0	171	171	100
181	CCP330521	23/05/2017 12:00:00	8.34			629	41	356	0.3	52	0	6	191	197	50
182	CCP330521	17/10/2017 12:05:00	7.68			611	83	395	0.3	91	<1	<1	88	88	10
183	CCP330521	19/10/2017 16:30:00	8.03			618	38	357	0.3	86	<1	<1	159	159	50
184	CCP330521	30/11/2017 19:00:00	8.01			933	58	525	0.3	171	<1	<1	161	161	<10
185	CCP330521	30/11/2017 21:00:00	7.81			505	83	455	0.3	56	<1	<1	79	79	20
186	CCP330521	30/11/2017 23:00:00	7.7			392	68	352	0.3	35	<1	<1	62	62	30
187	CCP330521	01/12/2017 01:00:00	7.66			368	61	376	0.3	32	<1	<1	62	62	80
188	CCP330521	03/12/2017 23:30:00	8.12			721	60	446	0.2	103	<1	<1	141	141	40
189	CCP330521	04/12/2017 01:30:00	7.98			301	26	490	0.2	26	<1	<1	80	80	210

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
143	CCP330521	0	0	0		0	1	0	210	0		0	0	1
144	CCP330521	0	0	0		0	0	3	0	0		188	0	2
145	CCP330521	1	0	0		0	3	0	80	0		2	0	1
146	CCP330521	2	0	0		0	2	0	0	0		0	0	0
147	CCP330521	1	0	0		0	1	0	0	0		0	0	0
148	CCP330521	0	0	0	14	0	2	0	150	0	4	0	0	2
149	CCP330521	0	0	0	16	0	2	0	120	0	5	0	0	2
150	CCP330521	0	0	0	15	0	2	0	130	0	4	0	0	1
151	CCP330521	0	0	0	19	0	1	0	60	0	6	0	0	2
152	CCP330521	2	0	0	11	0	3	0	110	0	4	3	0	0
153	CCP330521	0	0	0	18	0	3	0	130	0	5	121	0	4
154	CCP330521	0	0	0	12	0	1	0	100	0	3	0	0	1
155	CCP330521	0	0	0	11	0	1	0	100	0	3	0	0	0
156	CCP330521	0	0	0	13	0	1	0	100	0	3	0	0	1
157	CCP330521	0	0	0	19	0	2	0	100	0	4	0	0	1
158	CCP330521	0	0	0	32	0	0	0	70	0	5	0	0	1
159	CCP330521	0	0	0	30	0	2	0	80	0	11	0	0	1
160	CCP330521	0	0	0	16	0	2	0	110	0	4	0	0	1
161	CCP330521	0	0	0	23	0	1	0	50	0	6	0	0	2
162	CCP330521	0	0	0	19	0	2	0	100	0	5	0	0	2
163	CCP330521	2	50	0	33	0	3	0	0	0	14	0	0	1
164	CCP330521	1	0	0	14	0	1	0	140	0	4	0	0	0
165	CCP330521	0	0	0	22	0	0	0	100	0	4	0	0	0
166	CCP330521	1	0	0	41	0	2	0	50	0	10	0	0	1
167	CCP330521	1	0	0	39	0	0	0	60	0	18	0	1	0
168	CCP330521													
169	CCP330521	1	0	0	43	0	0	0	70	0	20	26	0	0
170	CCP330521													
171	CCP330521	2	0	0	46	0	1	0	0	0	22	0	0	0
172	CCP330521													
173	CCP330521	2	0	0	48	0	0	0	0	0	23	0	0	1
174	CCP330521													
175	CCP330521	2	0	0	54	0	0	0	0	0	26	0	0	1
176	CCP330521													
177	CCP330521	2	0	0	54	0	1	0	0	0	26	0	0	1
178	CCP330521	1	0	0	14	0	3	0	380	0	6	4	0	0
179	CCP330521	1	0	0	26	0	9	0	200	0	11	2	0	2
180	CCP330521	2	0	0	33	0	5	0	120	0	15	1	2	0
181	CCP330521	1	0	0	33	0	2	0	0	0	18	0	2	0
182	CCP330521	<1	<50	<0.1	34	<1	<1	<1	70	<1	14	2	<1	1
183	CCP330521	1	<50	<0.1	38	<1	<1	<1	60	<1	18	2	<1	<1
184	CCP330521	1	<50	<0.1	37	<1	2	<1	<50	<1	26	<1	<1	<1
185	CCP330521	<1	<50	<0.1	28	<1	<1	<1	60	<1	12	<1	<1	1
186	CCP330521	<1	<50	<0.1	20	<1	<1	<1	50	<1	8	<1	<1	1
187	CCP330521	<1	<50	<0.1	20	<1	<1	<1	140	<1	8	<1	<1	1
188	CCP330521	<1	<50	<0.1	38	<1	<1	<1	60	<1	22	<1	<1	1
189	CCP330521	<1	<50	<0.1	20	<1	<1	<1	230	<1	8	<1	<1	1

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
143	CCP330521			0	0	0	0	0	<0.0001	0.03	0	0.34	0.34	6.9
144	CCP330521			0	0	0	0	0	0	0	0	0.5	0.5	8.8
145	CCP330521			0	0	0	0	0	<0.0001	0.03	0.01	0.79	0.8	7.9
146	CCP330521			0	0	0	0	0	<0.001	0.04	0.32	1.1	1.42	10.10
147	CCP330521			0	0	0	0	0	0	310	430	650	1080	9.6
148	CCP330521	3	14	0	0	0	0	0	0		0.12	0	0.12	8.9
149	CCP330521	4	18	0	0	0	0	0	0		0	0.03	0.03	5.6
150	CCP330521	3	14	0	0	0	0	0	0		0.48	0.04	0.52	7.9
151	CCP330521	4	17	0	0	0	0	0	0		0.01	0.27	0.28	8.4
152	CCP330521	3	10	0	0	0	0	0	0		0.02	0.36	0.38	
153	CCP330521	4	14	0	0	0	0	72	0		0	0	0	6
154	CCP330521	2	12	0	0	0	0	0	0		0.02	0.04	0.06	6.6
155	CCP330521	2	12	0	0	0	0	0	0		0	0.1	0.1	7.7
156	CCP330521	2	12	0	0	0	0	0	0		0.01	0.13	0.14	8.3
157	CCP330521	2	15	0	0	0	0	0	0		0	0.2	0.2	8.2
158	CCP330521	3	12	0	0	0	0	0	0		0	0.04	0.04	5.7
159	CCP330521	3	31	0	0	0	0	0	0		0.02	0.12	0.14	4.7
160	CCP330521	2	11	0	0	0	0	0	0		0.08	0.12	0.2	4.2
161	CCP330521	3	18	0	0	0	0	0	0		0.05	0.35	0.4	4.6
162	CCP330521	3	19	0	0	0	0	0	0		0	0	0	4.7
163	CCP330521	3	63	0	0	0	0	0	0		0.04	0.38	0.42	9.3
164	CCP330521	3	5	0	0	0	0	0	0		0.03	0.09	0.12	6.9
165	CCP330521	3	4	0	0	0	0	0	0		0	0.03	0.03	5.1
166	CCP330521	4	23	0	0	0	0	0	0		0	0	0	5
167	CCP330521	4	64	0	0	0	0	0	0		0.03	1.47	1.5	9.1
168	CCP330521													
169	CCP330521	4	69	0	0	0	0	0	0		0.03	1.5	1.53	8.9
170	CCP330521													
171	CCP330521	4	74	0	0	0	0	0	0		0.02	1.41	1.43	9.4
172	CCP330521													
173	CCP330521	4	78	0	0	0	0	0	0		0.02	1.25	1.27	9.3
174	CCP330521													
175	CCP330521	4	86	0	0	0	0	0	0		0.02	1.12	1.14	10
176	CCP330521													
177	CCP330521	4	89	0	0	0	0	0	0		0.02	0.82	0.84	10
178	CCP330521	3	14	0	0	0	0	0	0		0	0.15	0.15	9.5
179	CCP330521	5	40	0	0	0	0	32	0		0.05	0.75	0.8	7.5
180	CCP330521	5	72	0	0	0	0	0	0		0.04	0.8	0.84	8.5
181	CCP330521	3	76	0	0	0	0	0	0		0.01	0.5	0.51	10.20
182	CCP330521	3	67	<10	<1	<1	<10	<5	<0.1		<0.01	0.3	0.3	7.4
183	CCP330521	4	64	<10	2	<1	<10	<5	<0.1		<0.01	0.24	0.24	9.7
184	CCP330521	3	96	<10	<1	<1	<10	<5	<0.1		<0.01	<0.01	<0.01	4.1
185	CCP330521	3	47	<10	<1	<1	<10	<5	<0.1		<0.01	0.15	0.15	9.1
186	CCP330521	2	32	<10	<1	<1	<10	<5	<0.1		<0.01	0.16	0.16	6.8
187	CCP330521	2	32	<10	<1	<1	<10	<5	<0.1		<0.01	0.15	0.15	6.7
188	CCP330521	3	72	<10	<1	<1	<10	<5	<0.1		<0.01	<0.01	<0.01	6.9
189	CCP330521	2	26	<10	<1	<1	<10	<5	<0.1		<0.01	0.01	0.01	6.4

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
143	CCP330521	2.4	0.36			42					2.1		
144	CCP330521	2.7	1,040			23					2.2		
145	CCP330521	1.5	0.38			103					0.7		
146	CCP330521	2.2	0.76			162					0.8		
147	CCP330521	2.3	300			221					1200		
148	CCP330521	7.5	2.21		5	51	0	0	2		7.4		
149	CCP330521	14.8	2.68		8	60	0	0	3		14.8		
150	CCP330521	7.6	1.65		6	54	0	0	2		7.1		
151	CCP330521	3.4	0.68		5	72	0	0	2		3.1		
152	CCP330521	1.2	0.46		2	44	0	0	0		0.8		
153	CCP330521	2.2	0.38		1	66	0	0	3		2.2		
154	CCP330521	4.1	0.92		9	42	0	0	3		4		
155	CCP330521	4.5	1.11		10	40	0	0	3		4.4		
156	CCP330521	3.7	0.81		8	45	0	0	3		3.6		
157	CCP330521	1.4	0.16		4	64	0	0	3		1.2		
158	CCP330521	12	2.11		6	100	0	0	2		12		
159	CCP330521	2	0.3		2	120	0	0	2		1.9		
160	CCP330521	2.5	0.43		3	56	0	0	2		2.3		
161	CCP330521	5.2	1.12		6	82	0	0	2		4.8		
162	CCP330521	2.4	1.37		6	68	0	0	2		2.4		
163	CCP330521	1.7	1.14		4	140	0	0	2		1.3		
164	CCP330521	2	1.42		3	51	0	0	0		1.9		
165	CCP330521	6.2	1.86		5	71	0	0	0		6.2		
166	CCP330521	8.5	2.06		6	144	0	0	0		8.5		
167	CCP330521	2.1	0.15		2	172	0	0	3		0.6		
168	CCP330521												
169	CCP330521	2	0.12		3	190	0	0	2		0.5		
170	CCP330521												
171	CCP330521	2.2	0.24			205	0	0	2		0.8		
172	CCP330521												
173	CCP330521	2.2	0.18		5	214	0	0	2		0.9		
174	CCP330521												
175	CCP330521	2.1	0.25		2	242	0	0	2		1		
176	CCP330521												
177	CCP330521	1.6	0.18		2	242	0	0	2		0.8		
178	CCP330521	1.2	0.42		2	60	0	0	1		1		
179	CCP330521	2.2	0.28		0	110	0	0	2		1.4		
180	CCP330521	1.4	0.24		0	144	0	0	4		0.6		
181	CCP330521	0.8	0.12		0	156	0	0	4		0.3		
182	CCP330521	1	0.23		1	142	<1	<1	3		0.7		
183	CCP330521	0.6	0.32		<1	169	<1	<1	2		0.4		
184	CCP330521	1	0.25		<1	199	<1	<1	2		1		
185	CCP330521	2.8	0.76		3	119	<1	<1	4		2.7		
186	CCP330521	2.4	0.67		4	83	<1	<1	4		2.2		
187	CCP330521	2	0.46		3	83	<1	<1	4		1.9		
188	CCP330521	1	0.23		7	185	<1	<1	3		1		
189	CCP330521	5.2	1.26		4	83	<1	<1	3		5.2		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
190	CCP330521	05/12/2017 19:30:00	8.16			424	26	230	0.2	50	<1	<1	118	118	30
191	CCP330521	07/12/2017 10:35:00	8.24			749	42	466	0.3	108	<1	<1	204	204	<10
192	CCP330521	07/12/2017 11:36:00	8.23			770	43	464	0.3	109	<1	<1	205	205	<10
193	CCP330521	08/12/2017 12:36:00	8.29			852	46	483	0.3	121	<1	11	208	220	<10
194	CCP330521	09/12/2017 12:36:00	8.31			877	46	467	0.3	129	<1	15	217	232	<10
195	CCP330521	12/12/2017 05:13:00	8.5			986	49		0.4						<10
196	CCP330521	13/12/2017 01:13:00	8.23			382	16		0.2						50
197	CCP330521	14/12/2017 03:13:00	8.34			560	24		0.2						10
198	CCP330521	20/02/2018 23:02:00	7.18			711	39		0.2						10
199	CCP330521	21/02/2018 03:02:00	7.73			384	36		0.2						20
200	CCP330521	22/02/2018 02:30:00	7.68			181	8		0.1						80
201	CCP330521	17/10/2018 18:03:00	7.48			445	9		0.2						<10
202	CCP330521	17/10/2018 22:03:00	7.23			288	39		0.2						40
203	CCP330521	18/10/2018 14:04:00	7.21			298	63		0.2						80
204	CCP330521	29/01/2019 22:54:00	7.54			139	16		0.1						480
205	CCP330521	30/01/2019 06:54:00	7.39			171	17		<0.1						170
206	CCP330521	31/01/2019 10:55:00	7.57			225	21		0.2						150
207	CCP330521	01/02/2019 06:55:00	7.69			316	25		0.3						170
208	CCP330521	13/02/2019 11:40:00	8.06	7.33	430	435	19		0.3						60
209	CCP330521	03/04/2019 10:36:00	8.4	6.4	814	805	38		0.3						20
210	CCP330521	03/07/2019 13:00:00													
211	CCP330521	08/01/2020 14:30:00													
212	CCP330521	05/02/2020 15:50:00													
213	CCP330521	03/03/2020 00:00:00													
214	CCP330521	08/04/2020 12:00:00													
215	CCP330521	07/05/2020 13:55:00													
216	CCP330521	03/06/2020 12:00:00													
217	CCP330521	06/07/2020 01:00:00													
218	CCP330521	05/08/2020 15:50:00													
219	CCP330521	08/10/2020 16:00:00													
220	CCP330521	02/11/2020 09:25:00													
221	CCP330521	08/12/2020 12:00:00													
222	CCP330521	25/12/2020 06:43:00	7.73			422	12		0.2						<10
223	CCP330521	12/01/2021 12:10:00	8.23	7.66	743	640	50		0.3						<10
224	CCP330521	09/02/2021 16:00:00													
225	CCP330521	07/04/2021 01:00:00													
226	CCP330521	31/05/2021 00:00:00													
227	CCP330521	06/07/2021 15:00:00													
228	CCP330521	03/08/2021 13:40:00													
229	CCP330521	09/09/2021 07:45:00													
230	CCP330521	05/10/2021 15:30:00													
231	CCP330521	17/11/2021 20:43:00	7.02	8.47	150	191	12		0.2						<10
232	CCP330521	26/12/2021 00:00:00	7.64	7.5	200	275	25		0.2						<10
233	CCP330521	01/02/2022 16:30:00													
234	CCP330521	04/04/2022 00:00:00													
235	CCP330521	02/05/2022 11:10:00													
236	CCP330521	02/06/2022 00:00:00	7.66			185	18		0.1						<10

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
190	CCP330521	4	<50	<0.1	22	<1	1	<1	60	<1	12	<1	<1	1
191	CCP330521	3	<50	<0.1	45	<1	1	<1	<50	<1	24	<1	<1	1
192	CCP330521	3	<50	<0.1	46	<1	1	<1	<50	<1	24	<1	<1	<1
193	CCP330521	3	<50	<0.1	50	<1	<1	<1	<50	<1	28	<1	<1	<1
194	CCP330521	3	<50	<0.1	50	<1	<1	<1	<50	<1	28	<1	<5	<1
195	CCP330521	3	<50	<0.1		<1	<1	<1	<50	<1		<1	<1	<1
196	CCP330521	2	<50	<0.1		<1	1	<1	<50	<1		<1	<1	1
197	CCP330521	3	<50	<0.1		<1	2	<1	<50	<1		<1	<1	<1
198	CCP330521	5	<50	<0.1		<1	1	8	260	<1		895	<1	6
199	CCP330521	<1	<50	<0.1		<1	1	<1	50	<1		<1	<1	2
200	CCP330521	1	<50	<0.1		<1	2	<1	80	<1		<1	<1	1
201	CCP330521	3	<50	<0.1		<1	<1	3	50	<1		602	<1	8
202	CCP330521	2	<50	<0.1		<1	<1	2	100	<1		310	<1	4
203	CCP330521	<1	<50	<0.1		<1	1	<1	140	<1		22	<1	4
204	CCP330521	<1	<50	<0.1		<1	<1	<1	300	<1		<1	<1	<1
205	CCP330521	2	<50	<0.1		<1	1	<1	150	<1		<1	<1	2
206	CCP330521	2	<50	<0.1		<1	6	<1	120	<1		1	<1	1
207	CCP330521	2	<50	<0.1		<1	2	<1	150	<1		2	<1	1
208	CCP330521	3	70	<0.1		<1	1	<1	60	<1		18	1	<1
209	CCP330521	2	<50	<0.1		<1	<1	<1	<50	<1		23	<1	<1
210	CCP330521													
211	CCP330521													
212	CCP330521													
213	CCP330521													
214	CCP330521													
215	CCP330521													
216	CCP330521													
217	CCP330521													
218	CCP330521													
219	CCP330521													
220	CCP330521													
221	CCP330521													
222	CCP330521	4	<50	<0.1		3	3	<1	<50	<1		2	4	18
223	CCP330521	2	60	<0.1		<1	<1	<1	<50	<1		47	1	<1
224	CCP330521													
225	CCP330521													
226	CCP330521													
227	CCP330521													
228	CCP330521													
229	CCP330521													
230	CCP330521													
231	CCP330521	<1	<50	<0.1		<1	<1	<1	<50	<1		83	<1	2
232	CCP330521	<1	<50	<0.1		<1	1	<1	<50	<1		<1	2	2
233	CCP330521													
234	CCP330521													
235	CCP330521													
236	CCP330521	<1	<50	<0.1		<1	<1	<1	<50	<1		<1	8	<1

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
190	CCP330521	4	45	<10	<1	<1	<10	<5	<0.1		<0.01	0.1	0.1	8.5
191	CCP330521	3	86	<10	<1	<1	<10	<5	<0.1		<0.01	0.02	0.02	8.8
192	CCP330521	3	86	<10	<1	<1	<10	<5	<0.1		<0.01	<0.01	<0.01	9.6
193	CCP330521	3	95	<10	<1	<1	<10	<5	<0.1		<0.01	<0.01	<0.01	9
194	CCP330521	3	96	<10	<1	<1	<10	<5	<0.1		<0.01	<0.01	<0.01	9.7
195	CCP330521			<10	<1	<1	<10	<5	<0.1	0.02	<10	0.39	0.39	9.2
196	CCP330521			<10	<1	<1	<10	<5	<0.1	0.04	<10	0.26	0.26	9.1
197	CCP330521			<10	<1	<1	<10	<5	<0.1	0.08	<10	0.15	0.15	9.2
198	CCP330521			<10	<1	<1	<10	<5	<0.1	15.5	<10	<10	<10	8
199	CCP330521			<10	<1	<1	<10	<5	<0.1	0.59	0.03	0.1	0.13	5.5
200	CCP330521			<10	<1	<1	<10	<5	<0.1	0.03	<10	0.18	0.18	7.4
201	CCP330521			<10	<1	<1	<10	<5	<0.1	2.58	<0.010000000	<0.010000000	<0.010000000	1.6
202	CCP330521			<10	<1	<1	<10	<5	<0.1	0.74	<0.010000000	<0.010000000	<0.010000000	1.9
203	CCP330521			<10	<1	<1	<10	<5	<0.1	0.26	<0.010000000	0.03	0.03	6.8
204	CCP330521			<10	<1	<1	<10	<5	<0.1	0.1	<0.010000000	0.17	0.17	10.10
205	CCP330521			<10	<1	<1	<10	<5	<0.1	0.06	<0.010000000	0.45	0.45	9.8
206	CCP330521			<10	<1	<1	<10	<5	<0.1	0.07	<0.010000000	0.36	0.36	9.8
207	CCP330521			<10	<1	<1	<10	<5	<0.1	0.06	<0.010000000	0.28	0.28	10.20
208	CCP330521			<10	<1	<1	<10	<5	<0.1	0.05	<0.010000000	0.04	0.04	9.8
209	CCP330521			<10	<1	<1	<10	<5	<0.1	0.03	<0.010000000	<0.010000000	<0.010000000	11.00
210	CCP330521													
211	CCP330521													
212	CCP330521													
213	CCP330521													
214	CCP330521													
215	CCP330521													
216	CCP330521													
217	CCP330521													
218	CCP330521													
219	CCP330521													
220	CCP330521													
221	CCP330521													
222	CCP330521			<10	<1	<1	<10	9	<0.1	0.17		0.36	0.36	9.1
223	CCP330521			<10	<1	<1	<10	5	<0.1	0.04	0.01	0.39	0.4	9.3
224	CCP330521													
225	CCP330521													
226	CCP330521													
227	CCP330521													
228	CCP330521													
229	CCP330521													
230	CCP330521													
231	CCP330521			<10	<1	<1	<10	<5	<0.1	0.63		0.68	0.88	4
232	CCP330521			<10	<1	<1	<10	<5	<0.1	0.19		0.38	0.46	7.4
233	CCP330521													
234	CCP330521													
235	CCP330521													
236	CCP330521			<10	<1	<1	<10	<5	<0.1	0.08		0.14	0.14	7.7

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
190	CCP330521	1.1	0.38		5	104	<1	<1	2		1		
191	CCP330521	0.4	0.1		<1	211	<1	<1	2		0.4		
192	CCP330521	0.7	0.15		<1	214	<1	<1	3		0.7		
193	CCP330521	0.4	0.25		<1	240	<1	<1	3		0.4		
194	CCP330521	0.4	0.07		<1	240	<5	<1	3		0.4		
195	CCP330521	1	0.1			267					0.6		
196	CCP330521	0.8	0.32			114					0.5		
197	CCP330521	0.6	0.19			157					0.5		
198	CCP330521	32.4	4.09			156					32.4		
199	CCP330521	13.3	9.94			109					13.2		
200	CCP330521	3.1	1.15			56					2.9		
201	CCP330521	8.9	1.05			153					8.9		
202	CCP330521	4.1	0.82			94					4.1		
203	CCP330521	1	1			86					1		
204	CCP330521	4.4	0.89			42					4.2		
205	CCP330521	2.8	0.6			51					2.4		
206	CCP330521	2.1	0.45			58					1.7		
207	CCP330521	1.3	0.26			83					1		
208	CCP330521	0.4	0.18			123				30.85	0.4		
209	CCP330521	0.4	0.06			241				26.7	0.4		
210	CCP330521												sample
211	CCP330521												taken
212	CCP330521												sample
213	CCP330521												Dry
214	CCP330521												Dry
215	CCP330521												Dry.
216	CCP330521												Dry. No flow.
217	CCP330521												collected. Site
218	CCP330521												collected. Site
219	CCP330521												collected. Site
220	CCP330521												Not sampled.
221	CCP330521												Sampled.
222	CCP330521	1.5	0.56			146					1.1		
223	CCP330521	0.8	0.12			197				22.28	0.4		Clear.
224	CCP330521												Site not flowing.
225	CCP330521												Dry.
226	CCP330521												
227	CCP330521												collected.
228	CCP330521												collected.
229	CCP330521												collected. Site
230	CCP330521												
231	CCP330521	10	2.87			66				24.54	9.1		Not filtered
232	CCP330521	5.3	0.85			84				25	4.8		Sample
233	CCP330521												No flow
234	CCP330521												ongoing
235	CCP330521												Dry
236	CCP330521	4	0.91			56					3.9		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
237	CCP330521	04/07/2022 00:00:00	7.85			274	34		0.2						<10
238	CCP330521	13/07/2022 10:40:00	8.32	7.37	849	823	70		0.3						<10
239	CCP330521	02/08/2022 12:45:00	8.37	7.27	894	888	55	521	0.2	99	<1.00	7	234	241	<10.000
240	CCP330521	01/09/2022 01:00:00													
241	CCP330521	24/11/2022 00:00:00	7.8			261	24		0.2						<10
242	CCP330521	07/12/2022 11:30:00	8.41	7.76	915	895	60		0.3						<10
243	CCP330521	01/02/2023 00:00:00	7.62			154	8		0.2						10
244	CCP330521	01/02/2023 11:00:00	8.25	7.76	874.5	849	47		0.3						<10
245	CCP330521	04/02/2023 00:00:00	7.24			444	24		0.2						<10
246	CCP330521	01/03/2023 00:00:00													
247	CCP330521	04/04/2023 12:00:00	7.58	7.43	213	179	10	168	0.1	13	<1	<1	67	67	<10
248	CCP330521	06/04/2023 00:00:00	7.48			292	19		0.2						<10
249	CCP330521	06/07/2023 01:00:00													
250	CCP330521	06/09/2023 01:00:00													
251	CCP330521	04/12/2023 00:00:00													
252	CCP330521	05/02/2024 12:20:00	8.07	7.61	716	703	45		0.3						<10
253	CCP330521	07/03/2024 12:00:00	7.63	7.32	742.6	389	23		0.4						<10
254	CCP330521	07/08/2024 11:40:00													
255	CCP330521	04/09/2024 01:00:00													
256	CCP330521	06/11/2024 01:00:00													
257	CCP330521	29/11/2024 00:00:00													
258	CCP330521	11/02/2025 12:30:00	8.09	7.45	440	420	23		0.2						<10
259	CCP330521	05/03/2025 11:00:00	7.37	7.01	388.1	292	53		0.2						10
260	CCP330521	11/04/2025 08:00:00	8.18	6.6	484	487	16		0.3						<10
261	CCP330521	08/05/2025 09:10:00	8.06	7.41	775	759	43		0.3						<10
262	CCP330521	02/07/2025 12:20:00													
263	CCP330522	07/06/2004 00:00:00	7.91			1960									
264	CCP330522	07/07/2004 00:00:00	8.03			2360									
265	CCP330522	06/10/2004 00:00:00	7.88			3490									
266	CCP330522	06/01/2005 00:00:00	7.66	7.66		1020	95	704							0
267	CCP330522	07/04/2005 00:00:00	7.41	7.41		1540	45	816							0.02
268	CCP330522	06/05/2005 00:00:00	8.15	8.15		2730	604	1960							0.01
269	CCP330522	02/06/2005 00:00:00	8.23	8.23		3300	738	2140							0
270	CCP330522	07/07/2005 00:00:00	8.08	8.08		5530	1360	3490							
271	CCP330522	05/10/2005 00:00:00	7.92	7.92		6360	1930	3880	0.2	1290					
272	CCP330522	06/01/2006 00:00:00	7.98	7.98		5630	1420	2900	0.3	868					
273	CCP330522	06/04/2006 00:00:00	8.17	8.17		104	4	65	0.2	3					
274	CCP330522	25/05/2006 00:00:00	7.2	7.87		535	173	780	0.4	132					0
275	CCP330522	06/03/2007 00:00:00	7.98	7.98		952	95	634	0.3	120					0
276	CCP330522	27/03/2007 00:00:00	7.6	7.6		258	94	648	0.3	92					
277	CCP330522	02/05/2007 00:00:00	7.5	7.5		430	347	1260	0.3	242					
278	CCP330522	12/03/2008 00:00:00	8.15	8.15			32	446		72					0
279	CCP330522	03/04/2008 00:00:00	8.19	8.19		948	40	488	0.3	100					
280	CCP330522	22/05/2008 00:00:00					320								
281	CCP330522	30/06/2008 00:00:00	8.32	8.32		1530	156	903	0.3	214					
282	CCP330522	02/10/2008 00:00:00	7.96	7.96		1980	275	1160	0.3	314					0
283	CCP330522	15/03/2009 00:00:00	8.1	8.1		84	0								0.03

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
237	CCP330521	1	<50	<0.1		<1	<1	<1	<50	<1		<1	<1	2
238	CCP330521	1	<50	<0.1		<1	<1	<1	<50	<1		52	<1	<1
239	CCP330521	1	<50.00	<0.10	60	<1.00	<1.00	<1.00	<50.00	<1.00	30	22	<1.00	<1.00
240	CCP330521													
241	CCP330521	1	<50	<0.1		<1	<1	<1	<50	<1		2	<1	1
242	CCP330521	3	60	<0.1		<1	<1	<1	<50	<1		2	<1	1
243	CCP330521	2	<50	<0.1		<1	1	<1	50	<1		<1	<1	1
244	CCP330521	2	60	<0.1		<1	<1	<1	<50	<1		23	<1	<1
245	CCP330521	2	70	<0.1		<1	<1	<1	<50	<1		<1	<1	<1
246	CCP330521													
247	CCP330521	1	<50	<0.1	15	<1	1	<1	<50	<1	5	<1	<1	<1
248	CCP330521	2	<50	<0.1		<1	2	<1	<50	<1		<1	1	<1
249	CCP330521													
250	CCP330521													
251	CCP330521													
252	CCP330521	3	<50	<0.1		<1	<1	<1	<50	<1		32	<1	<1
253	CCP330521	2	<50	<0.1		<1	1	<1	<50	<1		<1	<1	<1
254	CCP330521													
255	CCP330521													
256	CCP330521													
257	CCP330521													
258	CCP330521	2	<50	<0.1		<1	<1	<1	<50	<1		25	<1	<1
259	CCP330521	<1	60	<0.1		<1	<1	<1	60	<1		4	<1	2
260	CCP330521	2	<50	<0.1		<1	<1	<1	<50	<1		1	<1	<1
261	CCP330521	<1	<50	<0.1		<1	<1	<1	<50	<1		110	<1	<1
262	CCP330521													
263	CCP330522													
264	CCP330522													
265	CCP330522													
266	CCP330522	0		0		0	0	0	0	0		0		0
267	CCP330522	0.01		0		0	0	0.01	0.09	0		3.67		0
268	CCP330522	0		0		0	0	0	0	0		0		0
269	CCP330522	0		0		0	0	0	0	0		0		0
270	CCP330522								0					
271	CCP330522				294									
272	CCP330522				136									
273	CCP330522				2									
274	CCP330522	0	0	0	80	0	0	0	0	0		0.45	0	0
275	CCP330522	0	0	0	65	0	0	0	0	0		0	0	0
276	CCP330522				64									
277	CCP330522				117									
278	CCP330522	0	0	0	60	0.01	0	0	0	0		0	0	0
279	CCP330522				68									
280	CCP330522													
281	CCP330522				66						50			
282	CCP330522	0	0.08	0	76	0	0	0	0.06	0		0	0	0
283	CCP330522	0		0			0		0.05	0				0

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
237	CCP330521			<10	<1	<1	<10	<5	<0.1	0.14		0.41	0.41	10.60
238	CCP330521			<10	<1	<1	<10	<5	<0.1	0.04		0.06	0.06	10.80
239	CCP330521	3	87	<10.00	<1.00	1	<10.000	<5.00	<0.10	<0.01	<0.01	<0.01	<0.01	9.1
240	CCP330521													
241	CCP330521			<10	<1	<1	<10	<5	<0.1	0.02		1.25	1.25	6.6
242	CCP330521			<10	<1	1	<10	26	<0.1	0.07		<0.01	<0.01	8.7
243	CCP330521			<10	<1	<1	<10	<5	<0.1	<0.01		0.33	0.33	9.3
244	CCP330521			<10	<1	<1	<10	<5	<0.1	0.06		0.05	0.05	8.4
245	CCP330521			<10	<1	<1	<10	<5	<0.1	0.02		0.36	0.36	9
246	CCP330521													
247	CCP330521	4	14	<10	<1	<1	<10	<5	<0.1	<0.01	0.01	0.12	0.13	7.9
248	CCP330521			<10	<1	<1	<10	<5	<0.1	0.07		1.03	1.03	9.2
249	CCP330521													
250	CCP330521													
251	CCP330521													
252	CCP330521			<10	<1	<1	<10	<5	<0.1	0.17		0.06	0.06	8.6
253	CCP330521			<10	<1	<1	<10	<5	<0.1	0.08		0.03	0.03	8.9
254	CCP330521													
255	CCP330521													
256	CCP330521													
257	CCP330521													
258	CCP330521			<10	<1	<1	<10	9	<0.1	0.02		0.31	0.31	8.7
259	CCP330521			<10	<1	<1	<10	<5	<0.1	<0.01		0.18	0.18	6.1
260	CCP330521			<10	<1	<1	<10	<5	<0.1	0.05		0.03	0.03	9.4
261	CCP330521			<10	<1	<1	<10	<5	<0.1	0.05		<0.01	<0.01	8
262	CCP330521													
263	CCP330522													
264	CCP330522													
265	CCP330522													
266	CCP330522			0	0			0					0	
267	CCP330522			0	0			0					0.01	
268	CCP330522			0	0			0					0.09	
269	CCP330522			0	0			0					0.28	
270	CCP330522												0	
271	CCP330522		920										0.01	
272	CCP330522		842											
273	CCP330522		18											
274	CCP330522		141	0	0	0	0	0.02	0		0	0.02	0.02	
275	CCP330522		95	0	0	0	0	0.01	0		0	0	0	
276	CCP330522		87										0	
277	CCP330522		204						0				0	
278	CCP330522		68	0	0	0	0.01	0	0				0.02	
279	CCP330522		82											
280	CCP330522													
281	CCP330522	4	175											
282	CCP330522		256	0	0	0	0	0	0					
283	CCP330522			0	0			0	0					

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
237	CCP330521	1.9	0.37			77					1.5		
238	CCP330521	0.4	0.07			253				18.86	0.3		approx 20L sec
239	CCP330521	0.1	0.02		<1	273	<1.00	<1.00	3	20.31	0.1		
240	CCP330521												Not flowing
241	CCP330521	1.2	0.06			77					<0.5		
242	CCP330521	0.4	0.04			298				31.15	0.4		
243	CCP330521	1	0.31			51					0.7		
244	CCP330521	0.4	0.03			264				31.11	0.4		
245	CCP330521	0.8	0.24			120					0.4		
246	CCP330521												Not flowing
247	CCP330521	0.9	0.51		2	58	<1	<1	<1	26.14	0.8		
248	CCP330521	1.6	0.24			85					0.6		
249	CCP330521												Dry
250	CCP330521												Not flowing
251	CCP330521												flowing
252	CCP330521	0.4	0.14			206				31.57	0.3		
253	CCP330521	0.5	0.22			105				26.99	0.5		
254	CCP330521												Dry
255	CCP330521												Dry
256	CCP330521												Dry
257	CCP330521												Dry
258	CCP330521	0.6	0.16			136				27.05	0.3		
259	CCP330521	1.6	0.37			94				27.45	1.4		Muddy
260	CCP330521	0.4	0.18			139				23.45	0.4		
261	CCP330521	0.4	0.03			184				22.8	0.4		
262	CCP330521												Dry
263	CCP330522												
264	CCP330522												
265	CCP330522												
266	CCP330522	0.6	0.14								0.6		
267	CCP330522	11.6	0.43								11.6		
268	CCP330522	1.3	0.02								1.2		
269	CCP330522	1.2	0.21								0.9		
270	CCP330522	0.5	0.07								0.5		
271	CCP330522	0.4	0.04		2						0.4		
272	CCP330522				15								
273	CCP330522				4								
274	CCP330522	1	0.06		4						0.9		
275	CCP330522	0.3	0.02		0						0.3		
276	CCP330522	0.8	0.06		2						0.8		
277	CCP330522	0.8	0.04		1						0.8		
278	CCP330522	0	0.14								0		
279	CCP330522				0								
280	CCP330522												
281	CCP330522				0								
282	CCP330522				0								
283	CCP330522												

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
284	CCP330522	02/04/2009 00:00:00	8.29	8.29		870	28	535							0
285	CCP330522	07/07/2009 00:00:00	8.07	8.07		1080	86								0
286	CCP330522	11/01/2010 00:00:00	8.35	8.35		4330	892	2460	0.3	704					0
287	CCP330522	07/07/2010 00:00:00	8.24	8.24		2150	330	1420	0.3	352					0
288	CCP330522	07/10/2010 00:00:00	9.38	9.38		1650	249	912	0.3	314					
289	CCP330522	13/10/2010 00:00:00													0
290	CCP330522	27/04/2011 00:00:00	8.32	8.32		781	24	460	0.4	64					0
291	CCP330522	17/08/2011 00:00:00	8.34	8.34		1150	61	728	0.4	160					0.01
292	CCP330522	14/11/2011 00:00:00	7.99	7.99		2380	272	1370	0.6	415					0.01
293	CCP330522	18/01/2012 00:00:00				430		414		43					0.04
294	CCP330522	09/02/2012 00:00:00				648		361		74					0.15
295	CCP330522	09/05/2012 00:00:00	8.32	8.32		904	82	590	0.5	110					0.01
296	CCP330522	08/08/2012 00:00:00	8.43	8.43		1200	74	671	0.4	181					0
297	CCP330522	07/11/2012 00:00:00	8.29	8.29		2270	267	1440	0.3	390					0.12
298	CCP330522	05/02/2013 00:00:00	8.31	8.31		937	48	523	0.4	135					0.01
299	CCP330522	18/02/2013 00:00:00	8.15			1220	106	731	0.3	177					0
300	CCP330522	19/02/2013 00:00:00	8.26			1110	83	682	0.3	156					50
301	CCP330522	20/02/2013 00:00:00	8.17			1180	100	690	0.4	171					10
302	CCP330522	21/02/2013 00:00:00	8.44			1150	80	851	0.3	164					90
303	CCP330522	22/02/2013 00:00:00	8.12			352	22	530		28					0.05
304	CCP330522	25/02/2013 00:00:00	8.17			614	40	436	0.3	69					190
305	CCP330522	26/02/2013 00:00:00	8.23			768	44	491	0.3	93					20
306	CCP330522	27/02/2013 00:00:00	8.27			822	44	515	0.4	102					60
307	CCP330522	28/02/2013 00:00:00	8.29			816	44	529	0.4	99					0
308	CCP330522	02/03/2013 00:00:00	8.44			927	48	494	0.4	116					0
309	CCP330522	03/03/2013 00:00:00	8.45			953	43	486	0.4	118					0
310	CCP330522	04/03/2013 00:00:00	8.44			973	43	514	0.4	124					0
311	CCP330522	05/03/2013 00:00:00	8			534	52	592	0.2	57					50
312	CCP330522	06/03/2013 00:00:00	8.07			657	72	404	0.3	64					60
313	CCP330522	07/03/2013 00:00:00	7.72			947	313	629	0.3	43					130
314	CCP330522	08/03/2013 00:00:00	8.22			634	33	393	0.4	74					40
315	CCP330522	09/03/2013 00:00:00	8.25			757	34	428	0.4	84					30
316	CCP330522	10/03/2013 00:00:00	8.3			805	35	461	0.4	92					10
317	CCP330522	11/03/2013 00:00:00	8.4			750	35	418	0.4	100					0
318	CCP330522	12/03/2013 00:00:00	8.39			777	36	455		105					<0.01
319	CCP330522	13/03/2013 00:00:00	8.38			795	37	486	0.4	109					0
320	CCP330522	14/03/2013 00:00:00	8.43			888	39	486	0.4	112					10
321	CCP330522	15/03/2013 00:00:00	8.41			903	41	509	0.4	115					0
322	CCP330522	16/03/2013 00:00:00	8.42			920	42	519	0.4	123					10
323	CCP330522	17/03/2013 00:00:00	8.48			886	33	477	0.4	117					0
324	CCP330522	18/03/2013 00:00:00	8.36			975	47	546		132					<0.01
325	CCP330522	19/03/2013 00:00:00	8.37			991	48	588		137					<0.01
326	CCP330522	20/03/2013 00:00:00	8.38			1010	50	646		139					<0.01
327	CCP330522	21/03/2013 00:00:00	8.22			1050	49	553	0.4	136					0
328	CCP330522	22/03/2013 00:00:00	8.23			1050	49	623	0.4	136					20
329	CCP330522	23/03/2013 00:00:00	8.22			1070	50	537	0.4	139					0
330	CCP330522	24/03/2013 00:00:00	8.23			1080	50	630	0.4	144					0

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
284	CCP330522	0		0		0	0	0		0		0.01	0	0
285	CCP330522													
286	CCP330522	0.01	0.26	0	77	0	0	0	0	0	139	0	0	0
287	CCP330522	0	0.15	0	69	0	0	0	0	0	66	0	0	0
288	CCP330522				19						48			
289	CCP330522	0	0.1	0		0	0	0	0	0		0	0	0
290	CCP330522	0	0	0	52	0	0	0	0	0	32	0	0	0
291	CCP330522	0	0.06	0	74	0	0	0	0	0	44	0.06	0	0
292	CCP330522	0	0.13	0	74	0	0	0	0	0	75	0.01	0	0
293	CCP330522	0.006	<0.05	<0.0001	26	<0.001	0.003	<0.001	0.1	<0.001	13	0.02	<0.001	0.001
294	CCP330522	0.003	<0.05	<0.0001	43	<0.001	0.001	<0.001	0.12	<0.001	22	0.042	0.001	0.001
295	CCP330522	0	0	0	61	0	0	0	0	0	34	0.05	0	0
296	CCP330522	0	0	0	71	0	0	0	0	0	44	0.04	0	0
297	CCP330522	0	0.11	0	69	0	0	0	0.1	0	72	0.02	0	0
298	CCP330522	0	0	0	55	0	0	0	0	0	29	0.05	0	0
299	CCP330522	2	50	0	68	0	2	0	0	0	37	21	1	1
300	CCP330522	2	0	0	59	0	5	0	60	0	33	59	0	1
301	CCP330522	2	0	0	65	0	1	0	0	0	35	28	1	0
302	CCP330522	2	0	0.1	64	0	8	0	0	0	34	21	1	5
303	CCP330522	0.001	<0.05	<0.05	22	<0.001	0.014	<0.001	0.07	<0.001	10	0.002	<0.001	0.001
304	CCP330522	2	0	0.1	38	0	3	0	160	0	19	33	0	9
305	CCP330522	3	0	0	46	0	1	0	0	0	24	14	1	0
306	CCP330522	2	0	0	48	0	5	0	60	0	26	28	0	3
307	CCP330522	2	0	0	48	0	4	0	0	0	26	38	1	1
308	CCP330522	2	0	0	54	0	0	0	0	0	29	23	1	0
309	CCP330522	2	50	0	56	0	0	0	0	0	30	25	1	1
310	CCP330522	2	50	0	56	0	1	0	0	0	31	31	1	0
311	CCP330522	0	60	0	31	0	0	0	90	0	14	6	0	2
312	CCP330522	1	0	0	33	0	3	2	80	0	20	284	0	4
313	CCP330522	1	0	0.2	76	0	2	31	0	0	41	2340	0	49
314	CCP330522	2	0	0	36	0	2	0	0	0	21	32	1	1
315	CCP330522	2	0	0	40	0	9	0	0	0	23	40	1	0
316	CCP330522	2	0	0	42	0	2	0	0	0	24	36	1	0
317	CCP330522	2	50	0	47	0	0	0	0	0	26	0	1	0
318	CCP330522	0.002	<0.05	<0.05	49	<0.001	0.002	<0.001	<0.05	<0.001	27	0.032	0.001	<0.001
319	CCP330522	1	0	0	50	0	2	0	0	0	28	37	1	0
320	CCP330522	2	0	0.1	54	0	0	0	0	0	31	31	1	0
321	CCP330522	1	50	0	54	0	3	0	0	0	31	43	1	0
322	CCP330522	2	50	0	54	0	3	0	0	0	31	24	1	0
323	CCP330522	2	0	0	51	0	2	0	0	0	31	42	1	0
324	CCP330522	0.002	0.06	0.06	60	<0.001	<0.001	<0.001	<0.05	<0.001	35	0.006	0.002	<0.001
325	CCP330522	0.002	<0.05	<0.05	56	<0.001	<0.001	<0.001	<0.05	<0.001	32	0.019	0.001	<0.001
326	CCP330522	0.002	<0.05	<0.05	57	<0.001	<0.001	<0.001	<0.05	<0.001	33	<0.001	0.001	<0.001
327	CCP330522	2	60	0	56	0	0	0	0	0	31	20	1	0
328	CCP330522	2	0	0	58	0	3	0	0	0	33	11	1	1
329	CCP330522	2	50	0	57	0	3	0	0	0	32	24	1	0
330	CCP330522	2	50	0	61	0	2	0	0	0	35	41	1	0

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
284	CCP330522			0	0	0	0	0	0					
285	CCP330522													
286	CCP330522	8	660	0	0	0	0	0	0		0	0	0	
287	CCP330522	4	288	0	0	0	0	0	0		0	0.03	0.03	
288	CCP330522	2	254								0	0	0	
289	CCP330522			0	0	0	0	0	0					
290	CCP330522	2	77	0	0	0	0	0	0		0	0	0	
291	CCP330522	3	125	0	0	0	0	0	0		0	0.02	0.02	
292	CCP330522	4	338	0	0	0	0	0	0		0	0.03	0.03	
293	CCP330522	4	4	<0.01	<0.001	<0.001	<0.01	0.007	<0.0001		<0.01	0.02	0.02	
294	CCP330522	3	3	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
295	CCP330522	2	96	0	0	0	0	0	0		0	0.02	0.02	
296	CCP330522	2	135	0	0	0	0	0	0		0	0.02	0.02	
297	CCP330522	4	315	0	0	0	0	0.01	0		0	0.02	0.02	
298	CCP330522	3	104	0	0	0	0	0.06	0		0	0.01	0.01	
299	CCP330522	3	144	0	0	0	0	0	0		0	0	0	
300	CCP330522	3	122	0	0	0	0	11	0		0	0	0	
301	CCP330522	3	134	0	0	0	0	10	0		0	0.04	0.04	
302	CCP330522	3	126	0	0	0	0	0	0		0	0	0	
303	CCP330522	2	30	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	0.09	0.09	
304	CCP330522	3	64	0	0	0	0	0	0		0	0.04	0.04	
305	CCP330522	2	82	0	0	0	0	0	0		0	0.05	0.05	
306	CCP330522	2	88	0	0	0	0	36	0		0	0.03	0.03	
307	CCP330522	2	85	0	0	0	0	0	0		0	0.01	0.01	
308	CCP330522	3	101	0	0	0	0	0	0		0	0	0	
309	CCP330522	3	103	0	0	0	0	0	0		0	0	0	
310	CCP330522	3	104	0	0	0	0	0	0		0	0	0	
311	CCP330522	3	53	0	0	0	0	0	0		0	0.04	0.04	
312	CCP330522	3	56	0	0	0	0	0	0		0	0.03	0.03	
313	CCP330522	5	48	0	0	0	0	39	0		0	0.03	0.03	
314	CCP330522	3	66	0	0	0	0	0	0		0	0.02	0.02	
315	CCP330522	3	74	0	0	0	0	0	0		0	0.02	0.02	
316	CCP330522	2	77	0	0	0	0	0	0		0	0	0	
317	CCP330522	3	87	0	0	0	0	0	0		0	0	0	
318	CCP330522	3	93	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
319	CCP330522	3	92	0	0	0	0	0	0		0	0	0	
320	CCP330522	3	104	0	0	0	0	0	0		0	0	0	
321	CCP330522	3	103	0	0	0	0	0	0		0	0	0	
322	CCP330522	3	104	0	0	0	0	0	0		0	0	0	
323	CCP330522	3	98	0	0	0	0	0	0		0	0	0	
324	CCP330522	3	122	<0.01	<0.001	0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
325	CCP330522	3	106	<0.01	<0.001	0.002	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
326	CCP330522	3	110	<0.01	<0.001	0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
327	CCP330522	2	104	0	0	0	0	0	0		0	0	0	
328	CCP330522	2	114	0	0	0	0	30	0		0	0.02	0.02	
329	CCP330522	2	105	0	0	0	0	0	0		0	0.01	0.01	
330	CCP330522	2	120	0	0	0	0	5	0		0	0.01	0.01	

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
284	CCP330522				0								
285	CCP330522												
286	CCP330522	0	0.03		0						0		
287	CCP330522	0.1	0.4		0						0.1		
288	CCP330522	0.5	0		0						0.5		
289	CCP330522												
290	CCP330522	0.1	0.1		0		<0.001				0.1		
291	CCP330522	0.1	0.08		5		<0.001				0.1		
292	CCP330522	0.4	0		4		<0.001				0.4		
293	CCP330522	0.02	0.28				<0.001				0.7		
294	CCP330522	<0.01	0.16				<0.001				0.6		
295	CCP330522	0.2	0.17		2	292	<0.001				0.2		
296	CCP330522	0.1	0.08		0	358	<0.001				0.1		
297	CCP330522	0.4	0.12		0	469	<0.001				0.4		
298	CCP330522	0.8	0.07		2	257	<0.001				0.8		
299	CCP330522	0.2	0		0	322	0	0	7		0.2		
300	CCP330522	0.4	0.15		0	283	0	0	5		0.4		
301	CCP330522	0.5	0.26		0	306	0	0	5		0.5		
302	CCP330522	1.9	0		0	300	0	0	3		1.9		
303	CCP330522	2.5	0.69		1		<0.001				2.4		
304	CCP330522	0.6	0.2		3	173	0	0	3		0.6		
305	CCP330522	0.4	0.17		3	214	0	0	4		0.3		
306	CCP330522	0.3	0.26		5	227	0	0	3		0.3		
307	CCP330522	0.4	0.18		2	227	0	0	4		0.4		
308	CCP330522	0.2	0.17		0	254	0	0	4		0.2		
309	CCP330522	0.2	0.16		0	263	0	0	4		0.2		
310	CCP330522	0	0.15		0	267	0	0	4		0		
311	CCP330522	0.5	0.36		3	135	0	0	6		0.5		
312	CCP330522	0.5	0.28		0	165	0	0	5		0.5		
313	CCP330522	0.2	0.08		2	359	0	0	11		0.2		
314	CCP330522	0.1	0.2		0	176	0	0	3		0.1		
315	CCP330522	0	0.15		0	194	0	0	3		0		
316	CCP330522	0	0.17		0	204	0	0	3		0		
317	CCP330522	0.1	0.22		2	224	0	0	2		0.1		
318	CCP330522	0.2	0.15		3		<0.001				0.2		
319	CCP330522	0.2	0.12		3	240	0	0	2		0.2		
320	CCP330522	0.1	0.18		0	262	0	0	3		0.1		
321	CCP330522	0.2	0.18		0	262	0	0	3		0.2		
322	CCP330522	0.2	0.16		0	262	0	0	3		0.2		
323	CCP330522	0	0.16		0	255	0	0	2		0		
324	CCP330522	0.2	0.17		2		<0.001				0.2		
325	CCP330522	0.2	0.09		2		<0.001				0.2		
326	CCP330522	0.2	0.07		1		<0.001				0.2		
327	CCP330522	0.1	0.08		1	267	0	0	4		0.1		
328	CCP330522	0.1	0.08		2	281	0	0	3		0.1		
329	CCP330522	0.2	0.14		2	274	0	0	4		0.2		
330	CCP330522	0	0.1		2	296	0	0	4		0		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
331	CCP330522	25/03/2013 00:00:00	8.36			1060	54	578	0.4	152					0
332	CCP330522	26/03/2013 00:00:00	8.29			1060	55	585	0.4	153					0
333	CCP330522	29/03/2013 00:00:00	8.32			1090	54	618	0.4	157					0
334	CCP330522	30/03/2013 00:00:00	8.33			1100	55	629	0.4	159					0
335	CCP330522	31/03/2013 00:00:00	8.37			1120	56	645	0.4	160					0
336	CCP330522	01/04/2013 00:00:00	8.32			1130	57	626	0.4	165					0
337	CCP330522	07/04/2013 00:00:00	8.26			1240	77	698		201					<0.01
338	CCP330522	09/04/2013 00:00:00	8.25			1250	82	715	0.4	202					20
339	CCP330522	11/04/2013 00:00:00	8.31			1300	71	715		204					<0.01
340	CCP330522	12/04/2013 00:00:00	8.19			1440	140	819		254					0.03
341	CCP330522	13/04/2013 00:00:00	8.31			1150	77	644		176					<0.01
342	CCP330522	14/04/2013 00:00:00	8.3			1140	58	619		187					0.02
343	CCP330522	19/04/2013 00:00:00	8.36			964	55	684	0.4	162					10
344	CCP330522	22/04/2013 00:00:00	8.36			1160	58	667	0.4	173					0
345	CCP330522	27/04/2013 00:00:00	8.28			1260	72	678		209					<0.01
346	CCP330522	12/05/2013 00:00:00	8.21	8.21		1410	119	794	0.3	250					0
347	CCP330522	18/05/2013 00:00:00	8.51			1490	111	819		252					<0.01
348	CCP330522	18/06/2013 00:00:00	8.24			1600	119	1000	0.6	294					0
349	CCP330522	26/06/2013 00:00:00	8.26			1670	130	1000	0.6	308					0
350	CCP330522	11/07/2013 00:00:00	8.23			1900	144	1010	0.4	360					0
351	CCP330522	14/07/2013 00:00:00	8.24			1930	149	1030	0.4	367					0
352	CCP330522	02/08/2013 00:00:00	8.44			2080	240	1200	0.3	400					0
353	CCP330522	04/08/2013 00:00:00	8.47			2090	263	1170		398					<0.01
354	CCP330522	12/08/2013 00:00:00	8.43			2150	184	1230	0.3	411					780
355	CCP330522	20/08/2013 00:00:00	8.38			2260	275	1420	0.4	428					0
356	CCP330522	18/11/2013 00:00:00	8.33			4680	909	3270							<0.01
357	CCP330522	20/11/2013 00:00:00	8.25			4610	822	3140	0.3	772	0	0	431	431	
358	CCP330522	14/04/2014 10:00:00	8.59			3160	598		0.3						<10
359	CCP330522	06/05/2014 09:00:00	8.5			1190	72		0.3						<10
360	CCP330522	12/12/2014 00:00:00	7.49			678	112		0.1						110
361	CCP330522	13/12/2014 00:00:00	7.47			147	12		0						110
362	CCP330522	22/01/2015 00:00:00	8.32			2300	295		0.3						0
363	CCP330522	23/01/2015 00:00:00	7.8			289	24		0.2						0.04
364	CCP330522	26/01/2015 00:00:00	8			506	32		0.3						40
365	CCP330522	29/01/2015 00:00:00	8.42			1040	83		0.3						10
366	CCP330522	01/02/2015 00:00:00	8.4			667	45		0.2						0
367	CCP330522	02/02/2015 00:00:00	8.4			806	56		0.3						0
368	CCP330522	03/02/2015 00:00:00	8.46			934	75		0.3						0
369	CCP330522	04/02/2015 00:00:00	8.09			991	80		0.3						0
370	CCP330522	05/02/2015 00:00:00	8.1			1090	89		0.3						0
371	CCP330522	06/02/2015 00:00:00	8.13			1110	77		0.3						0
372	CCP330522	07/02/2015 00:00:00	8.48			1160	97		0.3						0
373	CCP330522	08/02/2015 00:00:00	8.46			1140	94		0.4						0
374	CCP330522	09/02/2015 00:00:00	8.47			1130	86		0.3						0
375	CCP330522	10/02/2015 00:00:00	8.48			1130	84		0.3						0
376	CCP330522	11/02/2015 00:00:00	8.44			1140	87		0.3						20
377	CCP330522	12/02/2015 00:00:00	8.22			1170	96		0.4						0

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
331	CCP330522	2	50	0	62	0	3	0	0	0	35	48	1	0
332	CCP330522	2	0	0	61	0	0	0	0	0	34	0	1	0
333	CCP330522	2	80	0	61	0	0	0	0	0	34	12	1	0
334	CCP330522	2	80	0	62	0	0	0	0	0	35	0	2	0
335	CCP330522	2	90	0	63	0	0	0	0	0	36	7	1	0
336	CCP330522	2	70	0	64	0	5	0	0	0	36	14	1	0
337	CCP330522	0.002	0.05	0.05	70	<0.001	0.001	<0.001	<0.05	<0.001	42	0.03	0.001	0.002
338	CCP330522	2	70	0	73	0	4	0	0	0	44	18	1	2
339	CCP330522	0.002	0.06	0.06	68	<0.001	0.001	<0.001	<0.05	<0.001	42	0.008	0.001	<0.001
340	CCP330522	0.002	0.08	0.08	80	<0.001	0.001	<0.001	<0.05	<0.001	47	0.157	0.001	<0.001
341	CCP330522	0.002	0.07	0.07	66	<0.001	<0.001	<0.001	<0.05	<0.001	38	0.031	0.001	<0.001
342	CCP330522	0.002	0.06	0.06	67	<0.001	<0.001	<0.001	<0.05	<0.001	39	0.026	0.001	<0.001
343	CCP330522	2	60	0	62	0	3	0	0	0	37	40	2	0
344	CCP330522	2	60	0	65	0	1	0	0	0	38	48	1	0
345	CCP330522	0.002	0.05	0.05	64	<0.001	0.042	<0.001	<0.05	<0.001	38	0.029	0.001	<0.001
346	CCP330522	0	0.07	0	76	0	0	0	0	0	46	0.03	0	0
347	CCP330522	0.002	0.07	0.07	74	<0.001	0.002	<0.001	<0.05	<0.001	44	0.037	<0.001	0.001
348	CCP330522	0	80	0	76	0	0	0	0	0	52	43	1	0
349	CCP330522	1	60	0	84	0	2	0	0	0	54	6	1	0
350	CCP330522	0	0	0	89	0	2	0	0	0	58	4	1	0
351	CCP330522	0	90	0	87	0	2	0	0	0	57	6	1	0
352	CCP330522	1	90	0	91	0	1	0	0	0	65	9	0	0
353	CCP330522	<0.001	0.09	0.09	94	<0.001	0.002	<0.001	<0.05	<0.001	66	0.047	<0.001	0.002
354	CCP330522	1	110	0.1	96	0	7	24	4470	0	70	511	0	48
355	CCP330522	1	120	0	102	0	2	0	0	0	72	7	0	1
356	CCP330522	<0.001				<0.001	0.002	<0.001		<0.001		0.054	0.001	0.002
357	CCP330522	2	220	0	162	0	2			0	169	18	1	2
358	CCP330522	2	180	<0.1		<1	2	<1	<50	<1		10	<1	1
359	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		6	<1	<1
360	CCP330522	0	50	0		0	2	0	90	0		0	0	2
361	CCP330522	0	0	0		0	2	0	60	0		0	0	2
362	CCP330522	3	140	0		0	0	0	0	0		0	2	1
363	CCP330522	0	0	0		0	0	0	0.08	0		0	0	0
364	CCP330522	0	0	0		0	1	0	80	0		3	0	0
365	CCP330522	1	0	0		4	2	0	0	0		71	0	0
366	CCP330522	0	0	0		0	0	0	0	0		0.06	0	0
367	CCP330522	2	0	0		2	1	0	0	0		0	0	0
368	CCP330522	2	0	0		0	0	0	0	0		0	1	1
369	CCP330522	2	50	0		0	1	0	0	0		105	1	0
370	CCP330522	2	50	0		0	1	0	0	0		59	1	0
371	CCP330522	2	50	0		0	0	0	0	0		46	1	0
372	CCP330522	2	60	0		0	3	0	0	0		36	1	0
373	CCP330522	2	60	0		0	0	0	0	0		28	1	0
374	CCP330522	2	0	0		5	2	0	0	0		52	1	1
375	CCP330522	3	50	0		2	0	0	0	0		45	1	0
376	CCP330522	2	0	0		2	3	0	0	0		28	1	1
377	CCP330522	2	60	0		0	0	0	0	0		0	2	2

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
331	CCP330522	3	119	0	0	0	0	0	0		0	0.01	0.01	
332	CCP330522	3	118	0	0	0	0	0	0		0	0.01	0.01	
333	CCP330522	3	119	0	0	0	0	0	0		0	0	0	
334	CCP330522	3	122	0	0	0	0	0	0		0	0	0	
335	CCP330522	3	122	0	0	0	0	0	0		0	0	0	
336	CCP330522	3	126	0	0	0	0	0	0		0	0	0	
337	CCP330522	3	151	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
338	CCP330522	3	158	0	0	0	0	11	0		0	0	0	
339	CCP330522	3	156	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	<0.01	<0.01	
340	CCP330522	4	172	<0.01	<0.001	0.001	<0.01	0.007	<0.0001		<0.01	0.02	0.02	
341	CCP330522	3	135	<0.01	<0.001	<0.001	<0.01	<0.005	<0.0001		<0.01	0.03	0.03	
342	CCP330522	3	133	<0.01	<0.001	<0.001	<0.01	0.007	<0.0001		<0.01	0.02	0.02	
343	CCP330522	3	132	0	0	0	0	7	0		0	0	0	
344	CCP330522	3	142	0	0	0	0	5	0		0	0	0	
345	CCP330522	3	136	<0.01	<0.001	<0.001	<0.01	0.012	<0.0001		<0.01	<0.01	<0.01	
346	CCP330522	3	179	0	0	0	0	0.01	0		0	0.01	0.01	
347	CCP330522	3	158	<0.01	<0.001	0.001	<0.01	0.007	<0.0001		<0.01	0.01	0.01	
348	CCP330522	3	207	0	0	3	0	0	0		0	0	0	
349	CCP330522	3	220	0	0	1	0	42	0		0	0	0	
350	CCP330522	3	251	0	0	2	0	23	0		0	0	0	
351	CCP330522	3	243	0	0	2	0	14	0		0	0	0	
352	CCP330522	3	279	0	0	2	0	5	0		0	0	0	
353	CCP330522	3	284	<0.01	<0.001	0.002	<0.01	0.017	<0.0001		<0.01	<0.01	<0.01	
354	CCP330522	4	297	0	0	2	0	148	0		0	0	0	
355	CCP330522	4	316	0	0	2	0	15	0		0	0	0	
356	CCP330522			<0.01	<0.001	0.003	<0.01	0.013	<0.0001					
357	CCP330522	7	655	0	0	3			0					
358	CCP330522			<10	<1	2	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	10.80
359	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03	<0.01	<0.01	<0.01	8.9
360	CCP330522			0	0	0	0	0	0	0.07	0	0.07	0.07	6.6
361	CCP330522			0	0	0	0	0	0	0.04	0	0.12	0.12	6
362	CCP330522			0	0	0	0	0	0	0.02	0	0.01	0.01	4.4
363	CCP330522			0	0	0	0	0	0		0	0.28	0.28	
364	CCP330522			0	0	0	0	0	0	0	0	0.23	0.23	3.6
365	CCP330522			0	0	0	0	14	0	0.03	0	0.09	0.09	5.6
366	CCP330522			0	0	0	0	0.01	0	0.01	0	0.01	0.01	7.7
367	CCP330522			0	0	0	0	0	0	0.07	0	0	0	7
368	CCP330522			0	0	0	0	0	0	0.03	0	0	0	6.6
369	CCP330522			0	0	0	0	0	0	0.02	0	0	0	6.1
370	CCP330522			0	0	0	0	7	0	0.03	0	0.07	0.07	8.2
371	CCP330522			0	0	0	0	0	0	0.01	0	0	0	8.7
372	CCP330522			0	0	0	0	0	0	0.04	0.01	0	0.01	6.5
373	CCP330522			0	0	0	0	0	0	0.02	0	0	0	6.5
374	CCP330522			0	0	0	0	16	0	0.02	0	0	0	9.1
375	CCP330522			0	0	0	0	8	0	0.02	0	0	0	9.5
376	CCP330522			0	0	0	0	44	0	0.02	0	0	0	10.20
377	CCP330522			0	0	0	0	0	0	0.05	0	0	0	8.8

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
331	CCP330522	0.2	0.14		2	299	0	0	4		0.2		
332	CCP330522	0.2	0.14		4	292	0	0	4		0.2		
333	CCP330522	0.2	0.06		3	292	0	0	4		0.2		
334	CCP330522	0.1	0.08		3	299	0	0	5		0.1		
335	CCP330522	0.2	0.06		3	306	0	0	4		0.2		
336	CCP330522	0	0.07		3	308	0	0	5		0		
337	CCP330522	0.2	0.11		2		<0.001				0.2		
338	CCP330522	0.2	0.09		2	363	0	0	4		0.2		
339	CCP330522	0.3	0.11		3		<0.001				0.3		
340	CCP330522	0.2	<0.01		8		<0.001				0.2		
341	CCP330522	0.3	0.09		8		<0.001				0.3		
342	CCP330522	0.2	0.02		8		<0.001				0.2		
343	CCP330522	0.3	0.08		2	307	0	0	6		0.3		
344	CCP330522	0.2	0.06		2	319	0	0	5		0.2		
345	CCP330522	0.2	0.09		8		<0.001				0.2		
346	CCP330522	0.1	0.06		0	379	<0.001				0.1		
347	CCP330522	0.3	<0.01		<1		<0.001				0.3		
348	CCP330522	0.1	0.04		5	404	0	0	10		0.1		
349	CCP330522	0.1	0.04		7	432	0	0	7		0.1		
350	CCP330522	0	0.02		0	461	0	0	9		0		
351	CCP330522	0	0.02		0	452	0	0	9		0		
352	CCP330522	0.3	0		0	495	0	0	10		0.3		
353	CCP330522	0.4	0.01		<1		<0.001				0.4		
354	CCP330522	0	0		0	528	0	2	15		0		
355	CCP330522	0.3	0.08		2	551	0	0	8		0.3		
356	CCP330522				<1		<0.001						
357	CCP330522						0						
358	CCP330522	0.4	0.02			628					0.4		
359	CCP330522	0.2	0.03			284					0.2		
360	CCP330522	12.6	2.58			101					12.5		
361	CCP330522	1.4	0.36			37					1.3		
362	CCP330522	0.9	0.13			468					0.9		
363	CCP330522	2	0.66	5.3		83					1700		
364	CCP330522	1.1	0.4			44					0.9		
365	CCP330522	0.7	0.15	5.6		216					600		
366	CCP330522	0.4	0.16	7.7		173					400		
367	CCP330522	0.5	0.14	7		207					500		
368	CCP330522	0.4	0.09	6.6		236					400		
369	CCP330522	0.4	0.1	6.1		254					400		
370	CCP330522	0.5	0.09	8.2		254					400		
371	CCP330522	0.4	0.08	8.7		300					400		
372	CCP330522	0.4	0.07	6.5		300					400		
373	CCP330522	0.4	0.07	6.5		304					400		
374	CCP330522	0.4	0.06	9.1		295					400		
375	CCP330522	0.4	0.07	9.5		286					400		
376	CCP330522	0.5	0.06	10.2		190					500		
377	CCP330522	0.4	0.06	8.8		280					400		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
378	CCP330522	13/02/2015 00:00:00	8.22			1160	87		0.4						0
379	CCP330522	14/02/2015 00:00:00	8.18			1180	94		0.4						0
380	CCP330522	15/02/2015 00:00:00	8.28			1190	92		0.4						0
381	CCP330522	16/02/2015 00:00:00	8.46			1220	95		0.3						0
382	CCP330522	17/02/2015 00:00:00	8.46			1230	97		0.4						0
383	CCP330522	18/02/2015 00:00:00	8.42			1250	97		0.4						0
384	CCP330522	19/02/2015 00:00:00	8.43			1240	98		0.4						0
385	CCP330522	20/02/2015 00:00:00	8.05	8.05		1250	102		0.5						0
386	CCP330522	21/02/2015 00:00:00	8.15	8.15		1260	98		0.3						20
387	CCP330522	22/02/2015 00:00:00	8.28	8.28		1280	92		0.4						0
388	CCP330522	23/02/2015 00:00:00	8.3	8.3		1290	99		0.4						0
389	CCP330522	24/02/2015 00:00:00	8.27	8.27		1300	100		0.4						0
390	CCP330522	25/02/2015 00:00:00	8.04	8.04		881	97		0.3						0
391	CCP330522	26/02/2015 00:00:00	8.11	8.11		1010	144		0.3						0
392	CCP330522	27/02/2015 00:00:00	8.17	8.17		994	142		0.2						0
393	CCP330522	28/02/2015 00:00:00	7.94	7.94		1040	148		0.3						0
394	CCP330522	01/03/2015 00:00:00	8.11	8.11		966	135		0.2						0
395	CCP330522	02/03/2015 00:00:00	8.1	8.1		996	136		0.2						50
396	CCP330522	03/03/2015 00:00:00	7.98			1050									
397	CCP330522	04/03/2015 00:00:00	8.18	8.18		1080	131		0.2						0
398	CCP330522	05/03/2015 00:00:00	8.21	8.21		1080	138		0.2						0
399	CCP330522	06/03/2015 00:00:00	8.01	8.01		1110	135		0.2						0
400	CCP330522	07/03/2015 00:00:00	8.29	8.29		1160	136		0.3						
401	CCP330522	08/03/2015 00:00:00	8.32	8.32		1190	133		0.3						
402	CCP330522	09/03/2015 00:00:00	8.21	8.21		1220	155		0.2						0
403	CCP330522	10/03/2015 00:00:00	8	8		1170	158		0.2						0
404	CCP330522	12/03/2015 00:00:00	8.31	8.31		1310	146		0.3						
405	CCP330522	13/03/2015 00:00:00	8.34	8.34		1390	159		0.3						
406	CCP330522	14/03/2015 00:00:00	8.37	8.37		1390	158		0.3						
407	CCP330522	15/03/2015 00:00:00	8.34	8.34		1410	164		0.4						
408	CCP330522	16/03/2015 00:00:00	8.06	8.06		1450	181		0.5	240					
409	CCP330522	18/03/2015 00:00:00	8.16	8.16		1570	202		0.3	248					
410	CCP330522	19/03/2015 00:00:00	8.27	8.27		1540	194		0.3	248					
411	CCP330522	20/03/2015 00:00:00	8.24	8.24		1550	197		0.3	251					
412	CCP330522	12/01/2016 07:40:00	7.93	6.82	470.8	480	59	332	0.2	61	0	0	79	79	40
413	CCP330522	05/02/2016 21:19:00					24	446		23					120
414	CCP330522	06/02/2016 01:19:00	7.64			326	37	344		36					100
415	CCP330522	06/02/2016 03:19:00	7.44			233	24	351		22					170
416	CCP330522	07/02/2016 01:19:00	7.69			411	44	383		59					
417	CCP330522	07/02/2016 15:19:00	7.65			515	56	336		74					130
418	CCP330522	08/02/2016 13:30:00	7.71			228	21	195		18					120
419	CCP330522	19/06/2016 09:58:00	7.45			207	22		0.2						260
420	CCP330522	19/06/2016 11:58:00	7.6			184	20		0.2						390
421	CCP330522	19/06/2016 13:58:00	7.58			188	20		0.2						240
422	CCP330522	15/01/2017 12:00:00	7.97			369	41	254	0.2	34	0	0	80	80	20
423	CCP330522	06/03/2017 01:48:00	7.7			162	12	410	0.2	9	0	0	60	60	100
424	CCP330522	06/03/2017 03:35:00	7.74			146	11	386	0.2	8	0	0	56	56	140

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
378	CCP330522	2	60	0		0	0	0	0	0		0	1	0
379	CCP330522	2	50	0		0	0	0	0	0		0	1	2
380	CCP330522	2	50	0		0	0	0	0	0		0	1	0
381	CCP330522	2	70	0		0	0	0	0	0		0	1	0
382	CCP330522	2	0	0		0	0	0	0	0		0	1	0
383	CCP330522	2	60	0		0	0	0	0	0		0	1	0
384	CCP330522	0	0	0		0	0	0	0	0		0	0	0
385	CCP330522	2	80	0		0	0	0	0	0		0	2	0
386	CCP330522	2	70	0		0	2	0	0	0		6	1	2
387	CCP330522	2	60	0		0	0	0	0	0		1	1	1
388	CCP330522	2	80	0		0	0	0	0	0		0	2	1
389	CCP330522	2	60	0		0	0	0	0	0		0	2	1
390	CCP330522	1	0	0		0	0	0	0	0		0	0	1
391	CCP330522	1	0	0		0	0	0	0	0		0	0	2
392	CCP330522	2	0	0		0	0	0	0	0		0	0	2
393	CCP330522	2	0	0		0	0	0	0	0		1	0	2
394	CCP330522	2	50	0		0	0	0	0	0		14	0	2
395	CCP330522	1	60	0		0	2	0	100	0		30	0	2
396	CCP330522													
397	CCP330522	2	60	0		0	0	0	0	0		42	0	2
398	CCP330522	2	0	0		0	0	0	0	0		0	1	2
399	CCP330522	2	0	0		0	0	0	0	0		0	1	2
400	CCP330522													
401	CCP330522													
402	CCP330522	2	70	0		0	0	0	0	0		13	1	0
403	CCP330522	2	0	0		0	0	0	0	0		1	1	0
404	CCP330522													
405	CCP330522													
406	CCP330522													
407	CCP330522													
408	CCP330522				65						40			
409	CCP330522				33						17			
410	CCP330522				53						32			
411	CCP330522				29						16			
412	CCP330522	0	0	0		0	1	0	130	0		2	0	1
413	CCP330522	0	0	0	25	0	11	0	0	0	7	65	0	0
414	CCP330522	0	0	0.1	22	0	14	0	120	2	7	42	0	4
415	CCP330522	0	0	0.1	19	1	10	0	140	2	5	54	0	3
416	CCP330522				28						10			
417	CCP330522	0	0	0.1	34	0	14	0	130	3	12	25	0	5
418	CCP330522	0	0	0	19	0	14	0	130	2	7	16	0	4
419	CCP330522	0	0	0		0	3	0	180	0		0	0	2
420	CCP330522	0	0	0		0	2	0	280	0		0	0	2
421	CCP330522	0	0	0		0	2	0	190	0		0	0	2
422	CCP330522	0	0	0	32	0	1	0	60	0	8	0	0	1
423	CCP330522	0	0	0	16	0	1	0	90	0	3	0	0	0
424	CCP330522	0	0	0	15	0	1	0	120	0	3	0	0	0

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
378	CCP330522			0	0	0	0	0	0	0.03	0	0	0	7.1
379	CCP330522			0	0	0	0	0	0	0.04	0	0	0	7.3
380	CCP330522			0	0	0	0	0	0	0.04	0	0	0	9.4
381	CCP330522			0	0	0	0	0	0	0.03	0	0	0	7.7
382	CCP330522			0	0	0	0	0	0	0.02	0	0	0	8.1
383	CCP330522			0	0	0	0	0	0	0.03	0	0	0	8.6
384	CCP330522			0	0	0	0	0	0	0.03	0	0	0	6.6
385	CCP330522			0	0	0	0	0	0	0.06	0	0	0	8.2
386	CCP330522			0	0	0	0	14	0	0.09	0	0	0	8.5
387	CCP330522			0	0	0	0	0	0	0.03	0	0	0	7.7
388	CCP330522			0	0	0	0	0	0	0.02	0	0	0	7
389	CCP330522			0	0	0	0	0	0	0.04	0	0	0	6.4
390	CCP330522			0	0	0	0	0	0	0.06	0	40	40	6.6
391	CCP330522			0	0	0	0	0	0	0.03	0	0	0	6.5
392	CCP330522			0	0	0	0	0	0	0.03	0	140	140	6.5
393	CCP330522			0	0	0	0	0	0	0.04	0	0	0	6.6
394	CCP330522			0	0	0	0	0	0	0.05	0	0	0	8.9
395	CCP330522			0	0	0	0	15	0	0.04	0	0	0	8.2
396	CCP330522													
397	CCP330522			0	0	0	0	0	0	0.07	0	0	0	7.9
398	CCP330522			0	0	0	0	0	0	0.06	0	0	0	8.3
399	CCP330522			0	0	0	0	0	0	0.02	0	0	0	6.6
400	CCP330522									0.04	0	0	0	6.7
401	CCP330522									0.04	0	0	0	9.3
402	CCP330522			0	0	0	0	0	0	0.03	0	0	0	8.2
403	CCP330522			0	0	0	0	0	0	0.04	0	0	0	5.9
404	CCP330522									0.04	0	0	0	6.7
405	CCP330522									0.04	0	0	0	6.6
406	CCP330522									0.02	0	0	0	8.5
407	CCP330522									0.03	0	20	20	8.7
408	CCP330522	4	163							0.03	0	140	140	4.6
409	CCP330522	2	78							0.04	0	0	0	4.8
410	CCP330522	3	134							0.04	0	0	0	6
411	CCP330522	2	70							0.05	0	120	120	5.8
412	CCP330522			0	0	0	0	0	0		0.01	0.28	0.29	8.9
413	CCP330522	3	20	0	0	0	0	77	0		0	0	0	4.3
414	CCP330522	3	32	0	0	0	0	98	0		0	0.07	0.07	6.4
415	CCP330522	2	19	0	0	0	0	80	0		0	0.09	0.09	6.4
416	CCP330522	3	41								0	0.19	0.19	7
417	CCP330522	3	52	0	0	0	0	99	0		0	0	0	4.8
418	CCP330522	3	17	0	0	0	0	92	0		0	0.14	0.14	7.3
419	CCP330522			0	0	0	0	0	0	0	0	140	140	4.2
420	CCP330522			0	0	0	0	0	0	0.01	0	110	110	5.6
421	CCP330522			0	0	0	0	0	0	0.01	0	130	130	4.9
422	CCP330522	3	29	0	0	0	0	0	0		0.18	0.03	0.21	8.9
423	CCP330522	3	11	0	0	0	0	0	0		0	0.18	0.18	3.5
424	CCP330522	3	10	0	0	0	0	0	0		0	0.21	0.21	7.3

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
378	CCP330522	0.4	0.07	7.1		289					400		
379	CCP330522	0.4	0.06	7.3		289					400		
380	CCP330522	0.3	0.05	9.4		302					300		
381	CCP330522	0.2	0.05	7.7		344					200		
382	CCP330522	0.2	0.13	8.1		349					200		
383	CCP330522	0.2	0	8.6		342					200		
384	CCP330522	0.4	0.04	6.6		358					400		
385	CCP330522	400	40	8.2		317					400		
386	CCP330522	500	30	8.5		297					500		
387	CCP330522	400	40	7.7		317					400		
388	CCP330522	400	40	7		321					400		
389	CCP330522	400	40	6.4		317					400		
390	CCP330522	700	100	6.6		209					700		
391	CCP330522	400	60	6.5		238					400		
392	CCP330522	500	30	6.5		241					400		
393	CCP330522	500	50	6.6		248					500		
394	CCP330522	400	40	8.9		219					400		
395	CCP330522	500	60	8.2		219					500		
396	CCP330522												
397	CCP330522	400	30	7.9		255					400		
398	CCP330522	400	20	8.3		265					400		
399	CCP330522	500	40	6.6		265					500		
400	CCP330522	500	60	6.7		219					500		
401	CCP330522	500	30	9.3		253					500		
402	CCP330522	400	70	8.2		291					400		
403	CCP330522	400	30	5.9		276					400		
404	CCP330522	600	30	6.7		291					600		
405	CCP330522	500	20	6.6		309					500		
406	CCP330522	600	80	8.5		313					600		
407	CCP330522	500	30	8.7		315					500		
408	CCP330522	500	40			327					400		
409	CCP330522	400	40	4.8		152					400		
410	CCP330522	300	30			264					300		
411	CCP330522	500	30	5.8		138					400		
412	CCP330522	1.1	0.08		3		0		4	26.7	0.8		
413	CCP330522	6.4	1.91		7	91	0		0		6.4		
414	CCP330522	6.3	1.63		6	84	0		3		6.2		
415	CCP330522	4.5	1.12		7	68	0		2		4.4		
416	CCP330522	3.2	0.74		5	111					3		
417	CCP330522	2.4	0.42		5	134	0		2		2.4		
418	CCP330522	1.4	0.7		2	76	0		0		1.3		
419	CCP330522	1.3	200			63					1200		
420	CCP330522	1.9	300			56					1800		
421	CCP330522	1.3	170			61					1200		
422	CCP330522	3.6	0.78		3	113	0	0	5		3.4		
423	CCP330522	4.7	0.93		2	52	0	0	4		4.5		
424	CCP330522	3.8	0.83		1	50	0	0	3		3.6		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
425	CCP330522	06/03/2017 05:58:00	7.65			162	14	377	0.2	9	0	0	57	57	100
426	CCP330522	07/03/2017 01:00:00	7.42			304	31.088		0.2						130
427	CCP330522	17/03/2017 18:23:00	7.42			392	31	582	0.2	39	0	0	105	105	30
428	CCP330522	17/03/2017 20:23:00	7.25			178	13	554	0.1	12	0	0	55	55	220
429	CCP330522	17/03/2017 22:23:00	7.24			240	21	325	0.1	27	0	0	62	62	130
430	CCP330522	18/03/2017 08:23:00	7.44			399	37	325	0.2	51	0	0	93	93	60
431	CCP330522	19/03/2017 04:23:00	7.23			269	34	458	0.1	33	0	0	53	53	110
432	CCP330522	20/03/2017 08:03:00	7.63			234	25	518	0.2	50	0	0	72	72	60
433	CCP330522	20/03/2017 10:03:00	7.32			226	24	590	0.1	22	0	0	59	59	130
434	CCP330522	23/03/2017 12:06:00	7.43			303	35	310	0.2	25	0	0	90	90	130
435	CCP330522	24/03/2017 08:06:00	7.29			237	22	334	0.3	14	0	0	89	89	190
436	CCP330522	25/03/2017 06:00:00	7.49			324	28	271	0.3	23	0	0	119	119	80
437	CCP330522	31/03/2017 09:37:00	7.62			446	37	305	0.2	47	0	0	131	131	90
438	CCP330522	31/03/2017 13:37:00	7.77			484	41	321	0.3	54	0	0	136	136	100
439	CCP330522	31/03/2017 17:37:00	7.23			315	13	299	0.2	23	0	0	136	136	100
440	CCP330522	31/03/2017 21:37:00	7.86			509	43	329	0.3	58	0	0	134	134	130
441	CCP330522	01/04/2017 09:37:00	7.7			403	37	303	0.2	43	0	0	125	125	40
442	CCP330522	02/04/2017 05:37:00	7.36			266	24	273	0.2	23	0	0	92	92	60
443	CCP330522	02/04/2017 11:50:00	8			684	63	422	0.3	89	0	0	174	174	60
444	CCP330522	03/04/2017 00:00:00	8.13	7.63	795	749	66	445	0.3	102	0	0	193	193	20
445	CCP330522	03/04/2017 17:00:00	8.03			776	67	448	0.3	94	0	0	183	183	70
446	CCP330522	04/04/2017 00:00:00		7.48	840										
447	CCP330522	04/04/2017 16:20:00	8.12			799	67	510	0.3	113	0	0	186	186	10
448	CCP330522	06/04/2017 00:00:00		7.97	900										
449	CCP330522	06/04/2017 14:50:00	8.15			889	75	533	0.3	130	0	0	200	200	0
450	CCP330522	07/04/2017 00:00:00		7.79	987										
451	CCP330522	07/04/2017 13:25:00	8.18			923	78	550	0.3	140	0	0	211	211	0
452	CCP330522	18/05/2017 15:53:00	7.69			250	22	236	0.2	16	0	0	78	78	180
453	CCP330522	18/05/2017 22:53:00	7.66			167	10	276	0.1	8	0	0	68	68	200
454	CCP330522	19/05/2017 13:40:00	7.68			155	9	157	0.1	8	0	0	63	63	440
455	CCP330522	20/05/2017 13:40:00	8.09			405	30	256	0.2	42	0	0	122	122	210
456	CCP330522	21/05/2017 13:40:00	8.16			595	41	330	0.3	57	0	0	181	181	150
457	CCP330522	17/10/2017 11:35:00	8.14			2540	405	1520	0.3	515	<1	<1	245	245	<10
458	CCP330522	19/10/2017 16:00:00	7.87			605	52	373	0.2	83	<1	<1	131	131	70
459	CCP330522	08/11/2017 00:00:00		8.14	1169										
460	CCP330522	08/11/2017 09:30:00	8.25			1160	100		0.3						<10
461	CCP330522	30/11/2017 17:00:00	7.81			1140	101	681	0.3	189	<1	<1	199	199	<10
462	CCP330522	03/12/2017 19:31:00	7.94			783	65	479	0.3	128	<1	<1	140	140	20
463	CCP330522	30/01/2018 18:12:00	7.67			1040	32		0.3						10
464	CCP330522	15/02/2018 18:02:00	7.87			1060	30		0.3						<10
465	CCP330522	20/02/2018 18:05:00	8.02			2340	20		0.3						<10
466	CCP330522	21/02/2018 18:05:00	7.95			2500	29		0.4						<10
467	CCP330522	22/02/2018 02:05:00	7.84			1470	20		0.3						<10
468	CCP330522	17/10/2018 17:33:00	7.77			1210	172		0.2						<10
469	CCP330522	18/10/2018 01:33:00	7.79			944	133		0.2						<10
470	CCP330522	19/10/2018 01:33:00	7.97			1280	204		0.2						<10
471	CCP330522	06/02/2019 08:50:00	7.4	7.21	1359	289	17		0.3						220

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
425	CCP330522	0	0	0	15	0	1	0	90	0	3	0	0	1
426	CCP330522	0	0	0.1		0	1	0	150	0		0	0	1
427	CCP330522	0	0	0	28	0	2	0	0	0	8	0	0	1
428	CCP330522	0	0	0	14	0	1	0	100	0	3	0	0	0
429	CCP330522	0	0	0	15	0	1	0	60	0	4	0	0	0
430	CCP330522	0	0	0	23	0	0	0	70	0	10	0	0	1
431	CCP330522	0	0	0	18	0	0	0	90	0	6	0	0	0
432	CCP330522	0	0	0	17	0	0	0	80	0	4	0	0	0
433	CCP330522	0	0	0	15	0	0	0	110	0	5	0	0	0
434	CCP330522	0	0	0	23	0	2	0	290	0	7	0	0	1
435	CCP330522	0	0	0.1	20	0	0	0	360	0	6	0	0	0
436	CCP330522	0	0	0	26	0	2	0	180	0	8	0	0	0
437	CCP330522	1	0	0	32	0	4	0	110	0	12	1	1	1
438	CCP330522	1	0	0	33	0	2	0	110	0	14	1	1	1
439	CCP330522	1	0	0.3	30	0	6	1	130	1	8	200	0	2
440	CCP330522	1	0	0	34	0	2	0	110	0	14	1	1	1
441	CCP330522	0	0	0	29	0	0	0	110	0	10	0	0	1
442	CCP330522	0	0	0	20	0	2	0	300	0	6	1	0	0
443	CCP330522	1	0	0	43	0	2	0	60	0	19	1	2	1
444	CCP330522	2	0	0	50	0	1	0	0	0	23	4	1	1
445	CCP330522	1	0	0	42	0	0	0	50	0	20	49	0	0
446	CCP330522													
447	CCP330522	2	0	0	51	0	0	0	0	0	23	0	0	1
448	CCP330522													
449	CCP330522	2	0	0	58	0	0	0	0	0	27	0	0	1
450	CCP330522													
451	CCP330522	2	0	0	61	0	0	0	0	0	28	0	0	1
452	CCP330522	0	0	0	20	0	3	0	180	0	6	0	0	0
453	CCP330522	1	0	0	15	0	3	0	190	0	5	2	0	0
454	CCP330522	1	0	0	12	0	4	0	320	0	4	3	0	0
455	CCP330522	1	0	0	26	0	2	0	220	0	12	2	1	0
456	CCP330522	1	0	0	34	0	3	0	160	0	16	2	2	0
457	CCP330522	1	110	<0.1	90	<1	<1	<1	<50	<1	79	<1	2	<1
458	CCP330522	1	<50	<0.1	35	<1	<1	<1	80	<1	16	2	<1	<1
459	CCP330522													
460	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		10	1	<1
461	CCP330522	1	<50	<0.1	39	<1	<1	<1	<50	<1	32	149	<1	2
462	CCP330522	1	<50	<0.1	29	<1	<1	<1	<50	<1	21	2	<1	2
463	CCP330522	2	70	<0.1		<1	<1	2	<50	<1		2000	<1	4
464	CCP330522	2	60	<0.1		<1	<1	<1	<50	<1		2410	<1	2
465	CCP330522	2	<50	<0.1		<1	<1	1	<50	<1		3400	1	<1
466	CCP330522	3	<50	<0.1		<1	<1	2	<50	<1		3990	1	1
467	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		2720	<1	1
468	CCP330522	1	<50	<0.1		<1	1	2	<50	<1		1480	<1	3
469	CCP330522	1	<50	<0.1		<1	7	<1	<50	<1		2	<1	2
470	CCP330522	<1	60	<0.1		<1	6	<1	<50	<1		<1	<1	2
471	CCP330522	4	<50	<0.1		<1	1	<1	190	<1		7	1	1

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	Sample Site	Dissolved Potassium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Dissolved Mercury (µg/L)	Ammonia as N (mg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)	Nitrite + Nitrate as N (mg/L)	Lab Dissolved Oxygen (mg/L)
425	CCP330522	3	11	0	0	0	0	0	0		0	0.2	0.2	4.5
426	CCP330522			0	0	0	0	0	0	180	0	0.22	0.22	8.8
427	CCP330522	3	44	0	0	0	0	0	0		0.01	0.04	0.05	5.1
428	CCP330522	3	16	0	0	0	0	0	0		0.04	0.24	0.28	7.2
429	CCP330522	3	25	0	0	0	0	0	0		0.02	0.27	0.29	7.3
430	CCP330522	3	43	0	0	0	0	0	0		0.02	0.22	0.24	8.1
431	CCP330522	3	27	0	0	0	0	0	0		0.02	0.19	0.21	6.3
432	CCP330522	2	19	0	0	0	0	0	0		0	0.18	0.18	7.7
433	CCP330522	3	22	0	0	0	0	0	0		0	0.21	0.21	8
434	CCP330522	2	26	0	0	0	0	0	0		0.01	0.26	0.27	8.8
435	CCP330522	2	20	0	0	0	0	0	0		0	0.18	0.18	9.3
436	CCP330522	2	30	0	0	0	0	0	0		0.03	0	0.03	9.4
437	CCP330522	4	42	0	0	0	0	0	0		0.06	0.95	1.01	9.5
438	CCP330522	4	48	0	0	0	0	0	0		0.02	0.94	0.96	8.8
439	CCP330522	3	23	0	0	0	0	114	0		0	0	0	5.7
440	CCP330522	4	50	0	0	0	0	0	0		0.01	0.75	0.76	9.5
441	CCP330522	3	41	0	0	0	0	0	0		0	0.1	0.1	11.00
442	CCP330522	3	25	0	0	0	0	0	0		0	0.12	0.12	10.40
443	CCP330522	4	75	0	0	0	0	0	0		0.02	1.31	1.33	10
444	CCP330522	5	81	0	0	0	0	0	0		0.02	1.29	1.31	10.10
445	CCP330522	4	73	0	0	0	0	0	0		0.02	1.26	1.28	9.5
446	CCP330522													
447	CCP330522	4	85	0	0	0	0	0	0		0.02	1.2	1.22	9.3
448	CCP330522													
449	CCP330522	4	96	0	0	0	0	0	0		0.02	0.89	0.91	9.7
450	CCP330522													
451	CCP330522	4	101	0	0	0	0	0	0		0.02	0.64	0.66	9.4
452	CCP330522	3	19	0	0	0	0	0	0		0	0.07	0.07	7.1
453	CCP330522	3	12	0	0	0	0	0	0		0	0.25	0.25	9
454	CCP330522	3	11	0	0	0	0	0	0		0	0.3	0.3	8.2
455	CCP330522	4	43	0	3	0	0	0	0		0	0.36	0.36	9.8
456	CCP330522	4	71	0	0	0	0	0	0		0	0.58	0.58	9.2
457	CCP330522	4	326	<10	<1	1	<10	<5	<0.1		<0.01	<0.01	<0.01	9.4
458	CCP330522	4	63	<10	<1	<1	<10	<5	<0.1		<0.01	0.28	0.28	10.40
459	CCP330522													
460	CCP330522			<10	<1	<1	<10	<5	<0.1	0.08	<10	<10	<10	9.9
461	CCP330522	3	135	<10	<1	<1	<10	94	<0.1		<0.01	0.01	0.01	10.40
462	CCP330522	4	98	<10	<1	<1	<10	20	<0.1		<0.01	<0.01	<0.01	5.1
463	CCP330522			<10	<1	<1	<10	6	<0.1	1.01	<10	<10	<10	4.4
464	CCP330522			<10	<1	<1	<10	<5	<0.1	0.52	<10	<10	<10	3.6
465	CCP330522			<10	<1	<1	<10	<5	<0.1	1.48	<10	<10	<10	8.9
466	CCP330522			<10	<1	<1	<10	<5	<0.1	1.54	<10	<10	<10	9.4
467	CCP330522			<10	<1	<1	<10	<5	<0.1	1.62	<10	<10	<10	7.5
468	CCP330522			<10	<1	<1	<10	<5	<0.1	6.89	0.1	<0.010000000	<0.010000000	5.3
469	CCP330522			<10	<1	<1	<10	<5	<0.1	6.58	1.8	4.29	6.09	7.3
470	CCP330522			<10	<1	1	<10	<5	<0.1	0.87	1.35	2.1	3.45	6.9
471	CCP330522			<10	<1	<1	<10	<5	<0.1	0.1	<0.010000000	0.06	0.06	8.9

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
425	CCP330522	2.8	0.62		4	50	0	0	3		2.6		
426	CCP330522	1	0.15			82					0.8		
427	CCP330522	6	2.29		5	103	0	0	3		6		
428	CCP330522	6.6	1.9		5	47	0	0	2		6.3		
429	CCP330522	2.8	0.76		4	54	0	0	2		2.5		
430	CCP330522	1	0.21		2	99	0	0	4		0.8		
431	CCP330522	1.2	0.45		6	70	0	0	3		1		
432	CCP330522	3.6	1.26		4	59	0	0	3		3.4		
433	CCP330522	2.7	0.69		4	58	0	0	2		2.5		
434	CCP330522	2	0.4		7	86	0	0	3		1.7		
435	CCP330522	1.5	0.44		5	75	0	0	3		1.3		
436	CCP330522	0.4	0.17		5	98	0	0	3		0.4		
437	CCP330522	2.9	0.59		4	129	0	0	2		1.9		
438	CCP330522	1.9	0.25		4	140	0	0	2		0.9		
439	CCP330522	4.8	1.33		3	108	0	0	2		4.8		
440	CCP330522	1.7	0.26		5	142	0	0	3		0.9		
441	CCP330522	0.6	0.1		3	114	0	0	3		0.5		
442	CCP330522	1.2	0.24		4	75	0	0	3		1.1		
443	CCP330522	1.9	0.09		3	186	0	0	4		0.6		
444	CCP330522	2	0.11		2	220	0	0	4		0.7		
445	CCP330522	2.2	0.18		4	187	0	0	4		0.9		
446	CCP330522												
447	CCP330522	1.8	0.24		2	222	0	0	3		0.6		
448	CCP330522												
449	CCP330522	1.5	0.24		3	256	0	0	4		0.6		
450	CCP330522												
451	CCP330522	1.3	0.22		2	268	0	0	4		0.6		
452	CCP330522	3.3	0.66		3	75	0	0	3		3.2		
453	CCP330522	4.2	1.26		2	58	0	0	0		4		
454	CCP330522	2	0.6		3	46	0	0	1		1.7		
455	CCP330522	1.3	0.26		0	114	0	0	2		0.9		
456	CCP330522	1.2	0.19		0	151	0	0	5		0.6		
457	CCP330522	0.3	0.09		<1	550	<1	<1	28		0.3		
458	CCP330522	0.8	0.34		<1	153	<1	<1	3		0.5		
459	CCP330522									30.15			
460	CCP330522	0.4	0.04			273					0.4		
461	CCP330522	45	0.09		3	229	<1	<1	10		45		
462	CCP330522	7.1	0.17		9	159	<1	<1	7		7.1		
463	CCP330522	10.2	0.41			292					10.2		
464	CCP330522	6	0.16			270					6		
465	CCP330522	2.4	0.14			606					2.4		
466	CCP330522	2.1	0.07			638					2.1		
467	CCP330522	2.2	0.14			399					2.2		
468	CCP330522	22.1	4.92			236					22.1		
469	CCP330522	14.8	1.3			221					8.7		
470	CCP330522	5.2	0.34			362					1.8		
471	CCP330522	0.8	0.23			78				26.06	0.7		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
472	CCP330522	06/03/2019 15:50:00	8.08	7.1	2126	631	38		0.3						<10
473	CCP330522	03/04/2019 09:15:00	8.21	7.5	1792	985	66		0.3						<10
474	CCP330522	09/05/2019 09:11:00	8.25	8	1740	992	91		0.3						<10
475	CCP330522	03/07/2019 11:10:00													
476	CCP330522	08/01/2020 12:30:00													
477	CCP330522	05/02/2020 14:30:00	8.28	7.05	2343	1220	181		0.3						<10
478	CCP330522	03/03/2020 16:37:00	8.34	7.03	1073	615	51		0.2						<10
479	CCP330522	07/04/2020 17:37:00	8.5	7.04	676	881	65		0.3						<10
480	CCP330522	06/05/2020 16:35:00													
481	CCP330522	03/06/2020 12:00:00													
482	CCP330522	06/07/2020 01:00:00													
483	CCP330522	05/08/2020 13:10:00													
484	CCP330522	09/10/2020 14:20:00													
485	CCP330522	02/11/2020 08:30:00													
486	CCP330522	08/12/2020 14:30:00													
487	CCP330522	27/12/2020 23:43:00	7.54			332	44		0.2						<10
488	CCP330522	12/01/2021 11:00:00	8.08	6.94	813.2	708	66		0.3						<10
489	CCP330522	09/02/2021 15:10:00	8.37	8.25	1401	1060	100		0.3						<10
490	CCP330522	05/04/2021 01:00:00													
491	CCP330522	31/05/2021 00:00:00													
492	CCP330522	06/07/2021 13:30:00													
493	CCP330522	03/08/2021 12:40:00													
494	CCP330522	06/09/2021 10:50:00													
495	CCP330522	05/10/2021 14:00:00													
496	CCP330522	27/11/2021 03:00:00	7.65	4.73	6250	225	27		0.1						<10
497	CCP330522	28/11/2021 01:00:00	8.01	4.75	6270	578	78		0.1						<10
498	CCP330522	13/12/2021 00:00:00	7.64	7.3	385	541	52		0.2						<10
499	CCP330522	05/01/2022 00:00:00	8.22	7.57	511.2	492	34		0.2						<10
500	CCP330522	01/02/2022 13:45:00	8.42	7.13	578.9	555	40		0.2						<10
501	CCP330522	04/04/2022 00:00:00													
502	CCP330522	05/05/2022 07:40:00	8.23			1400	238		0.3						<10
503	CCP330522	01/06/2022 14:35:00	8.22	7.8	1008	1010	120		0.2						<10
504	CCP330522	02/06/2022 00:00:00	8.22			859	56		0.2						<10
505	CCP330522	04/07/2022 00:00:00	7.77			957	79		0.2						<10
506	CCP330522	13/07/2022 07:20:00	8.13	7.28	631.8	622	42		0.2						<10
507	CCP330522	02/08/2022 14:30:00	8.38	7.92	826.2	816	69		0.2						<10
508	CCP330522	01/09/2022 01:00:00													
509	CCP330522	30/11/2022 00:00:00	8.33			1010	69		0.2						<10
510	CCP330522	07/12/2022 07:30:00	7.99	7.67	694.6	670	50		0.2						<10
511	CCP330522	01/02/2023 00:00:00	8.35			1050	24		0.3						<10
512	CCP330522	01/02/2023 08:00:00	8.18	7.33	873	869	56		0.3						<10
513	CCP330522	04/02/2023 00:00:00	8.04			1500	67		0.3						<10
514	CCP330522	08/03/2023 08:15:00	8.02	7.84	1047	1030	91		0.3						<10
515	CCP330522	04/04/2023 00:00:00	7.7			452	27		0.2						<10
516	CCP330522	03/07/2023 01:00:00													
517	CCP330522	06/09/2023 01:00:00													
518	CCP330522	04/12/2023 00:00:00													

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	**Sample Site**	**Dissolved Arsenic (µg/L)**	**Dissolved Boron (µg/L)**	**Dissolved Cadmium (µg/L)**	**Dissolved Calcium (mg/L)**	**Dissolved Chromium (µg/L)**	**Dissolved Copper (µg/L)**	**Dissolved Cobalt (µg/L)**	**Dissolved Iron (µg/L)**	**Dissolved Lead (µg/L)**	**Dissolved Magnesium (mg/L)**	**Dissolved Manganese (µg/L)**	**Dissolved Molybdenum (µg/L)**	**Dissolved Nickel (µg/L)**
472	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		144	1	1
473	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		166	1	<1
474	CCP330522	1	<50	<0.1		<1	<1	<1	<50	<1		65	<1	1
475	CCP330522													
476	CCP330522													
477	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		102	1	2
478	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		20	1	2
479	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		142	1	2
480	CCP330522													
481	CCP330522													
482	CCP330522													
483	CCP330522													
484	CCP330522													
485	CCP330522													
486	CCP330522													
487	CCP330522	1	<50	<0.1		<1	2	<1	220	<1		2	<1	2
488	CCP330522	4	60	<0.1		<1	<1	<1	<50	<1		79	<1	2
489	CCP330522	4	70	<0.1		<1	<1	<1	<50	<1		168	1	2
490	CCP330522													
491	CCP330522													
492	CCP330522													
493	CCP330522													
494	CCP330522													
495	CCP330522													
496	CCP330522	1	<50	<0.1		<1	2	<1	<50	<1		<1	<1	2
497	CCP330522	2	<50	<0.1		<1	5	<1	<50	<1		<1	<1	2
498	CCP330522	2	<50	<0.1		<1	2	<1	<50	<1		<1	2	2
499	CCP330522	2	60	<0.1		<1	<1	<1	<50	<1		30	<1	2
500	CCP330522	2	50	<0.1		<1	1	<1	<50	<1		6	<1	1
501	CCP330522													
502	CCP330522	2	100	<0.1		<1	<1	<1	<50	<1		72	1	1
503	CCP330522	1	60	<0.1		<1	<1	<1	<50	<1		139	<1	1
504	CCP330522	2	<50	<0.1		<1	2	<1	<50	<1		<1	4	2
505	CCP330522	<1	<50	<0.1		<1	2	<1	<50	<1		18	<1	2
506	CCP330522	2	<50	<0.1		<1	1	<1	<50	<1		12	<1	<1
507	CCP330522	1	<50	<0.1		<1	<1	<1	<50	<1		3	<1	<1
508	CCP330522													
509	CCP330522	3	70	<0.1		<1	<1	<1	<50	<1		<1	1	2
510	CCP330522	3	60	<0.1		<1	<1	<1	<50	<1		<1	2	1
511	CCP330522	3	100	<0.1		<1	2	<1	<50	<1		<1	<1	1
512	CCP330522	2	60	<0.1		<1	<1	<1	<50	<1		23	<1	1
513	CCP330522	2	110	<0.1		<1	1	<1	<50	<1		<1	1	1
514	CCP330522	3	80	0.1		<1	<1	<1	<50	<1		49	<1	2
515	CCP330522	2	50	<0.1		<1	2	<1	<50	<1		5	<1	<1
516	CCP330522													
517	CCP330522													
518	CCP330522													

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
472	CCP330522			<10	<1	<1	<10	<5	<0.1	0.04	<0.010000000	<0.010000000	<0.010000000	9.1
473	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03	<0.010000000	<0.010000000	<0.010000000	8.6
474	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03	<0.010000000	<0.010000000	<0.010000000	9.4
475	CCP330522													
476	CCP330522													
477	CCP330522			<10	<1	<1	<10	5	<0.1	<0.010000000	<0.010000000	<0.010000000	<0.010000000	9.3
478	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03	<0.010000000	<0.010000000	<0.010000000	8.6
479	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.010000000	<0.010000000	<0.010000000	<0.010000000	10
480	CCP330522													
481	CCP330522													
482	CCP330522													
483	CCP330522													
484	CCP330522													
485	CCP330522													
486	CCP330522													
487	CCP330522			<10	<1	<1	<10	<5	<0.1	0.01		1.63	1.75	9
488	CCP330522			<10	<1	<1	<10	<5	<0.1	0.02	0.01	0.29	0.3	7.4
489	CCP330522			<10	<1	<1	<10	<5	<0.1	0.02		<0.01	<0.01	9.4
490	CCP330522													
491	CCP330522													
492	CCP330522													
493	CCP330522													
494	CCP330522													
495	CCP330522													
496	CCP330522			<10	<1	<1	<10	<5	<0.1	0.14		0.54	0.75	8.3
497	CCP330522			<10	<1	<1	<10	<5	<0.1	0.53		0.76	1.17	7.6
498	CCP330522			<10	<1	<1	<10	<5	<0.1	7.48		13.7	13.9	6.7
499	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	8.8
500	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	10
501	CCP330522													
502	CCP330522			<10	<1	1	<10	<5	<0.1	0.02		<0.01	<0.01	6.6
503	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	8.2
504	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03		3.26	3.26	7.2
505	CCP330522			<10	<1	<1	<10	<5	<0.1	0.88		0.01	0.05	6
506	CCP330522			<10	<1	<1	<10	<5	<0.1	0.22		0.14	0.14	10.40
507	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	9
508	CCP330522													
509	CCP330522			<10	<1	<1	<10	<5	<0.1	0.04		0.45	0.95	7.5
510	CCP330522			<10	<1	<1	<10	<5	<0.1	0.05		<0.01	<0.01	6.6
511	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		2.62	2.62	7
512	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		0.01	0.01	8
513	CCP330522			<10	<1	<1	<10	7	<0.1	0.02		1.21	1.21	8.1
514	CCP330522			<10	<1	<1	<10	<5	<0.1	0.05		0.01	0.01	6.6
515	CCP330522			<10	<1	<1	<10	<5	<0.1	0.08		14.3	14.3	9.2
516	CCP330522													
517	CCP330522													
518	CCP330522													

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
472	CCP330522	0.4	0.07			171				27.1	0.4		sample
473	CCP330522	0.3	0.04			282				26.8	0.3		
474	CCP330522	0.4	0.03			294				21.8	0.4		Very low flow
475	CCP330522												sample
476	CCP330522												taken
477	CCP330522	0.4	0.03			264				32.1	0.4		
478	CCP330522	0.6	0.06			158				30.22	0.6		
479	CCP330522	0.5	0.08			229				27.98	0.5		
480	CCP330522												Dry.
481	CCP330522												Dry. No flow.
482	CCP330522												collected. Site
483	CCP330522												collected. Site
484	CCP330522												collected. Site
485	CCP330522												Not sampled.
486	CCP330522												Sampled.
487	CCP330522	2.8	0.26			107					1		
488	CCP330522	0.7	0.11			211				21.39	0.4		flow at time of
489	CCP330522	0.4	0.02			292				37.41	0.4		
490	CCP330522												Dry.
491	CCP330522												
492	CCP330522												below CTF. No
493	CCP330522												collected.
494	CCP330522												collected. Site
495	CCP330522												
496	CCP330522	3	0.76			72				25.3	2.2		composite
497	CCP330522	2.6	0.41			162				26.3	1.4		composite
498	CCP330522	29	2.92			118				27.5	15.1		ISCO Sample
499	CCP330522	0.6	0.03			139				29.45	0.6		slightly turbid
500	CCP330522	0.6	0.1			157				32.59	0.6		
501	CCP330522												ongoing
502	CCP330522	0.9	0.09			439					0.9		
503	CCP330522	0.4	0.03			260				22.88	0.4		Water cloudy
504	CCP330522	9.2	1.68			229					5.9		
505	CCP330522	3.6	0.71			228					3.5		
506	CCP330522	0.6	0.12			176				14.33	0.5		creek flowing
507	CCP330522	0.3	0.03			229				23.53	0.3		flowing
508	CCP330522												Not flowing
509	CCP330522	1.4	0.13			282					0.5		
510	CCP330522	0.5	0.07			188				27.33	0.5		
511	CCP330522	3.3	0.1			269					0.7		
512	CCP330522	0.2	0.03			254				29.16	0.2		
513	CCP330522	2.1	0.13			370					0.9		
514	CCP330522	0.3	0.02			301				28.33	0.3		
515	CCP330522	16	0.3			132					1.7		
516	CCP330522												No access
517	CCP330522												Not flowing
518	CCP330522												flowing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
519	CCP330522	29/01/2024 00:00:00	7.94	7.6	724.4	723	146		0.2						<10
520	CCP330522	06/03/2024 12:30:00	7.75	6.81	489.8	453	37		0.2						<10
521	CCP330522	10/04/2024 08:30:00	8.1	7.05	963.5	888	83		0.3						<10
522	CCP330522	09/05/2024 10:00:00	8.25	7.51	1364	1280	177		0.3						<10
523	CCP330522	05/06/2024 08:30:00	8.38	7.6	1405	1810	310		0.3						<10
524	CCP330522	07/08/2024 10:20:00													
525	CCP330522	04/09/2024 01:00:00													
526	CCP330522	06/11/2024 01:00:00													
527	CCP330522	29/11/2024 00:00:00													
528	CCP330522	15/01/2025 00:00:00	8.21			1180	162		0.3						<10
529	CCP330522	05/03/2025 09:20:00	8.03	7.35	1048	1040	85		0.3						<10
530	CCP330522	10/04/2025 14:00:00	8.04	7.64	502	459	18		0.5						<10
531	CCP330522	08/05/2025 11:30:00	8.21	7.97	364	720	36		0.3						<10
532	CCP330522	12/06/2025 10:20:00	8.34	7.93	1060	995	95		0.3						<10
533	CCP330522	02/07/2025 10:30:00	8.12	7.35	1260	1230	164		0.3						<10
534	CCP330522	06/08/2025 08:40:00	8.33	7.64	1790	1700	293		0.2						<10
535	CCP330522	03/09/2025 08:00:00	8.4	7.45	2340	2420	312		0.3						<10
536	Kerale Dam	09-01-2003 00:00:00	7.4			960									
537	Kerale Dam	18/02/2008 00:00:00	6.21	6.21		414	182	342	0.1	14					0.16
538	Kerale Dam	10/02/2011 00:00:00													
539	Kerale Dam	05/04/2011 00:00:00		4.23		871	423	664	0.2	18					4.38
540	Kerale Dam	11/08/2011 00:00:00	8.08	8.08		717	457	705	0.4	16					3.92
541	Kerale Dam	12/08/2011 00:00:00	4.36	4.36		912	470	826	0.3	13					3.92
542	Kerale Dam	15/08/2011 00:00:00	4.78	4.78		918	484	780	0.4	13					0.41
543	Kerale Dam	18/08/2011 00:00:00	4.86	4.86		886	471	900	0.3	13					3.93
544	Kerale Dam	19/08/2011 00:00:00	4.36	4.36		926	492	713	0.3	12					3.86
545	Kerale Dam	22/08/2011 00:00:00	4.3	4.3		927	478	715	0.3	12					3.93
546	Kerale Dam	23/08/2011 00:00:00	4.37	4.37		929	497	724	0.3	12					3.85
547	Kerale Dam	29/08/2011 00:00:00	4.08	4.08		1050	453	796	0.6	15					3.59
548	Kerale Dam	30/08/2011 00:00:00	4.65	4.65		1020	465	784	0.6	14					3.58
549	Kerale Dam	31/08/2011 00:00:00	4.24	4.24		1020	459	815	0.6	15					3.59
550	Kerale Dam	02/09/2011 00:00:00	4.31	4.31		952	468	727	0.2	12	0	0	0	0	4.29
551	Kerale Dam	15/09/2011 00:00:00	4.38	4.38		928	468	762	0.3	14	0	0	0	0	3.81
552	Kerale Dam	16/09/2011 00:00:00	4.18	4.18		952	467	757	0.2	15	0	0	0	0	3.8
553	Kerale Dam	19/09/2011 00:00:00	4.39	4.39		924	484	707	0.2	16	0				3.71
554	Kerale Dam	20/09/2011 00:00:00	4.46	4.46		933	474	717	0.2	13	0				3.68
555	Kerale Dam	21/09/2011 00:00:00	4.58	4.58		1010	477	723	0.2	15	0	0	0	0	4.04
556	Kerale Dam	22/09/2011 00:00:00	4.61	4.61		1000	476	700	0.3	15	0	0	0	0	3.8
557	Kerale Dam	23/09/2011 00:00:00	4.28	4.28		1010	506	742	0.4	14	0	0	0	0	3.8
558	Kerale Dam	26/09/2011 00:00:00	4.21	4.21		1000	504	741	0.3	15	0	0	0	0	3.57
559	Kerale Dam	28/09/2011 00:00:00	4.32	4.32		1010	504	729	0.3	15	0	0	0	0	3.67
560	Kerale Dam	03/10/2011 00:00:00	4.34	4.34		973	488	734	0.2	10	0	0	0	0	2.65
561	Kerale Dam	25/10/2011 00:00:00	4.88	4.88		1020	496	1030	0.3	14	0	0	1	1	3.32
562	Kerale Dam	27/10/2011 00:00:00	4.42	4.42		1030	497	1040	0.3	15	0	0	0	0	3.11
563	Kerale Dam	01/11/2011 00:00:00	4.43	4.43		998	502	838	0.2	14	0	0	0	0	3.3
564	Kerale Dam	03/11/2011 00:00:00	4.4	4.4		998	503	824	0.2	15	0	0	0	0	3.23
565	Kerale Dam	08/11/2011 00:00:00	4.82	4.82		1050	519	822	0.2	14	0	0	1	1	0

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
519	CCP330522	4	<50	<0.1		<1	2	<1	<50	<1		85	<1	<1
520	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		74	1	1
521	CCP330522	2	70	<0.1		<1	<1	<1	<50	<1		41	<1	1
522	CCP330522	1	80	<0.1		<1	<1	<1	<50	<1		<1	1	1
523	CCP330522	2	120	<0.1		<1	<1	<1	<50	<1		3	1	1
524	CCP330522													
525	CCP330522													
526	CCP330522													
527	CCP330522													
528	CCP330522	4	110	<0.1		<1	<1	<1	<50	<1		73	1	1
529	CCP330522	2	70	<0.1		<1	<1	<1	<50	<1		28	<1	1
530	CCP330522	2	<50	<0.1		<1	<1	<1	<50	<1		<1	<1	<1
531	CCP330522	1	<50	<0.1		<1	<1	<1	<50	<1		9	<1	<1
532	CCP330522	1	<50	<0.1		<1	<1	<1	<50	<1		3	1	1
533	CCP330522	1	60	<0.1		<1	<1	<1	<50	<1		9	<1	<1
534	CCP330522	1	80	<0.1		<1	<1	<1	<50	<1		14	<1	1
535	CCP330522	1	120	<0.1		<1	<1	<1	<50	<1		40	<1	<1
536	Kerale Dam													
537	Kerale Dam	0	0	0	47	0	0	0.02	0	0		1.02	0	0.03
538	Kerale Dam													
539	Kerale Dam	0	0	0	86	0	0.01	0.06	0.28	0	39	2.79	0	0.11
540	Kerale Dam	0	0	0	95	0	0	0.06	0.13	0	42	3.59	0	0.12
541	Kerale Dam	0	0	0	97	0	0	0.06	0.11	0	43	3.34	0	0.12
542	Kerale Dam	0	0	0		0	0.06	0.01	0	0	43	0.35	0	0.01
543	Kerale Dam	0	0	0	96	0	0	0.06	0.13	0	44	3.57	0	0.12
544	Kerale Dam	0	0	0	98	0	0	0.06	0	0	43	3.47	0	0.12
545	Kerale Dam	0	0	0	96	0	0	0.06	0	0	42	3.54	0	0.13
546	Kerale Dam	0	0	0	96	0	0	0.07	0.08	0	43	3.57	0	0.12
547	Kerale Dam	0	0	0	99	0	0	0.06	0.11	0	44	3.3	0	0.11
548	Kerale Dam	0	0	0	98	0	0	0.06	0.14	0	44	3.28	0	0.11
549	Kerale Dam	0	0	0	100	0	0	0.06	0.14	0	45	3.33	0	0.11
550	Kerale Dam	0	0	0	95	0	0	0.07	0.15	0	41	3.7	0	0.13
551	Kerale Dam	0	0	0	100	0	0	0.07	0.16	0	45	3.59	0	0.12
552	Kerale Dam	0	0	0	99	0	0	0.07	0.18	0	44	3.67	0	0.13
553	Kerale Dam	0	0	0	100	0	0	0.07	0.18	0	45	3.66	0	0.13
554	Kerale Dam	0	0	0	101	0	0	0.07	0.06	0	45	3.54	0	0.13
555	Kerale Dam	0	0.05	0	100	0	0	0.06	0.05	0	45	3.4	0	0.12
556	Kerale Dam	0	0	0	100	0	0	0.07	0.14	0	45	3.59	0	0.13
557	Kerale Dam	0	0	0	102	0	0	0.07	0.16	0	44	3.56	0	0.13
558	Kerale Dam	0	0	0	102	0	0	0.07	0.23	0	44	3.61	0	0.13
559	Kerale Dam	0	0	0	100	0	0	0.07	0.3	0	44	3.56	0	0.13
560	Kerale Dam	0	0	0	102	0	0	0.05	0.11	0	46	2.88	0	0.1
561	Kerale Dam	0	0	0	106	0	0	0.06	0.31	0	48	3.88	0	0.13
562	Kerale Dam	0	0	0	107	0	0	0.06	0.34	0	48	3.76	0	0.12
563	Kerale Dam	0	0	0	107	0	0	0.06	0.4	0	48	3.94	0	0.12
564	Kerale Dam	0	0	0	107	0	0	0.06	0.34	0	48	3.85	0	0.12
565	Kerale Dam	0	0	0	107	0	0	0	0	0	48	0	0	0

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
519	CCP330522			<10	<1	<1	<10	<5	<0.1	0.06		0.05	0.05	8.3
520	CCP330522			<10	<1	<1	<10	42	<0.1	0.11		0.16	0.18	8.3
521	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03		<0.01	<0.01	8.4
522	CCP330522			<10	<1	<1	<10	<5	<0.1	0.14		<0.01	<0.01	7.9
523	CCP330522			<10	<1	1	<10	<5	<0.1	0.02		<0.01	<0.01	8.8
524	CCP330522													
525	CCP330522													
526	CCP330522													
527	CCP330522													
528	CCP330522			<10	<1	<1	<10	34	<0.1	0.02		<0.01	<0.01	7.2
529	CCP330522			<10	<1	<1	<10	<5	<0.1	0.1		<0.01	<0.01	8.6
530	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		0.04	0.04	9.8
531	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	7.2
532	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	8.4
533	CCP330522			<10	<1	<1	<10	<5	<0.1	<0.01		<0.01	<0.01	8.4
534	CCP330522			<10	<1	<1	<10	<5	<0.1	0.03		<0.01	<0.01	9.1
535	CCP330522			<10	<1	1	<10	<5	<0.1	0.01		<0.01	<0.01	8.6
536	Kerale Dam													
537	Kerale Dam		12	0	0	0	0	0.05	0		0	0.09	0.09	
538	Kerale Dam													
539	Kerale Dam	6	21	0	0	0	0	0.23	0		0	0	0	
540	Kerale Dam	6	24	0	0	0	0	0.23	0		0	0	0	
541	Kerale Dam	7	26	0	0	0	0	0.22	0		0	0	0	
542	Kerale Dam	7	27	0	0	0	0	0.03	0		0	0	0	
543	Kerale Dam	6	25	0	0	0	0	0.22	0		0	0	0	
544	Kerale Dam	6	24	0	0	0	0	0.23	0		0	0.02	0.02	
545	Kerale Dam	6	24	0	0	0	0	0.23	0		0	0.02	0.02	
546	Kerale Dam	6	24	0	0	0	0	0.23	0		0	0.01	0.01	
547	Kerale Dam	6	26	0	0	0	0	0.2	0		0	0.01	0.01	
548	Kerale Dam	6	26	0	0	0	0	0.21	0		0	0.01	0.01	
549	Kerale Dam	6	26	0	0	0	0	0.21	0		0	0	0	
550	Kerale Dam	5	22	0.02	0	0	0	0.24	0		0	0.03	0.03	
551	Kerale Dam	6	30	0	0	0	0	0.23	0		0	0	0	
552	Kerale Dam	6	26	0	0	0	0	0.23	0		0	0	0	
553	Kerale Dam	7	28	0	0	0	0	0.26	0		0	0.02	0.02	
554	Kerale Dam	7	28	0	0	0	0	0.25	0		0	0	0	
555	Kerale Dam	7	26	0	0	0	0	0.22	0		0	0.02	0.02	
556	Kerale Dam	7	26	0	0	0	0	0.25	0		0	0.01	0.01	
557	Kerale Dam	6	26	0	0	0	0	0.24	0		0	0.02	0.02	
558	Kerale Dam	6	26	0	0	0	0	0.24	0		0	0.01	0.01	
559	Kerale Dam	6	26	0	0	0	0	0.24	0		0	0.02	0.02	
560	Kerale Dam	7	27	0	0	0	0	0.18	0		0	0.02	0.02	
561	Kerale Dam	8	27	0	0	0	0	0.21	0		0	0.01	0.01	
562	Kerale Dam	8	28	0	0	0	0	0.2	0		0	0.01	0.01	
563	Kerale Dam	8	28	0	0	0	0	0.22	0		0	0	0	
564	Kerale Dam	8	28	0	0	0	0	0.21	0		0	0.01	0.01	
565	Kerale Dam	8	29	0	0	0	0	0	0		0	0.01	0.01	

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	**Sample Site**	**Total Nitrogen as N (mg/L)**	**Total Phosphorus as P (mg/L)**	**Dissolved Oxygen (% saturation)**	**Acidity as CaCO3 (mg/L)**	**Total Hardness as CaCO3 (mg/L)**	**Dissolved Antimony (µg/L)**	**Dissolved Beryllium (µg/L)**	**Dissolved Lithium (µg/L)**	**Field Water Temperature (°C)**	**Total Kjeldahl Nitrogen as N (mg/L)**	**Dissolved Silicon (mg/L)**	**Comments/Observations**
519	CCP330522	0.4	0.16			190				29.9	0.4		Muddy
520	CCP330522	1	0.26			119				32.18	0.8		
521	CCP330522	0.3	0.05			244				27.2	0.3		Muddy
522	CCP330522	0.7	0.05			334				25.81	0.7		Nil
523	CCP330522	0.6	0.04			497				18.14	0.6		Muddy
524	CCP330522												Dry
525	CCP330522												Dry
526	CCP330522												Dry
527	CCP330522												Dry
528	CCP330522	0.9	0.06			282					0.9		
529	CCP330522	0.3	0.06			302				28.05	0.3		level high
530	CCP330522	0.4	0.14			135				23.5	0.4		
531	CCP330522	0.4	0.05			206				23.7	0.4		
532	CCP330522	0.4	0.03			301				18.7	0.4		Creek pooled
533	CCP330522	0.3	0.03			330				17	0.3		Muddy
534	CCP330522	0.3	0.03			468				18.6	0.3		Creek pooled
535	CCP330522	0.6	0.04			612				19.1	0.6		in algae
536	Kerale Dam												
537	Kerale Dam	0.5			4								
538	Kerale Dam												
539	Kerale Dam	0.3	0.06		44		0				0.3		
540	Kerale Dam				54								
541	Kerale Dam	0.4			43								
542	Kerale Dam				44								
543	Kerale Dam	0			34								
544	Kerale Dam	0			37								
545	Kerale Dam				36								
546	Kerale Dam				34								
547	Kerale Dam	0			39								
548	Kerale Dam				70								
549	Kerale Dam				42								
550	Kerale Dam	0			7								
551	Kerale Dam				39								
552	Kerale Dam	0.2			37								
553	Kerale Dam				46								
554	Kerale Dam	1.1			40								
555	Kerale Dam				45								
556	Kerale Dam	0.6			54								
557	Kerale Dam				39								
558	Kerale Dam	0.3			33								
559	Kerale Dam				34								
560	Kerale Dam	0.1			31								
561	Kerale Dam				35								
562	Kerale Dam	0.2			29								
563	Kerale Dam				34								
564	Kerale Dam	0.2			41								
565	Kerale Dam				43								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
566	Kerale Dam	02/02/2012 00:00:00	4.14			1080	462	1010	0.2	18	0	0	0	0	2270
567	Kerale Dam	07/02/2012 00:00:00		4.06		1070	498	851	0.2	14	0	0	0	0	2.18
568	Kerale Dam	09/02/2012 00:00:00		4.52		1090	540	822	0.2	15	0	0	0	0	2.27
569	Kerale Dam	14/02/2012 00:00:00		4.46		1040	478	890	0.2	14	0	0	0	0	2.07
570	Kerale Dam	16/02/2012 00:00:00		4.09		1070	471	925	0.2	12	0	0	0	0	2.13
571	Kerale Dam	22/02/2012 00:00:00		4.46		1050	495	834	0.2	14	0				2.05
572	Kerale Dam	06/03/2012 00:00:00	5.07			1090	550	794	0.2	14	0	0	3	3	2040
573	Kerale Dam	14/03/2012 00:00:00		4.41		1120	554	947	0.2	14	0	0	0	0	2.04
574	Kerale Dam	20/03/2012 00:00:00		4.31		1020	527	1130	0.2	15			0		2.94
575	Kerale Dam	21/03/2012 00:00:00		4.62		1020	527	761	0.3	14			5		2.04
576	Kerale Dam	22/03/2012 00:00:00		4.82		978	441	763	0.4	12	0				2.18
577	Kerale Dam	27/03/2012 00:00:00		4.23		1010	355	835	0.2	86	0				2.54
578	Kerale Dam	09/05/2012 00:00:00		4.39		1020	545	880	0.2	12	0				3.32
579	Kerale Dam	16/05/2012 00:00:00		4.34		1060	750	860	0.2	15			0		3.56
580	Kerale Dam	23/05/2012 00:00:00		4.25		1080	521	849	0.2	12	0				3.82
581	Kerale Dam	30/05/2012 00:00:00		4.56		1080	525	817	0.2	14			0		3.75
582	Kerale Dam	07/06/2012 00:00:00		4.26		1010	503	842	0.3	12					3.68
583	Kerale Dam	14/06/2012 00:00:00		4.41		1090	486	840	0.2	18			0		3.79
584	Kerale Dam	20/06/2012 00:00:00		4.31		1050	512	914	0.2	15	0	0	0	0	3.75
585	Kerale Dam	04/07/2012 00:00:00	4.29	4.29		1080	504	1110	0.2	15	0	0	0	0	3.67
586	Kerale Dam	11/07/2012 00:00:00	4.34	4.34		1100	546	921	0.2	15	0	0	0	0	3.48
587	Kerale Dam	18/07/2012 00:00:00		4.3		1050	528	797	0.2	16			0		1.53
588	Kerale Dam	08/08/2012 00:00:00		4.27		1090	580	735	0.3	15	0	0	0	0	3.6
589	Kerale Dam	15/08/2012 00:00:00		3.24		1290	630	944	0.2	14	0	0	0	0	3.71
590	Kerale Dam	22/08/2012 00:00:00	4.29	4.29		1130	601	822	0.2	12			0		4.05
591	Kerale Dam	29/08/2012 00:00:00		4.12		1120	451	881	0.2	9			0		3.56
592	Kerale Dam	05/09/2012 00:00:00		4.36		1080	583	955	0.2	15	0	0	0	0	3.44
593	Kerale Dam	12/09/2012 00:00:00		4.16		1110	455	865	0.2	13			0		3.32
594	Kerale Dam	04/10/2012 00:00:00		4.26		1160	565	925	0.3	17	0	0	0	0	3.44
595	Kerale Dam	10/10/2012 00:00:00		4.28		1150	622	899	0.4	15			0		4.06
596	Kerale Dam	17/10/2012 00:00:00		4.18		1200	625	902	0.3	20	0				3.84
597	Kerale Dam	25/10/2012 00:00:00		4.19		1190	559	921	0.3	14	0				4.07
598	Kerale Dam	31/10/2012 00:00:00		4.23		1250	585	912	0.3	20	0	0	0	0	4.11
599	Kerale Dam	07/11/2012 00:00:00		4.19		1220	631	953	0.3	18	0	0	0	0	4.25
600	Kerale Dam	14/11/2012 00:00:00		4.26		1270	623	958	0.3	15			0		3.44
601	Kerale Dam	21/11/2012 00:00:00		4.24		1300	701	1100	0.2	15	0	0	0	0	3.41
602	Kerale Dam	05/12/2012 00:00:00		4.25		1310	691	983	0.3	20			0		3.22
603	Kerale Dam	20/01/2014 00:00:00		3.96	1945										
604	Kerale Dam	29/05/2014 00:00:00		4.2	2016										
605	Kerale Dam	07/08/2014 00:00:00	4.06	4.06		2360	1,240		0.8						
606	Kerale Dam	13/10/2014 00:00:00	3.85	3.85		2530	1,570		0.7						
607	Kerale Dam	14/10/2014 00:00:00		3.84	2522										
608	Kerale Dam	02/12/2014 00:00:00		3.86	3,153										
609	Kerale Dam	08/01/2015 00:00:00		3.65	3,102										
610	Kerale Dam	04/02/2015 00:00:00	3.85	4.04	2861	2850	1,910	2720	0.1	45	0	0	0	0	10100
611	Kerale Dam	04/03/2015 00:00:00		4.19	2869										
612	Kerale Dam	31/03/2015 00:00:00		4.01	1986										

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
566	Kerale Dam	0	0	0.4	106	0	2	62	160	0	52	4500	0	116
567	Kerale Dam	0	0	0	104	0	0	0.06	0.22	0	54	4.54	0	0.12
568	Kerale Dam	0	0	0	111	0	0	0.07	0.15	0	53	4.66	0	0.12
569	Kerale Dam	0	0	0	105	0	0	0.06	0.15	0	53	4.43	0	0.11
570	Kerale Dam	0	0	0	104	0	0	0.06	0.2	0	52	4.54	0	0.11
571	Kerale Dam	0	0	0	113	0	0	0.06	0.47	0	56	4.37	0	0.11
572	Kerale Dam	0	0	0.3	115	0	2	61	280	0	57	4300	0	111
573	Kerale Dam	0	0.07	0	120	0	0	0.06	0.07	0	59	4.03	0	0.11
574	Kerale Dam	0	0	0	107	0	0	0.09	0.72	0	53	1.86	0	0.12
575	Kerale Dam	0	0	0	107	0	0	0.06	0.1	0	54	3.5	0	0.12
576	Kerale Dam	0	0	0	105	0	0.01	0.06	0	0	53	3.44	0	0.14
577	Kerale Dam	0	0	0	101	0	0	0.06	0.13	0	49	3.5	0	0.1
578	Kerale Dam	0	0	0	108	0	0.01	0.07	0.22	0	54	3.93	0	0.13
579	Kerale Dam	0	0	0	108	0	0.01	0.07	0.25	0	55	3.95	0	0.13
580	Kerale Dam	0	0	0	106	0	0	0.08	0.09	0	55	3.78	0	0.14
581	Kerale Dam	0	0.05	0	107	0	0.01	0.08	0.21	0	55	3.99	0	0.14
582	Kerale Dam	0	0	0	110	0	0	0.08	0.08	0	56	4.24	0	0.14
583	Kerale Dam	0	0	0	110	0	0	0.08	0.15	0	56	4.36	0	0.14
584	Kerale Dam	0	0	0	107	0	0	0.07	0.26	0	54	4.35	0	0.15
585	Kerale Dam	0	0	0	112	0	0	0.07	0.12	0	55	3.9	0	0.13
586	Kerale Dam	0	0.05	0	111	0	0	0.07	0.16	0	56	3.84	0	0.14
587	Kerale Dam	0	0	0	108	0	0.01	0.03	0.08	0	54	1.51	0	0.06
588	Kerale Dam	0	0	0	112	0	0	0.07	0.14	0	56	3.94	0	0.13
589	Kerale Dam	0	0.05	0	115	0	0	0.07	0.09	0	59	4.22	0	0.14
590	Kerale Dam	0	0.05	0	114	0	0	0.08	0.09	0	57	4.67	0	0.15
591	Kerale Dam	0	0	0	118	0	0	0.08	0.17	0	59	4.2	0	0.14
592	Kerale Dam	0	0	0	115	0	0	0.07	0.23	0	58	4.14	0	0.13
593	Kerale Dam	0	0	0	115	0	0	0.07	0.21	0	57	3.97	0	0.12
594	Kerale Dam	0	0.06	0	118	0	0	0.07	0.16	0	59	4.37	0	0.14
595	Kerale Dam	0	0	0	123	0	0	0.08	0.19	0	65	4.64	0	0.14
596	Kerale Dam	0	0.07	0	124	0	0	0.08	0.21	0	64	4.54	0	0.14
597	Kerale Dam	0	0	0	127	0	0.01	0.09	0.5	0	65	4.9	0	0.15
598	Kerale Dam	0	0	0	127	0.01	0.02	0.09	0.08	0	66	4.21	0	0.17
599	Kerale Dam	0	0	0	125	0	0	0.08	1.63	0	64	5.21	0	0.17
600	Kerale Dam	0	0	0	134	0	0	0.08	0.26	0	67	4.84	0	0.15
601	Kerale Dam	0	0	0	131	0	0	0.08	0.19	0	68	4.72	0	0.15
602	Kerale Dam	0	0	0	139	0	0	0.07	0.21	0	70	5.11	0	0.13
603	Kerale Dam													
604	Kerale Dam													
605	Kerale Dam													
606	Kerale Dam													
607	Kerale Dam													
608	Kerale Dam													
609	Kerale Dam													
610	Kerale Dam	1	80	1.8	360	0	4	278	280	6	169	13800	0	435
611	Kerale Dam													
612	Kerale Dam													

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
566	Kerale Dam	8	29	0	0	0	0	193	0		0	0	0	
567	Kerale Dam	8	40	0	0	0	0	0.19	0		0	0	0	
568	Kerale Dam	7	30	0	0	0	0	0.2	0		0	0.01	0.01	
569	Kerale Dam	7	30	0	0	0	0	0.18	0		0	0	0	
570	Kerale Dam	7	29	0	0	0	0	0.17	0		0	0	0	
571	Kerale Dam	7	31	0	0	0	0	0.19	0		0	0	0	
572	Kerale Dam	7	30	0	0	0	0	177	0		0	0	0	
573	Kerale Dam	8	35	0	0	0	0	0.17	0		0	0	0	
574	Kerale Dam	6	30	0	0	0	0	0.3	0		0	0.02	0.02	
575	Kerale Dam	6	32	0	0	0	0	0.19	0		0	0.04	0.04	
576	Kerale Dam	6	28	0	0	0	0	0.19	0		0	0.03	0.03	
577	Kerale Dam	6	27	0	0	0	0	0.2	0		0	0.01	0.01	
578	Kerale Dam	6	31	0	0	0	0	0.26	0		0	0.02	0.02	
579	Kerale Dam	7	31	0	0	0	0	0.26	0		0	0.05	0.05	
580	Kerale Dam	6	30	0	0	0	0	0.27	0		0	0	0	
581	Kerale Dam	7	29	0	0	0	0	0.27	0		0	0.01	0.01	
582	Kerale Dam	7	31	0	0	0	0	0.27	0		0	0.01	0.01	
583	Kerale Dam	7	31	0	0	0	0	0.28	0		0	0	0	
584	Kerale Dam	6	31	0	0	0	0	0.27	0		0	0	0	
585	Kerale Dam	7	32	0	0	0	0	0.25	0		0	0	0	
586	Kerale Dam	7	32	0	0	0	0	0.26	0		0	0	0	
587	Kerale Dam	6	30	0	0	0	0	0.22	0		0	0	0	
588	Kerale Dam	6	30	0	0	0	0	0.25	0		0	0.02	0.02	
589	Kerale Dam	8	32	0	0	0	0	0.28	0		0	0.1	0.1	
590	Kerale Dam	7	32	0	0	0	0	0.28	0		0	0	0	
591	Kerale Dam	7	32	0	0	0	0	0.26	0		0	0.01	0.01	
592	Kerale Dam	7	32	0	0	0	0	0.24	0		0	0.02	0.02	
593	Kerale Dam	7	32	0	0	0	0	0.25	0		0	0	0	
594	Kerale Dam	6	32	0	0	0	0	0.26	0		0	0	0	
595	Kerale Dam	9	35	0	0	0	0	0.26	0		0	0.01	0.01	
596	Kerale Dam	8	34	0	0	0	0	0.28	0		0	0	0	
597	Kerale Dam	7	33	0	0	0	0	0.29	0		0	0	0	
598	Kerale Dam	8	34	0	0	0	0.01	0.33	0		0	0.01	0.01	
599	Kerale Dam	8	33	0	0	0	0	0.3	0		0	0	0	
600	Kerale Dam	8	35	0	0	0	0	0.29	0		0	0.02	0.02	
601	Kerale Dam	8	36	0	0	0	0	0.27	0		0	0.02	0.02	
602	Kerale Dam	8	37	0	0	0	0	0.24	0		0	0.02	0.02	
603	Kerale Dam													
604	Kerale Dam													
605	Kerale Dam													
606	Kerale Dam													
607	Kerale Dam													
608	Kerale Dam													
609	Kerale Dam													
610	Kerale Dam	20	105	0	0	0	0	901	0		0	0.08	0.08	
611	Kerale Dam													
612	Kerale Dam													

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
566	Kerale Dam	0.3	0.03		27	479	0	2	16		0.3		
567	Kerale Dam	0	0		36	482	0				0		
568	Kerale Dam	0.1	0.01		30	495	0				0.1		
569	Kerale Dam	0	0.02		27	480	0				0		
570	Kerale Dam	0	0		34	474	0				0		
571	Kerale Dam	0	0		37	513	0				0		
572	Kerale Dam	0.3	0		32	522	0	2	14		0.3		
573	Kerale Dam	0	0.03		74	543	0				0		
574	Kerale Dam	0.1	0		30	485	0				0.1		
575	Kerale Dam	0.3	0.02		27	490	0				0.3		
576	Kerale Dam	0	0		37	480	0				0		
577	Kerale Dam	0.1	0.02		47	454	0				0.1		
578	Kerale Dam	0.3	0.03		37	492	0				0.3		
579	Kerale Dam	0.4	0.02		29	496	0				0.3		
580	Kerale Dam	0.1	0.02		39	491	0				0.1		
581	Kerale Dam	0	0		38	494	0				0		
582	Kerale Dam	0.2	0		24	505	0				0.2		
583	Kerale Dam	0.1	0		35	505	0				0.1		
584	Kerale Dam	0.2	0		33	490	0				0.2		
585	Kerale Dam	0.1	0.08		32	506					0.1		
586	Kerale Dam	0.3	0.04		32	508					0.3		
587	Kerale Dam	0.2	0.05		42	492	0				0.2		
588	Kerale Dam	0.2	0.02		20	510	0				0.2		
589	Kerale Dam	0.3	0.02		70	530	0				0.2		
590	Kerale Dam	1.2	0.1		32	519					1.2		
591	Kerale Dam	0.2	0		32	538	0				0.2		
592	Kerale Dam	0.2	0.02		65	526	0				0.2		
593	Kerale Dam	0.1	0		37	522	0				0.1		
594	Kerale Dam	0.2	0.01		36	538	0				0.2		
595	Kerale Dam	0	0		38	575	0				0		
596	Kerale Dam	0.2	1.51		41	573	0				0.2		
597	Kerale Dam	0.4	0.02		46	585	0				0.4		
598	Kerale Dam	0.2	0.02		35	589	0				0.2		
599	Kerale Dam	0.9	0.02		57	576	0				0.9		
600	Kerale Dam	0.2	2.41		52	610	0				0.2		
601	Kerale Dam	0.3	0		39	607	0				0.3		
602	Kerale Dam	0.1	0		39	635	0				0.1		
603	Kerale Dam												
604	Kerale Dam												
605	Kerale Dam												
606	Kerale Dam												
607	Kerale Dam												
608	Kerale Dam												
609	Kerale Dam												
610	Kerale Dam	0.7	0	8.7	102		0		36		0.6		
611	Kerale Dam												
612	Kerale Dam												Water Level Low

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
613	Kerale Dam	09/04/2015 00:00:00		4.21	3,185										
614	Kerale Dam	06/05/2015 00:00:00	4.04	4.29	3,515	3530	2,270		1.7						11600
615	Kerale Dam	01/06/2015 00:00:00		3.81	3,721										
616	Kerale Dam	08/07/2015 00:00:00		4.04	3,986										
617	Kerale Dam	04/08/2015 00:00:00	4.13	4.09	4,326	4230	3,010	3560	0.2	79	0	0	0	0	13800
618	Kerale Dam	03/09/2015 00:00:00		4.06	4,833										
619	Kerale Dam	08/10/2015 00:00:00		3.66	5,450										
620	Kerale Dam	04/11/2015 07:40:00	3.85	3.83	6,116	6,140	4,260	6570	0.1	156	0	0	0	0	21600
621	Kerale Dam	04/12/2015 00:00:00		3.87	6,439										
622	Kerale Dam	14/01/2016 00:00:00		3.62	5,006										
623	Kerale Dam	02/02/2016 07:50:00	3.45	3.46	5,960	5640	4,180	6180	0.1	162	0	0	0	0	48900
624	Kerale Dam	01/03/2016 00:00:00		3.3	7,014										
625	Kerale Dam	05/04/2016 00:00:00		3.48	7,915										
626	Kerale Dam	04/05/2016 08:20:00	3.48	3.59	9,572	9,380	7,660	8650	0.1	338	0	0	0	0	94700
627	Kerale Dam	01/06/2016 00:00:00		3.57	11,790										
628	Kerale Dam	06/07/2016 00:00:00		3.66	3,302										
629	Kerale Dam	02/08/2016 08:10:00	3.56	3.55	4,301	4140	2,920	4100	0.1	89	0	0	0	0	45800
630	Kerale Dam	06/09/2016 00:00:00		3.5	5,466										
631	Kerale Dam	05/10/2016 00:00:00		3.48	6,980										
632	Kerale Dam	01/11/2016 07:40:00	3.52	3.35	10,204	9,950	8,160	12800	150	326	0	0	0	0	178000
633	Kerale Dam	14/12/2016 00:00:00													
634	Kerale Dam	12/01/2017 00:00:00													
635	Kerale Dam	15/03/2017 00:00:00													
636	Kerale Dam	12/04/2017 00:00:00		3.86	926.8										
637	Kerale Dam	02/05/2017 07:55:00	3.52	3.57	1149	1210	556	853	0.2	10	0	0	0	0	6040
638	Kerale Dam	05/06/2017 00:00:00		3.76	939.6										
639	Kerale Dam	13/07/2017 00:00:00		3.71	1080										
640	Kerale Dam	09/08/2017 08:05:00	3.55	3.44	1175	1210	567	830	0.1	9	<1	<1	<1	<1	7470
641	Kerale Dam	06/09/2017 00:00:00		3.74	1316										
642	Kerale Dam	10/10/2017 00:00:00		3.13	1541										
643	Kerale Dam	07/11/2017 07:56:00	3.34			1690	834	951	0.2	15	<1	<1	<1	<1	11400
644	Kerale Dam	05/12/2017 00:00:00		4.41	1289										
645	Kerale Dam	09/01/2018 00:00:00		3.62	1500										
646	Kerale Dam	06/02/2018 07:24:00	3.35	3.04	1649	1680	798	1270	1	13	<1	<1	<1	<1	10500
647	Kerale Dam	06/03/2018 00:00:00		3.16	1629										
648	Kerale Dam	05/04/2018 00:00:00		3.22	1820										
649	Kerale Dam	09/05/2018 09:10:00	3.35	3.35	2047	1990	1,090	1560	0.6	15	<1	<1	<1	<1	13600
650	Kerale Dam	06/06/2018 00:00:00		2.8	2170										
651	Kerale Dam	07/08/2018 08:10:00	3.40	3.22	1757	2600	1,530	2140	0.2	22	<1	<1	<1	<1	21300
652	Kerale Dam	07/11/2018 07:30:00	3.30	3.11	3,561	3480	2,280	3340	1.7	32	<1	<1	<1	<1	30600
653	Kerale Dam	05/02/2019 09:00:00	4.27			604	283	416	0.1	7	<1	<1	<1	<1	1940
654	Kerale Dam	08/05/2019 00:00:00													
655	Kerale Dam	08/05/2019 09:30:00	3.46	3.9	1491	1440	733	1210	0.5	12	<1	<1	<1	<1	11400
656	Kerale Dam	06/08/2019 08:00:00	3.51	3.24	1823	1870	1,040	1500	0.6	13	<1	<1	<1	<1	14900
657	Kerale Dam	05/11/2019 12:30:00	3.26	3.21	2969	2880	1,950	2840	1.2	31	<1	<1	<1	<1	23100
658	Kerale Dam	04/02/2020 08:00:00	3.26	3.09	4,090	4170	2,760	3420	0.1	50	<1	<1	<1	<1	35500
659	Kerale Dam	06/05/2020 08:45:00	3.50	3.29	1842	1730	959	1120	0.2	15	<1	<1	<1	<1	7190

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
613	Kerale Dam													
614	Kerale Dam	1	160	2.5		0	4	372	130	8		17500	0	579
615	Kerale Dam													
616	Kerale Dam													
617	Kerale Dam	1	210	2.7		0	5	448	270	10		22600	0	710
618	Kerale Dam													
619	Kerale Dam													
620	Kerale Dam	2	340	4.8		0	7	738	430	20		41000	0	1150
621	Kerale Dam													
622	Kerale Dam													
623	Kerale Dam	4	350	8.3		2	18	1620	1950	12		46000	0	2340
624	Kerale Dam													
625	Kerale Dam													
626	Kerale Dam	7	620	10.4	620	3	21	2980	1610	16	1060	99000	0	4580
627	Kerale Dam													
628	Kerale Dam													
629	Kerale Dam	3	170	7.6	333	2	16	1660	900	3	319	31500	0	2330
630	Kerale Dam													
631	Kerale Dam													
632	Kerale Dam	12	600	14.9	568	5	31	4770	810	14	1320	124000	0	6910
633	Kerale Dam													
634	Kerale Dam													
635	Kerale Dam													
636	Kerale Dam													
637	Kerale Dam	0	0	2.1	107	0	10	255	370	0	49	4160	0	396
638	Kerale Dam													
639	Kerale Dam													
640	Kerale Dam	<1	<50	1.6	111	<1	6	207	980	1	46	3960	<1	320
641	Kerale Dam													
642	Kerale Dam													
643	Kerale Dam	1	<50	2.1	182	<1	7	300	1160	3	63	5800	<1	456
644	Kerale Dam													
645	Kerale Dam													
646	Kerale Dam	1	<50	1.5	182	<1	4	286	820	3	68	5400	<1	409
647	Kerale Dam													
648	Kerale Dam													
649	Kerale Dam	<1	110	1.9	210	<1	3	332	560	6	82	7910	<1	483
650	Kerale Dam													
651	Kerale Dam	2	130	2.3	346	2	8	490	680	7	108	10400	<1	745
652	Kerale Dam	4	180	3.7	535	2	11	660	1530	8	166	14700	<1	940
653	Kerale Dam	<1	<50	0.6	59	<1	2	69	340	<1	21	1560	<1	102
654	Kerale Dam													
655	Kerale Dam	<1	60	1.6	148	<1	8	222	800	3	76	5310	<1	350
656	Kerale Dam	<1	100	1.8	196	<1	7	288	660	4	88	6530	<1	425
657	Kerale Dam	2	190	2.8	319	2	11	492	1380	9	139	11300	<1	774
658	Kerale Dam	4	230	6.3	461	2	18	913	3250	9	249	17900	<1	1350
659	Kerale Dam	2	70	2	200	<1	4	297	490	2	81	5480	<1	420

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
613	Kerale Dam													
614	Kerale Dam			0	0	0	0	1100	0		0	130	130	9
615	Kerale Dam													
616	Kerale Dam													
617	Kerale Dam			0	0	0	0	1320	0		0	0	0	6
618	Kerale Dam													
619	Kerale Dam													
620	Kerale Dam			10	0	2	0	2100	0		0	0	0	8
621	Kerale Dam													
622	Kerale Dam													
623	Kerale Dam			0	0	4	0	4420	0		0	0.12	0.12	7.6
624	Kerale Dam													
625	Kerale Dam													
626	Kerale Dam	84	503	0	0	7	0	6610	0		0	0	0	7.7
627	Kerale Dam													
628	Kerale Dam													
629	Kerale Dam	23	148	0	0	3	0	4390	0		0	0.44	0.44	7.9
630	Kerale Dam													
631	Kerale Dam													
632	Kerale Dam	77	533	0	0	8	0	10700	0		0	0	0	7.8
633	Kerale Dam													
634	Kerale Dam													
635	Kerale Dam													
636	Kerale Dam													
637	Kerale Dam	5	21	0	0	0	0	772	0		0	0.71	0.71	5.6
638	Kerale Dam													
639	Kerale Dam													
640	Kerale Dam	7	17	<10	2	<1	<10	612	<0.1		<0.01	0.35	0.35	
641	Kerale Dam													
642	Kerale Dam													
643	Kerale Dam	12	26	<10	<1	1	<10	884	<0.1		<0.01	0.06	0.06	
644	Kerale Dam													
645	Kerale Dam													
646	Kerale Dam	14	28	<10	<1	1	<10	712	<0.1		<0.01	0.08	0.08	8
647	Kerale Dam													
648	Kerale Dam													
649	Kerale Dam	17	37	<10	<1	1	<10	852	<0.1	4.05	<0.10	0.2	0.2	8.70
650	Kerale Dam													
651	Kerale Dam	25	53	<10	<1	2	<10	1,160	<0.1	5.36	<0.01	0.23	0.23	9
652	Kerale Dam	34	81	<10	<1	2	<10	1710	<0.1	8.19	<0.01	0.21	0.21	8.7
653	Kerale Dam	7	12	<10	<1	<1	<10	204	<0.1	0.82	<0.01	0.42	0.42	9.7
654	Kerale Dam													
655	Kerale Dam	16	28	<10	<1	1	<10	770	<0.1	1.3	<0.01	0.02	0.02	8.9
656	Kerale Dam	17	33	<10	<1	1	<10	859	<0.1	1.44	<0.01	0.02	0.02	9.4
657	Kerale Dam	27	53	<10	<1	2	<10	2650	<0.1	2.97	<0.01	0.04	0.04	8.70
658	Kerale Dam	46	104	10	<1	4	<10	3020	<0.1	6.11	<0.01	<0.50	<0.50	9.1
659	Kerale Dam	20	32	<10	<1	<1	<10	810	<0.1	1.92	<0.01	0.08	0.08	9

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
613	Kerale Dam												
614	Kerale Dam	700	0			2170					600		
615	Kerale Dam												
616	Kerale Dam												
617	Kerale Dam	0.4	0.01		165		0		50		0.4		Samples takes
618	Kerale Dam												
619	Kerale Dam												
620	Kerale Dam	0.4	0		230		0		89	26.7	0.4		
621	Kerale Dam												
622	Kerale Dam												
623	Kerale Dam	3.4	0.06		433		0		143	28.9	3.3		
624	Kerale Dam												
625	Kerale Dam												
626	Kerale Dam	9	0.1		683	5910	0	103	219	26.7	9		
627	Kerale Dam												
628	Kerale Dam												
629	Kerale Dam	5.1	0		340	2140	0	54	134	20.39	4.7		
630	Kerale Dam												
631	Kerale Dam												
632	Kerale Dam	19.4	0		1030	5950	0	153	363	25.45	19.4		
633	Kerale Dam												water.
634	Kerale Dam												water.
635	Kerale Dam												water.
636	Kerale Dam												
637	Kerale Dam	2.8	0		68	469	0	8	37	22.94	2.1		
638	Kerale Dam												
639	Kerale Dam												
640	Kerale Dam	1.8	<0.01		71	466	<1	8	35	21.59	1.5		
641	Kerale Dam												
642	Kerale Dam												
643	Kerale Dam	2.6	0.02		118	714	<1	12	48		2.5		
644	Kerale Dam												
645	Kerale Dam												
646	Kerale Dam	2.7	0.01		135	734	<1	10	39	26.98	2.6		Clear
647	Kerale Dam												Clear
648	Kerale Dam												Clear
649	Kerale Dam	3.7	<0.10		145	862	<1	16	60	24.94	3.5		Clear
650	Kerale Dam												Clear
651	Kerale Dam	5.4	<0.01		156	1310	<1	19	73	22.33	5.2		
652	Kerale Dam	8.4	<0.01		262	2020	<1	26	109	27.46	8.2		Dam level low
653	Kerale Dam	1.4	0.01		32	234	<1	2	14		1		
654	Kerale Dam												
655	Kerale Dam	1.6	0.01		126	682	<1	10	48	23.33	1.6		
656	Kerale Dam	1.5	<0.01		144	852	<1	12	61	19.45	1.5		
657	Kerale Dam	3.3	<0.01		246	1370	<1	23	116	29.98	3.3		Clear
658	Kerale Dam	6.8	0.01		457	2180	<1	34	151	28.59	6.8		
659	Kerale Dam	2.5	0.01		102	833	<1	9	50	20.79	2.4		Dam level low.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
660	Kerale Dam	02/09/2020 09:15:00	3.58	4.35	2748	2710	1,700	2400	1	29	<1	<1	<1	<1	12900
661	Kerale Dam	09/12/2020 15:30:00													
662	Kerale Dam	09/03/2021 07:55:00	3.43	3.44	1427	1470	738	1200	0.2	11	<1	<1	<1	<1	5220
663	Kerale Dam	02/06/2021 08:45:00	3.50	3.66	1818	1830	997	1690	0.4	12	<1	<1	<1	<1	9560
664	Kerale Dam	07/09/2021 08:00:00	3.47	3.5	2931	2990	1,730	2850	0.2	23	<1	<1	<1	<1	19500
665	Kerale Dam	07/12/2021 09:30:00	3.30	3.26	2268	2380	1,190	1990	0.8	13	<1	<1	<1	<1	16800
666	Kerale Dam	28/02/2022 14:20:00	3.71	3.04	917.7	920	430	692	0.3	6	<1	<1	<1	<1	2520
667	Kerale Dam	31/05/2022 11:30:00	3.71	3.51	1187	1190	617	904	0.3	7	<1	<1	<1	<1	4980
668	Kerale Dam	30/08/2022 11:30:00	3.70	3.71	1237	1260	672	984	<1.0	8	<1	<1	<1	<1	5320
669	Kerale Dam	08/12/2022 12:00:00	5.94	5.65	255	273	100	217	<0.1	3	<1	<1	4	4	20
670	Kerale Dam	09/03/2023 11:45:00	4.35			564	266	414	0.2	5	<1	<1	<1	<1	1000
671	Kerale Dam	05/07/2023 11:35:00	4.63	6.73	1010	730	371	549	0.1	8	<1	<1	2	2	230
672	Kerale Dam	07/09/2023 17:10:00	4.14	3.9	1104	1100	574	927	0.2	11	<1	<1	<1	<1	840
673	Kerale Dam	28/11/2023 00:00:00													
674	Kerale Dam	13/03/2024 09:15:00	4	4.52	1335	1350	746	1080	0.4	11	<1	<1	<1	<1	5490
675	Kerale Dam	05/09/2024 01:00:00													
676	Kerale Dam	28/11/2024 00:00:00													
677	Kerale Dam	06/03/2025 09:30:00	3.53	3.51	1014	1150	550	863	0.4	6	<1	<1	<1	<1	8940
678	Kerale Dam	10/06/2025 13:55:00	3.62	3.73	1620	1620	808	1320	0.5	10	<1	<1	<1	<1	10600
679	Kerale Dam Seepage	09/08/2011 00:00:00	6.53			5900	3270	5710		429					0.28
680	Kerale Dam Seepage	09/08/2011 00:00:00	7.26			8740	4550	7760		745					<0.01
681	Kerale Dam Seepage	09/11/2011 00:00:00	4.59			4880	3090	4710		109					8.06
682	Kerale Dam Seepage	09/11/2011 00:00:00	7.63			11300	5620	9510		692					0.17
683	Kerale Dam Seepage	09/05/2012 00:00:00	6.2			4610	2840	4710		190					0.78
684	Kerale Dam Seepage	09/05/2012 00:00:00	7.49			7190	3840	7140		518					0.1
685	Kerale Dam Seepage	22/08/2012 00:00:00	6.91			7830	4170	6720		415					<0.01
686	Kerale Dam Seepage	12/09/2012 00:00:00	7.15			7970	3960	8090		564					0.01
687	Kerale Dam Seepage	08/11/2012 00:00:00	4.75			4440	2720	4620		109					3.88
688	Kerale Dam Seepage	08/11/2012 00:00:00	7.83			10600	5150	11200		484					0.03
689	Kerale Dam Seepage	05/02/2013 00:00:00	4.15			4980	2710	4350		324					2.8
690	Kerale Dam Seepage	05/02/2013 00:00:00	5.12			4680	2610	4270		279					1.83
691	Kerale Dam Seepage	08/05/2013 00:00:00	6.98			5810	3150	4730		313					0.17
692	Kerale Dam Seepage	08/05/2013 00:00:00	5.71			5950	3640	5650		340					0.66
693	Kerale Dam Seepage	22/08/2013 00:00:00	6.06			4580	234	3630		153					1.74
694	Kerale Dam Seepage	22/08/2013 00:00:00	5.13			5750	3720	6280		251					2.6
695	Kerale Dam Seepage	06/05/2015 00:00:00	7.42	8.15	4,473	4510	2360		0.5						0
696	Kerale Dam Seepage	01/06/2015 00:00:00		8.03	5,353										
697	Kerale Dam Seepage	08/07/2015 00:00:00		8.33	6,099										
698	Kerale Dam Seepage	04/08/2015 00:00:00	7.3	7.75	6,927	6780	4890	6880	0.6	171	0	0	89	89	40
699	Kerale Dam Seepage	03/09/2015 00:00:00		7.39	8,457										
700	Kerale Dam Seepage	08/10/2015 00:00:00		7.36	12,350										
701	Kerale Dam Seepage	04/12/2015 00:00:00		7.62	3,358										
702	Kerale Dam Seepage	14/01/2016 00:00:00		5.21	981.8										
703	Kerale Dam Seepage	02/02/2016 08:00:00	6.68	6.04	1373	1340	577	1040	0	35	0	0	10	10	20
704	Kerale Dam Seepage	01/03/2016 00:00:00		3.93	3,678										
705	Kerale Dam Seepage	05/04/2016 00:00:00		6.66	1611										
706	Kerale Dam Seepage	01/06/2016 00:00:00													

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	**Sample Site**	**Dissolved Arsenic (µg/L)**	**Dissolved Boron (µg/L)**	**Dissolved Cadmium (µg/L)**	**Dissolved Calcium (mg/L)**	**Dissolved Chromium (µg/L)**	**Dissolved Copper (µg/L)**	**Dissolved Cobalt (µg/L)**	**Dissolved Iron (µg/L)**	**Dissolved Lead (µg/L)**	**Dissolved Magnesium (mg/L)**	**Dissolved Manganese (µg/L)**	**Dissolved Molybdenum (µg/L)**	**Dissolved Nickel (µg/L)**
660	Kerale Dam	1	150	2.6	377	<1	6	447	300	4	133	10100	<1	636
661	Kerale Dam													
662	Kerale Dam	1	90	1.8	167	<1	4	348	860	3	55	4310	<1	482
663	Kerale Dam	1	100	2.1	258	1	8	445	430	4	75	6370	<1	623
664	Kerale Dam	2	170	3.5	475	1	13	642	1420	7	136	12400	<1	960
665	Kerale Dam	2	140	11.1	271	2	23	1420	1480	5	93	9780	<1	1860
666	Kerale Dam	1	90	2	99	<1	4	262	520	1	29	3140	<1	410
667	Kerale Dam	1	90	2.4	144	<1	6	342	190	2	37	3980	<1	489
668	Kerale Dam	<1	80	2.5	154	<1	5	323	160	2	42	4660	<1	485
669	Kerale Dam	<1	<50	0.2	28	<1	<1	27	310	<1	8	796	<1	36
670	Kerale Dam	<1	60	0.3	52	<1	<1	51	70	<1	26	1700	<1	86
671	Kerale Dam	<1	80	0.2	82	<1	<1	40	100	<1	38	2470	<1	82
672	Kerale Dam	<1	70	0.8	115	<1	<1	98	80	<1	57	4150	<1	148
673	Kerale Dam													
674	Kerale Dam	2	120	3.8	167	<1	12	436	170	1	52	5060	<1	720
675	Kerale Dam													
676	Kerale Dam													
677	Kerale Dam	1	100	2.4	107	<1	10	314	580	<1	47	4750	<1	465
678	Kerale Dam	2	120	3	185	<1	10	506	470	2	70	8120	<1	751
679	Kerale Dam Seepage	<0.001	0.52	0.0004	558	<0.001	0.005	0.039	0.82	<0.001	293	3.65	<0.001	0.122
680	Kerale Dam Seepage	<0.001	0.72	0.0002	562	<0.001	0.009	0.064	0.68	<0.001	280	9.47	<0.001	0.084
681	Kerale Dam Seepage	<0.001	0.37	0.0002	495	<0.001	0.002	0.036	1.08	0.003	290	2.41	<0.001	0.097
682	Kerale Dam Seepage	0.003	0.86	<0.0001	650	<0.001	0.001	0.01	<0.50	<0.001	388	1.45	<0.001	0.022
683	Kerale Dam Seepage	<0.001	0.44	0.0004	446	<0.001	0.002	0.035	0.52	<0.001	241	1.93	<0.001	0.077
684	Kerale Dam Seepage	<0.001	0.62	<0.0001	476	0.001	0.004	0.021	1.66	<0.001	243	3.11	<0.001	0.041
685	Kerale Dam Seepage	<0.001	0.6	0.0001	499	<0.001	<0.001	0.158	5.18	<0.001	279	11.8	<0.001	0.167
686	Kerale Dam Seepage	<0.001	0.65	0.0001	489	<0.001	<0.001	0.098	2.83	<0.001	265	10.9	<0.001	0.125
687	Kerale Dam Seepage	<0.001	0.42	0.0002	524	<0.001	0.002	0.035	0.24	0.001	264	1.9	<0.001	0.095
688	Kerale Dam Seepage	<0.001	0.96	<0.0001	614	<0.001	<0.001	0.029	0.13	<0.001	430	6.58	<0.001	0.07
689	Kerale Dam Seepage	<0.001	0.6	0.0004	335	<0.001	0.003	0.264	0.82	0.003	175	9.82	<0.001	0.244
690	Kerale Dam Seepage	<0.001	0.57	0.0003	398	<0.001	0.003	0.154	0.36	0.002	194	6.03	<0.001	0.158
691	Kerale Dam Seepage	<0.001	0.53	0.0001	496	<0.001	<0.001	0.196	<0.05	<0.001	269	8.7	<0.001	0.267
692	Kerale Dam Seepage	<0.001	0.57	0.0002	498	<0.001	<0.001	0.281	<0.05	<0.001	264	10	<0.001	0.37
693	Kerale Dam Seepage	<0.001	0.48	0.0002	508	<0.001	0.002	0.09	0.21	0.001	251	3.69	<0.001	0.151
694	Kerale Dam Seepage	0.004	0.62	0.0004	551	<0.001	0.001	0.31	<0.05	0.001	274	8.13	<0.001	0.481
695	Kerale Dam Seepage	1	440	0		0	0	0	70	0		3	0	13
696	Kerale Dam Seepage													
697	Kerale Dam Seepage													
698	Kerale Dam Seepage	0	750	0		0	0	1	120	0		188	0	14
699	Kerale Dam Seepage													
700	Kerale Dam Seepage													
701	Kerale Dam Seepage													
702	Kerale Dam Seepage													
703	Kerale Dam Seepage	0	110	0		0	0	0	0	0		24	0	5
704	Kerale Dam Seepage													
705	Kerale Dam Seepage													
706	Kerale Dam Seepage													

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
660	Kerale Dam	32	56	<10	<1	1	<10	1230	<0.1	4.29	<0.01	0.05	0.05	10.50
661	Kerale Dam													
662	Kerale Dam	19	20	<10	<1	<1	<10	976	<0.1	4.48	<0.01	0.03	0.03	8.4
663	Kerale Dam	25	28	<10	<1	<1	<10	1040	<0.1	6.47	<0.01	0.09	0.09	9.4
664	Kerale Dam	35	46	<10	<1	2	<10	1740	<0.1	9.94	<0.01	0.09	0.09	8.7
665	Kerale Dam	25	30	<10	<1	3	<10	4810	<0.1	9.58	<0.01	0.06	0.06	9.3
666	Kerale Dam	15	11	<10	<1	<1	<10	848	<0.1	2.43	<0.01	0.04	0.04	8.9
667	Kerale Dam	16	13	<10	<1	<1	<10	969	<0.1	4.14	<0.01	0.17	0.17	9.4
668	Kerale Dam	18	16	<10	<1	<1	<10	899	<0.1	2.89	<0.01	0.24	0.24	9.2
669	Kerale Dam	8	4	<10	<1	<1	<10	74	<0.1	0.15	<0.01	0.03	0.03	7.8
670	Kerale Dam	9	7	<10	<1	<1	<10	145	<0.1	0.03	<0.01	<0.01	<0.01	8.3
671	Kerale Dam	14	13	<10	<1	<1	<10	108	<0.1	0.03	<0.01	<0.01	<0.01	9.4
672	Kerale Dam	18	18	<10	<1	<1	<10	282	<0.1	0.38	<0.01	0.02	0.02	8.5
673	Kerale Dam													
674	Kerale Dam	24	17	<10	<1	<1	<10	1480	<0.1	5.17	<0.01	0.19	0.19	7.9
675	Kerale Dam													
676	Kerale Dam													
677	Kerale Dam	14	11	<10	<1	1	<10	965	<0.1	1.2	<0.01	0.02	0.02	8.9
678	Kerale Dam	19	16	<10	<1	1	<10	1300	<0.1	3.04	<0.01	0.02	0.02	10.30
679	Kerale Dam Seepage	13	676	<0.01	<0.001	<0.001	<0.01	0.21	<0.0001		<0.01	0.01	0.01	
680	Kerale Dam Seepage	12	1490	<0.01	<0.001	0.001	<0.01	0.021	<0.0001		0.01	0.02	0.03	
681	Kerale Dam Seepage	18	373	<0.01	<0.001	<0.001	<0.01	0.269	<0.0001		<0.01	<0.01	<0.01	
682	Kerale Dam Seepage	23	1880	<0.01	<0.001	0.003	<0.01	0.01	<0.0001		<0.01	<0.01	<0.01	
683	Kerale Dam Seepage	10	435	<0.01	<0.001	<0.001	<0.01	0.196	<0.0001		<0.01	0.02	0.02	
684	Kerale Dam Seepage	11	1170	<0.01	<0.001	0.001	<0.01	0.02	<0.0001		<0.01	0.02	0.02	
685	Kerale Dam Seepage	9	1320	<0.01	<0.001	0.002	<0.01	0.066	<0.0001		<0.01	<0.01	<0.01	
686	Kerale Dam Seepage	10	1440	<0.01	<0.001	<0.001	<0.01	0.045	<0.0001		<0.01	0.02	0.02	
687	Kerale Dam Seepage	12	403	<0.01	<0.001	<0.001	<0.01	0.242	<0.0001		<0.01	0.01	0.01	
688	Kerale Dam Seepage	10	2080	<0.01	<0.001	0.003	<0.01	0.011	<0.0001		<0.01	<0.01	<0.01	
689	Kerale Dam Seepage	9	799	<0.01	<0.001	0.001	<0.01	0.305	<0.0001		<0.01	0.08	0.08	
690	Kerale Dam Seepage	10	662	<0.01	<0.001	<0.001	<0.01	0.295	<0.0001		<0.01	0.05	0.05	
691	Kerale Dam Seepage	7	875	<0.01	<0.001	<0.001	<0.01	0.287	<0.0001		<0.01	<0.01	<0.01	
692	Kerale Dam Seepage	6	970	<0.01	<0.001	<0.001	<0.01	0.439	<0.0001		<0.01	<0.01	<0.01	
693	Kerale Dam Seepage	11	496	<0.01	<0.001	<0.001	<0.01	0.238	<0.0001		<0.01	<0.01	<0.01	
694	Kerale Dam Seepage	5	802	0.02	<0.001	0.001	<0.01	0.587	<0.0001		<0.01	<0.01	<0.01	
695	Kerale Dam Seepage			0	0	2	0	0	0		0	0	0	8.9
696	Kerale Dam Seepage													
697	Kerale Dam Seepage													
698	Kerale Dam Seepage			0	0	2	0	10	0		0	0.04	0.04	6.9
699	Kerale Dam Seepage													
700	Kerale Dam Seepage													
701	Kerale Dam Seepage													
702	Kerale Dam Seepage													
703	Kerale Dam Seepage			0	0	0	0	0	0		0	0	0	7
704	Kerale Dam Seepage													
705	Kerale Dam Seepage													
706	Kerale Dam Seepage													

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Dissolved Oxygen (% saturation)	Acidity as CaCO3 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Antimony (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Lithium (µg/L)	Field Water Temperature (°C)	Total Kjeldahl Nitrogen as N (mg/L)	Dissolved Silicon (mg/L)	Comments/Observations
660	Kerale Dam	4.2	<0.01		112	1490	<1	15	70	20.6	4.1		Sampled.
661	Kerale Dam												Dry.
662	Kerale Dam	5.1	<0.01		78	643	<1	10	46	26.69	5.1		Clear.
663	Kerale Dam	7	<0.01		81	953	<1	12	44	20.43	6.9		Water level
664	Kerale Dam	10.7	<0.01		144	1750	<1	22	67	18.95	10.6		Water level
665	Kerale Dam	11.4	0.18		170	1060	<1	28	96	30.77	11.3		level max 40cm
666	Kerale Dam	2.5	<0.01		39	367	<1	8	41	35.33	2.5		Water clear
667	Kerale Dam	3.9	<0.01		58	512	<1	9	43	22.92	3.7		-
668	Kerale Dam	3.3	0.02		45	557	<1	10	50	24.95	3.1		clear
669	Kerale Dam	0.9	0.05		11	103	<1	<1	10	32.66	0.9		
670	Kerale Dam	<0.1	<0.01		22	237	<1	2	21		<0.1		
671	Kerale Dam	0.1	0.01		6	361	<1	<1	17	24.7	0.1		Clear
672	Kerale Dam	0.6	0.01		28	522	<1	2	21	22.21	0.6		Water level low
673	Kerale Dam												Dry
674	Kerale Dam	6.4	0.1		43	631	1	13	44	26.62	6.2		Water Level Low
675	Kerale Dam												Dry
676	Kerale Dam												Dry
677	Kerale Dam	1.9	<0.01		77	461	<1	13	49	30.14	1.9		Water level low
678	Kerale Dam	3.6	<0.01		93	750	<1	15	48	20.7	3.6		Water level low
679	Kerale Dam Seepage	0.2	0.04		38		<0.001				0.2		
680	Kerale Dam Seepage	0.5	0.02		21		<0.001				0.5		
681	Kerale Dam Seepage	0.4	<0.01		108		<0.001				0.4		
682	Kerale Dam Seepage	1.4	0.01		19		<0.001				1.4		
683	Kerale Dam Seepage	0.2	0.02		33		<0.001				0.2		
684	Kerale Dam Seepage	0.4	0.02		10		<0.001				0.4		
685	Kerale Dam Seepage	0.7	<0.01		61		<0.001				0.7		
686	Kerale Dam Seepage	0.4	0.03		21		<0.001				0.4		
687	Kerale Dam Seepage	2.1	0.07		49		<0.001				2.1		
688	Kerale Dam Seepage	0.9	0.05		10		<0.001				0.9		
689	Kerale Dam Seepage	0.7	0.05		51		<0.001				0.6		
690	Kerale Dam Seepage	0.8	0.02		34		<0.001				0.8		
691	Kerale Dam Seepage	0.4	<0.01		48		<0.001				0.4		
692	Kerale Dam Seepage	0.4	<0.01		33		<0.001				0.4		
693	Kerale Dam Seepage	0.7	0.85		17		<0.001				0.7		
694	Kerale Dam Seepage	0.3	0.35		7		<0.001				0.3		
695	Kerale Dam Seepage	600	0			1800					600		
696	Kerale Dam Seepage												
697	Kerale Dam Seepage												
698	Kerale Dam Seepage	0.8	0.02		29		0		315		0.8		Samples takes
699	Kerale Dam Seepage												
700	Kerale Dam Seepage												
701	Kerale Dam Seepage												
702	Kerale Dam Seepage												
703	Kerale Dam Seepage	0.3	0.02		2		0		34	29.5	0.3		
704	Kerale Dam Seepage												
705	Kerale Dam Seepage												
706	Kerale Dam Seepage												Dry

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
707	Kerale Dam Seepage	06/07/2016 00:00:00		5.86	471.5										
708	Kerale Dam Seepage	02/08/2016 08:20:00	6.28	5.91	6,437	633	240	475	0	25	0	0	11	11	30
709	Kerale Dam Seepage	06/09/2016 00:00:00		5.51	873.4										
710	Kerale Dam Seepage	05/10/2016 00:00:00													
711	Kerale Dam Seepage	14/12/2016 00:00:00													
712	Kerale Dam Seepage	12/01/2017 00:00:00													
713	Kerale Dam Seepage	15/03/2017 00:00:00		7.51	514.3										
714	Kerale Dam Seepage	12/04/2017 00:00:00		5.51	739.3										
715	Kerale Dam Seepage	02/05/2017 08:10:00	6.92	5.58	883.4	875	272	544	0.1	56	0	0	14	14	20
716	Kerale Dam Seepage	05/06/2017 00:00:00		5.57	2982										
717	Kerale Dam Seepage	13/07/2017 00:00:00		4.89	3,747										
718	Kerale Dam Seepage	09/08/2017 08:15:00	6.08	5.28	4,153	4190	1830	3200	0.2	392	<1	<1	5	5	290
719	Kerale Dam Seepage	06/09/2017 00:00:00		4.67	4,648										
720	Kerale Dam Seepage	10/10/2017 00:00:00		3.66	6,505										
721	Kerale Dam Seepage	07/11/2017 08:07:00	5.92			4830	2120	3840	0.2	465	<1	<1	6	6	20
722	Kerale Dam Seepage	05/12/2017 00:00:00		4.13	388.5										
723	Kerale Dam Seepage	09/01/2018 00:00:00		5.29	1320										
724	Kerale Dam Seepage	06/02/2018 07:35:00	7.24	6	1876	1900	702	1370	0.1	120	<1	<1	35	35	40
725	Kerale Dam Seepage	06/03/2018 00:00:00		5.61	1270										
726	Kerale Dam Seepage	05/04/2018 00:00:00		7.53	2015										
727	Kerale Dam Seepage	09/05/2018 09:25:00	6.86	6.42	3,213	3120	1350	2370	0.2	190	<1	<1	72	72	<10
728	Kerale Dam Seepage	06/06/2018 00:00:00													
729	Kerale Dam Seepage	05/02/2019 10:05:00	5.31			896	340	635	<0.1	56	<1	<1	2	2	110
730	Kerale Dam Seepage	08/05/2019 00:00:00													
731	Kerale Dam Seepage	08/05/2019 09:55:00	7.14	5.51	2813	2700	1250	2200	0.2	140	<1	<1	85	85	<10
732	Kerale Dam Seepage	06/08/2019 08:15:00	7.36	5.63	4,770	4850	2560	4080	0.2	277	<1	<1	113	113	<10
733	Kerale Dam Seepage	05/11/2019 12:42:00													
734	Kerale Dam Seepage	04/02/2020 08:10:00	6.52	4.93	1633	1720	738	1300	0.2	64	<1	<1	22	22	<10
735	Kerale Dam Seepage	06/05/2020 09:10:00													
736	Kerale Dam Seepage	02/09/2020 01:00:00													
737	Kerale Dam Seepage	09/12/2020 15:35:00													
738	Kerale Dam Seepage	09/03/2021 08:23:00	7.35	6	806	832	301	621	0.1	42	<1	<1	46	46	<10
739	Kerale Dam Seepage	02/06/2021 09:08:00	7.07	6.78	848.9	877	371	622	0.1	34	<1	<1	26	26	<10
740	Kerale Dam Seepage	07/09/2021 08:25:00													
741	Kerale Dam Seepage	07/12/2021 08:30:00	6.53	5.35	577.3	606	208	443	<0.1	29	<1	<1	11	11	<10
742	Kerale Dam Seepage	28/02/2022 14:40:00	6.64	5.66	252.2	249	64	196	0.2	11	<1	<1	30	30	<10
743	Kerale Dam Seepage	31/05/2022 11:00:00	5.35	5.15	362.4	350	136	244	<0.1	12	<1	<1	4	4	140
744	Kerale Dam Seepage	08/12/2022 11:30:00	5.64	5.48	322	338	116	264	<0.1	13	<1	<1	4	4	10
745	Kerale Dam Seepage	09/03/2023 11:15:00	7.36			525	108	345	0.1	28	<1	<1	100	100	<10
746	Kerale Dam Seepage	28/05/2023 00:00:00													
747	Kerale Dam Seepage	07/09/2023 01:00:00													
748	Kerale Dam Seepage	28/11/2023 00:00:00													
749	Kerale Dam Seepage	13/03/2024 07:45:00	7.42	6.36	336	282	8	220	0.2	15	<1	<1	127	127	<10
750	Kerale Dam Seepage	05/09/2024 01:00:00													
751	Kerale Dam Seepage	28/11/2024 00:00:00													
752	Kerale Dam Seepage	06/03/2025 09:00:00	7.07	6.06	561	492	135	324	0.1	29	<1	<1	44	44	70
753	Kerale Dam Seepage	10/06/2025 13:40:00	8.02	7.02	526	449	59	305	0.2	28	<1	<1	148	148	<10

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	**Sample Site**	**Dissolved Arsenic (µg/L)**	**Dissolved Boron (µg/L)**	**Dissolved Cadmium (µg/L)**	**Dissolved Calcium (mg/L)**	**Dissolved Chromium (µg/L)**	**Dissolved Copper (µg/L)**	**Dissolved Cobalt (µg/L)**	**Dissolved Iron (µg/L)**	**Dissolved Lead (µg/L)**	**Dissolved Magnesium (mg/L)**	**Dissolved Manganese (µg/L)**	**Dissolved Molybdenum (µg/L)**	**Dissolved Nickel (µg/L)**
707	Kerale Dam Seepage													
708	Kerale Dam Seepage	0	0	0	28	0	0	0	220	0	16	219	0	15
709	Kerale Dam Seepage													
710	Kerale Dam Seepage													
711	Kerale Dam Seepage													
712	Kerale Dam Seepage													
713	Kerale Dam Seepage													
714	Kerale Dam Seepage													
715	Kerale Dam Seepage	0	0	0	39	0	0	4	60	0	22	421	0	28
716	Kerale Dam Seepage													
717	Kerale Dam Seepage													
718	Kerale Dam Seepage	<1	230	0.1	250	<1	<1	9	80	<1	136	3690	<1	160
719	Kerale Dam Seepage													
720	Kerale Dam Seepage													
721	Kerale Dam Seepage	<1	290	<0.1	295	<1	<1	54	570	<1	158	8780	<1	96
722	Kerale Dam Seepage													
723	Kerale Dam Seepage													
724	Kerale Dam Seepage	<1	110	<0.1	80	<1	<1	2	<50	<1	74	149	<1	9
725	Kerale Dam Seepage													
726	Kerale Dam Seepage													
727	Kerale Dam Seepage	<1	230	<0.1	118	<1	<1	<1	<50	<1	120	4	<1	<1
728	Kerale Dam Seepage													
729	Kerale Dam Seepage	<1	60	<0.1	37	<1	<1	23	220	<1	24	1300	<1	31
730	Kerale Dam Seepage													
731	Kerale Dam Seepage	<1	170	<0.1	145	<1	<1	<1	<50	<1	127	131	<1	3
732	Kerale Dam Seepage	<1	320	<0.1	249	<1	<1	<1	<50	<1	210	2	<1	1
733	Kerale Dam Seepage													
734	Kerale Dam Seepage	<1	100	<0.1	111	<1	<1	65	2920	<1	57	9950	<1	54
735	Kerale Dam Seepage													
736	Kerale Dam Seepage													
737	Kerale Dam Seepage													
738	Kerale Dam Seepage	<1	80	<0.1	43	<1	<1	<1	<50	<1	24	70	<1	2
739	Kerale Dam Seepage	<1	70	<0.1	51	<1	<1	<1	60	<1	26	15	<1	2
740	Kerale Dam Seepage													
741	Kerale Dam Seepage	<1	60	<0.1	35	<1	<1	26	120	<1	18	2490	<1	23
742	Kerale Dam Seepage	<1	<50	<0.1	14	<1	<1	<1	<50	<1	7	63	<1	<1
743	Kerale Dam Seepage	<1	<50	<0.1	24	<1	<1	33	100	<1	10	1700	<1	37
744	Kerale Dam Seepage	<1	<50	<0.1	18	<1	<1	13	<50	<1	8	573	<1	10
745	Kerale Dam Seepage	<1	60	<0.1	32	<1	<1	<1	<50	<1	14	<1	<1	2
746	Kerale Dam Seepage													
747	Kerale Dam Seepage													
748	Kerale Dam Seepage													
749	Kerale Dam Seepage	7	<50	<0.1	20	<1	<1	<1	120	<1	9	531	<1	1
750	Kerale Dam Seepage													
751	Kerale Dam Seepage													
752	Kerale Dam Seepage	3	80	<0.1	30	<1	<1	3	440	<1	13	239	<1	7
753	Kerale Dam Seepage	2	100	<0.1	30	<1	<1	<1	90	<1	15	51	<1	4

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
707	Kerale Dam Seepage													
708	Kerale Dam Seepage	2	65	0	0	0	0	10	0		0	0	0	7.8
709	Kerale Dam Seepage													
710	Kerale Dam Seepage													
711	Kerale Dam Seepage													
712	Kerale Dam Seepage													
713	Kerale Dam Seepage													
714	Kerale Dam Seepage													
715	Kerale Dam Seepage	3	92	0	0	0	0	12	0		0	0	0	4.8
716	Kerale Dam Seepage													
717	Kerale Dam Seepage													
718	Kerale Dam Seepage	7	597	<10	2	<1	<10	88	<0.1		<0.01	<0.01	<0.01	
719	Kerale Dam Seepage													
720	Kerale Dam Seepage													
721	Kerale Dam Seepage	14	636	<10	1	<1	<10	26	<0.1		<0.01	<0.01	<0.01	
722	Kerale Dam Seepage													
723	Kerale Dam Seepage													
724	Kerale Dam Seepage	6	220	<10	<1	<1	<10	<5	<0.1	0.02	<0.01	<0.01	<0.01	5.5
725	Kerale Dam Seepage													
726	Kerale Dam Seepage													
727	Kerale Dam Seepage	4	408	<10	<1	<1	<10	<5	<0.1	0.07	<0.01	<0.01	<0.01	8.5
728	Kerale Dam Seepage													
729	Kerale Dam Seepage	4	98	<10	<1	<1	<10	24	<0.1	0.04	<0.01	0.07	0.07	8.7
730	Kerale Dam Seepage													
731	Kerale Dam Seepage	7	409	<10	<1	<1	<10	<5	<0.1	0.03	<0.01	<0.01	<0.01	7.4
732	Kerale Dam Seepage	10	660	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	8.2
733	Kerale Dam Seepage													
734	Kerale Dam Seepage	11	161	<10	<1	<1	<10	20	<0.1	0.02	<0.01	<0.01	<0.01	4.6
735	Kerale Dam Seepage													
736	Kerale Dam Seepage													
737	Kerale Dam Seepage													
738	Kerale Dam Seepage	5	94	<10	<1	<1	<10	<5	<0.1	0.02	<0.01	<0.01	<0.01	6.9
739	Kerale Dam Seepage	2	96	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	6.7
740	Kerale Dam Seepage													
741	Kerale Dam Seepage	8	50	<10	<1	<1	<10	9	<0.1	0.04	<0.01	<0.01	<0.01	7.9
742	Kerale Dam Seepage	2	24	<10	<1	<1	<10	<5	<0.1	0.01	<0.01	<0.01	<0.01	7.2
743	Kerale Dam Seepage	4	24	<10	<1	<1	<10	37	<0.1	<0.01	<0.01	<0.01	<0.01	10
744	Kerale Dam Seepage	3	29	<10	<1	<1	<10	7	<0.1	<0.01	<0.01	<0.01	<0.01	7.8
745	Kerale Dam Seepage	6	57	<10	<1	<1	<10	<5	<0.1	0.05	<0.01	<0.01	<0.01	6.9
746	Kerale Dam Seepage													
747	Kerale Dam Seepage													
748	Kerale Dam Seepage													
749	Kerale Dam Seepage	6	25	<10	<1	<1	<10	45	<0.1	0.04	<0.01	<0.01	<0.01	3.8
750	Kerale Dam Seepage													
751	Kerale Dam Seepage													
752	Kerale Dam Seepage	6	45	<10	<1	<1	<10	24	<0.1	0.09	<0.01	<0.01	<0.01	6.8
753	Kerale Dam Seepage	6	46	<10	<1	<1	<10	7	<0.1	<0.01	<0.01	0.01	0.01	8.2

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	**Sample Site**	**Total Nitrogen as N (mg/L)**	**Total Phosphorus as P (mg/L)**	**Dissolved Oxygen (% saturation)**	**Acidity as CaCO3 (mg/L)**	**Total Hardness as CaCO3 (mg/L)**	**Dissolved Antimony (µg/L)**	**Dissolved Beryllium (µg/L)**	**Dissolved Lithium (µg/L)**	**Field Water Temperature (°C)**	**Total Kjeldahl Nitrogen as N (mg/L)**	**Dissolved Silicon (mg/L)**	**Comments/Observations**
707	Kerale Dam Seepage												
708	Kerale Dam Seepage	0.2	0.06		1	136	0	0	12	17.57	0.2		
709	Kerale Dam Seepage												
710	Kerale Dam Seepage												Dry
711	Kerale Dam Seepage												Dry
712	Kerale Dam Seepage												Dry
713	Kerale Dam Seepage												
714	Kerale Dam Seepage												
715	Kerale Dam Seepage	0.4	0.02		3	188	0	0	12	20.44	0.4		
716	Kerale Dam Seepage												
717	Kerale Dam Seepage												
718	Kerale Dam Seepage	0.6	0.02		7	1180	<1	1	66	15.1	0.6		
719	Kerale Dam Seepage												
720	Kerale Dam Seepage												
721	Kerale Dam Seepage	0.8	0.03		10	1390	<1	<1	80		0.8		
722	Kerale Dam Seepage												
723	Kerale Dam Seepage												
724	Kerale Dam Seepage	0.5	0.03		6	504	<1	<1	32	24.75	0.5		Clear
725	Kerale Dam Seepage												flowing
726	Kerale Dam Seepage												flowing
727	Kerale Dam Seepage	<1.0	<0.10		12	789	<1	<1	56	20.65	<1.0		in Pool
728	Kerale Dam Seepage												Dry
729	Kerale Dam Seepage	0.6	0.05		5	191	<1	<1	19		0.5		
730	Kerale Dam Seepage												
731	Kerale Dam Seepage	0.5	0.03		6	885	<1	<1	46	18.84	0.5		
732	Kerale Dam Seepage	0.5	<0.01		6	1490	<1	<1	92	15.35	0.5		
733	Kerale Dam Seepage												taken
734	Kerale Dam Seepage	0.8	0.04		17	512	<1	<1	36	26.44	0.8		
735	Kerale Dam Seepage												Too shallow.
736	Kerale Dam Seepage												Sampled.
737	Kerale Dam Seepage												Dry.
738	Kerale Dam Seepage	0.6	0.02		18	206	<1	<1	10	24.79	0.6		Clear.
739	Kerale Dam Seepage	0.4	<0.01		5	234	<1	<1	8	16.67	0.4		Sample clear.
740	Kerale Dam Seepage												only.
741	Kerale Dam Seepage	0.4	0.02		12	162	<1	<1	8	26.15	0.4		low water level
742	Kerale Dam Seepage	0.3	0.02		11	64	<1	<1	3	32.18	0.3		brown
743	Kerale Dam Seepage	0.4	0.04		11	101	<1	2	6	17.49	0.4		Low WL
744	Kerale Dam Seepage	0.7	0.07		11	78	<1	<1	5	29.76	0.7		
745	Kerale Dam Seepage	0.9	0.06		8	138	<1	<1	4		0.9		
746	Kerale Dam Seepage												vegetation
747	Kerale Dam Seepage												Dry
748	Kerale Dam Seepage												Dry
749	Kerale Dam Seepage	0.8	0.03		11	87	1	<1	2	23.64	0.8		Vegetation
750	Kerale Dam Seepage												Dry
751	Kerale Dam Seepage												Dry
752	Kerale Dam Seepage	1	0.03		9	128	<1	<1	8	27.68	1		covered in
753	Kerale Dam Seepage	1	0.02		2	137	<1	<1	3	20.8	1		Water level low

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
754	Kerale Dam Seepage @ Valve	02/08/2016 08:30:00	4.16			2690	1520	2300	0.2	92	0	0	0	0	3110
755	Kerale Dam Seepage @ Valve	06/09/2016 00:00:00		3.94	3,421										
756	Kerale Dam Seepage @ Valve	05/10/2016 00:00:00		5.25	4,050										
757	Kerale Dam Seepage @ Valve	14/12/2016 00:00:00													
758	Kerale Dam Seepage @ Valve	12/01/2017 00:00:00													
759	Kerale Dam Seepage @ Valve	15/03/2017 00:00:00													
760	Kerale Dam Seepage @ Valve	12/04/2017 00:00:00		4.43	1946										
761	Kerale Dam Seepage @ Valve	02/05/2017 08:00:00	3.58	3.61	3,155	3240	1810	2720	0.5	112	0	0	0	0	6520
762	Kerale Dam Seepage @ Valve	05/06/2017 00:00:00		3.63	3,686										
763	Kerale Dam Seepage @ Valve	13/07/2017 00:00:00		3.25	3,997										
764	Kerale Dam Seepage @ Valve	09/08/2017 08:20:00	3.43	3.38	4,034	4100	2500	3560	<0.5	90	<1	<1	<1	<1	8360
765	Kerale Dam Seepage @ Valve	06/09/2017 00:00:00		3.33	4,127										
766	Kerale Dam Seepage @ Valve	10/10/2017 00:00:00		3	4,204										
767	Kerale Dam Seepage @ Valve	07/11/2017 08:15:00	3.38			4180	2480	3030	<0.5	104	<1	<1	<1	<1	7090
768	Kerale Dam Seepage @ Valve	05/12/2017 00:00:00		4.97	765.1										
769	Kerale Dam Seepage @ Valve	09/01/2018 00:00:00		3.89	3,731										
770	Kerale Dam Seepage @ Valve	06/02/2018 07:40:00	3.96	3.58	3,715	3790	2230	3490	0.6	108	<1	<1	<1	<1	4250
771	Kerale Dam Seepage @ Valve	06/03/2018 00:00:00		3.41	3,617										
772	Kerale Dam Seepage @ Valve	05/04/2018 00:00:00		3.81	3,909										
773	Kerale Dam Seepage @ Valve	09/05/2018 09:40:00	4.05	3.88	4,130	3960	2510	3500	0.4	89	<1	<1	<1	<1	6210
774	Kerale Dam Seepage @ Valve	06/06/2018 00:00:00		3.6	4,025										
775	Kerale Dam Seepage @ Valve	07/08/2018 08:20:00	3.96	3.72	4,030	4070	2490	3740	<0.1	97	<1	<1	<1	<1	7990
776	Kerale Dam Seepage @ Valve	07/11/2018 07:45:00	4.14	4.05	3,550	3460	2080	3300	0.1	93	<1	<1	<1	<1	1830
777	Kerale Dam Seepage @ Valve	05/02/2019 09:55:00	6.51			3000	1730	2720	0.3	123	<1	<1	26	26	20
778	Kerale Dam Seepage @ Valve	08/05/2019 00:00:00													
779	Kerale Dam Seepage @ Valve	08/05/2019 09:45:00	4.43	4.05	3,783	3630	2290	3790	0.2	87	<1	<1	<1	<1	4130
780	Kerale Dam Seepage @ Valve	06/08/2019 08:20:00	4.22	4.33	3,895	3940	2860	4020	0.1	80	<1	<1	<1	<1	9530
781	Kerale Dam Seepage @ Valve	05/11/2019 12:44:00	3.94	3.56	3,911	3770	2580	3930	0.5	71	<1	<1	<1	<1	9120
782	Kerale Dam Seepage @ Valve	04/02/2020 08:20:00	3.45	3.63	4,022	4200	2400	2610	0.1	157	<1	<1	<1	<1	8770
783	Kerale Dam Seepage @ Valve	06/05/2020 09:00:00	4.42	4.24	3,994	3640	2520	3360	0.2	107	<1	<1	<1	<1	970
784	Kerale Dam Seepage @ Valve	02/09/2020 01:00:00													
785	Kerale Dam Seepage @ Valve	09/12/2020 15:40:00													
786	Kerale Dam Seepage @ Valve	09/03/2021 08:06:00	3.23	3.83	3,170	3290	1790	3180	<0.1	109	<1	<1	<1	<1	1230
787	Kerale Dam Seepage @ Valve	02/06/2021 09:00:00	3.78	6.06	3,489	3590	2550	3820	0.3	72	<1	<1	<1	<1	340
788	Kerale Dam Seepage @ Valve	07/09/2021 08:15:00	3.37	4.3	4267	4450	2770	4380	0.2	74	<1	<1	<1	<1	4070
789	Kerale Dam Seepage @ Valve	07/12/2021 09:00:00	2.76	2.83	4614	4630	2850	4190	0.4	102	<1	<1	<1	<1	10100
790	Kerale Dam Seepage @ Valve	28/02/2022 14:45:00	5.41	6.47	1992	1840	960	1590	0.1	52	<1	<1	4	4	<10
791	Kerale Dam Seepage @ Valve	31/05/2022 11:15:00	3.14	3.74	3496	3290	2000	2320	0.2	64	<1	<1	<1	<1	1090
792	Kerale Dam Seepage @ Valve	30/08/2022 11:00:00	2.97	4.75	3899	4320	2770	4110	<1.0	75	<1	<1	<1	<1	3520
793	Kerale Dam Seepage @ Valve	08/12/2022 11:35:00	5.85	5.16	1190	1140	525	895	0.1	46	<1	<1	9	9	<10
794	Kerale Dam Seepage @ Valve	09/03/2023 11:25:00	3.83			3530	2210	3800	0.2	59	<1	<1	<1	<1	160
795	Kerale Dam Seepage @ Valve	05/07/2023 11:10:00	3.5	4.23	3822	4000	2230	3210	<1.0	63	<1	<1	<1	<1	3120
796	Kerale Dam Seepage @ Valve	07/09/2023 01:00:00													
797	Kerale Dam Seepage @ Valve	28/11/2023 00:00:00													
798	Kerale Dam Upper	21/04/2012 00:00:00	2.83			5060	3140	5530		52					86.8
799	Kerale Dam Upper	09/05/2012 00:00:00	2.92			2840	1560	2590		22					39.7
800	Kerale Dam Upper	22/08/2012 00:00:00	3			3010	1920	2710		25					42.8

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Calcium (mg/L)	Dissolved Chromium (µg/L)	Dissolved Copper (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Magnesium (mg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Nickel (µg/L)
754	Kerale Dam Seepage @ Valve	0	340	0	278	0	2	65	1220	1	138	1840	0	103
755	Kerale Dam Seepage @ Valve													
756	Kerale Dam Seepage @ Valve													
757	Kerale Dam Seepage @ Valve													
758	Kerale Dam Seepage @ Valve													
759	Kerale Dam Seepage @ Valve													
760	Kerale Dam Seepage @ Valve													
761	Kerale Dam Seepage @ Valve	0	320	0.1	339	0	1	113	5080	1	149	1920	0	174
762	Kerale Dam Seepage @ Valve													
763	Kerale Dam Seepage @ Valve													
764	Kerale Dam Seepage @ Valve	<1	420	0.1	456	<1	<1	69	9040	4	216	1960	<1	118
765	Kerale Dam Seepage @ Valve													
766	Kerale Dam Seepage @ Valve													
767	Kerale Dam Seepage @ Valve	<1	420	0.1	479	<1	<1	55	2710	3	218	2000	<1	102
768	Kerale Dam Seepage @ Valve													
769	Kerale Dam Seepage @ Valve													
770	Kerale Dam Seepage @ Valve	<1	370	<0.1	441	<1	<1	39	690	2	224	1750	<1	78
771	Kerale Dam Seepage @ Valve													
772	Kerale Dam Seepage @ Valve													
773	Kerale Dam Seepage @ Valve	<1	500	0.1	430	<1	<1	37	210	3	232	1870	<1	81
774	Kerale Dam Seepage @ Valve													
775	Kerale Dam Seepage @ Valve	<1	420	0.1	526	<1	<1	38	290	3	233	1840	<1	94
776	Kerale Dam Seepage @ Valve	<1	330	<0.1	478	<1	<1	39	710	2	210	1870	<1	63
777	Kerale Dam Seepage @ Valve	<1	270	<0.1	286	<1	<1	48	21000	<1	149	1590	<1	34
778	Kerale Dam Seepage @ Valve													
779	Kerale Dam Seepage @ Valve	<1	390	<0.1	529	<1	<1	40	110	<1	252	1980	<1	92
780	Kerale Dam Seepage @ Valve	<1	420	0.1	511	<1	<1	42	130	2	241	1800	<1	93
781	Kerale Dam Seepage @ Valve	<1	480	0.1	437	<1	<1	36	170	4	207	1780	<1	89
782	Kerale Dam Seepage @ Valve	<1	410	0.9	419	<1	1	230	6750	3	218	3040	<1	332
783	Kerale Dam Seepage @ Valve	<1	440	<0.1	443	<1	<1	38	210	<1	244	1790	<1	85
784	Kerale Dam Seepage @ Valve													
785	Kerale Dam Seepage @ Valve													
786	Kerale Dam Seepage @ Valve	<1	300	<0.1	344	<1	<1	62	16700	<1	170	1760	<1	79
787	Kerale Dam Seepage @ Valve	<1	360	<0.1	474	<1	<1	32	87900	<1	215	2130	<1	56
788	Kerale Dam Seepage @ Valve	<1	450	0.2	548	<1	<1	129	132000	<1	281	3590	<1	231
789	Kerale Dam Seepage @ Valve	2	400	0.6	441	1	6	469	174000	3	208	3650	<1	748
790	Kerale Dam Seepage @ Valve	<1	200	<0.1	212	<1	<1	22	50400	<1	84	1080	<1	11
791	Kerale Dam Seepage @ Valve	<1	290	0.2	392	<1	3	174	108000	<1	161	2650	<1	230
792	Kerale Dam Seepage @ Valve	1	280	0.4	460	<1	7	80	44600	4	240	2230	<1	121
793	Kerale Dam Seepage @ Valve	<1	140	<0.1	126	<1	<1	22	<50	<1	42	868	<1	20
794	Kerale Dam Seepage @ Valve	<1	410	<0.1	458	<1	<1	26	3400	<1	202	1890	<1	54
795	Kerale Dam Seepage @ Valve	<1	410	0.2	446	<1	1	36	2100	<1	237	1930	<1	71
796	Kerale Dam Seepage @ Valve													
797	Kerale Dam Seepage @ Valve													
798	Kerale Dam Upper	<0.001	0.1	0.0071	550	0.005	0.021	0.744	4.28	0.008	392	32.1	<0.001	1.26
799	Kerale Dam Upper	<0.001	<0.05	0.0037	232	0.002	0.036	0.456	17.1	0.002	173	13.9	<0.001	0.691
800	Kerale Dam Upper	<0.001	<0.05	0.0035	280	0.001	0.021	0.448	3.34	0.003	207	17	<0.001	0.7

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
754	Kerale Dam Seepage @ Valve	16	171	0	0	0	0	217	0		0	0	0	8
755	Kerale Dam Seepage @ Valve													
756	Kerale Dam Seepage @ Valve													
757	Kerale Dam Seepage @ Valve													
758	Kerale Dam Seepage @ Valve													
759	Kerale Dam Seepage @ Valve													
760	Kerale Dam Seepage @ Valve													
761	Kerale Dam Seepage @ Valve	14	193	0	0	0	0	285	0		0	0	0	5.3
762	Kerale Dam Seepage @ Valve													
763	Kerale Dam Seepage @ Valve													
764	Kerale Dam Seepage @ Valve	12	252	<10	<1	<1	<10	282	<0.1		<0.01	<0.01	<0.01	
765	Kerale Dam Seepage @ Valve													
766	Kerale Dam Seepage @ Valve													
767	Kerale Dam Seepage @ Valve	15	229	<10	<1	<1	<10	267	<0.1		<0.01	<0.01	<0.01	
768	Kerale Dam Seepage @ Valve													
769	Kerale Dam Seepage @ Valve													
770	Kerale Dam Seepage @ Valve	13	206	<10	<1	<1	<10	197	<0.1		<0.01	<0.01	<0.01	4.6
771	Kerale Dam Seepage @ Valve													
772	Kerale Dam Seepage @ Valve													
773	Kerale Dam Seepage @ Valve	12	221	<10	<1	<1	<10	260	<0.1	<0.10	<0.10	<0.10	<0.10	6.8
774	Kerale Dam Seepage @ Valve													
775	Kerale Dam Seepage @ Valve	13	235	<10	<1	<1	<10	263	<0.1	0.03	<0.01	0.03	0.03	7.3
776	Kerale Dam Seepage @ Valve	16	204	<10	<1	<1	<10	174	<0.1	0.03	<0.01	<0.01	<0.01	6.1
777	Kerale Dam Seepage @ Valve	12	178	<10	<1	<1	<10	31	<0.1	0.03	<0.01	<0.01	<0.01	4.3
778	Kerale Dam Seepage @ Valve													
779	Kerale Dam Seepage @ Valve	14	238	<10	<1	<1	<10	262	<0.1	0.03	<0.01	<0.01	<0.01	7.9
780	Kerale Dam Seepage @ Valve	12	221	<10	<1	<1	<10	329	<0.1	0.01	<0.01	<0.01	<0.01	7.8
781	Kerale Dam Seepage @ Valve	10	172	<10	<1	<1	<10	538	<0.1	<0.01	<0.01	<0.01	<0.01	4.8
782	Kerale Dam Seepage @ Valve	27	264	<10	<1	<1	<10	1240	<0.1	0.95	<0.01	<0.50	<0.50	3.3
783	Kerale Dam Seepage @ Valve	13	225	<10	<1	<1	<10	195	<0.1	0.01	<0.01	<0.01	<0.01	6.8
784	Kerale Dam Seepage @ Valve													
785	Kerale Dam Seepage @ Valve													
786	Kerale Dam Seepage @ Valve	23	165	<10	<1	<1	<10	123	<0.1	0.29	<0.01	0.01	0.01	6.4
787	Kerale Dam Seepage @ Valve	15	174	<10	<1	<1	<10	63	<0.1	0.86	<0.10	0.14	0.14	4.2
788	Kerale Dam Seepage @ Valve	18	211	<10	<1	<1	<10	776	<0.1	2.77	<0.01	<0.01	<0.01	3.1
789	Kerale Dam Seepage @ Valve	26	208	<10	<1	<1	<10	1900	<0.1	11.1	<0.50	<0.50	<0.50	1.7
790	Kerale Dam Seepage @ Valve	14	97	<10	<1	<1	<10	5	<0.1	0.38	<0.01	<0.01	<0.01	5.4
791	Kerale Dam Seepage @ Valve	17	154	<10	<1	<1	<10	422	<0.1	6.84	<0.01	<0.01	<0.01	4.3
792	Kerale Dam Seepage @ Valve	15	206	<10	<1	<1	<10	562	<0.1	4.51	0.02	<0.10	0.11	5.2
793	Kerale Dam Seepage @ Valve	9	65	<10	<1	<1	<10	26	<0.1	0.39	<0.01	<0.01	<0.01	7.8
794	Kerale Dam Seepage @ Valve	11	171	<10	<1	<1	<10	64	<0.1	0.09	<0.01	<0.01	<0.01	4.7
795	Kerale Dam Seepage @ Valve	12	200	<10	<1	<1	<10	307	<0.1	1.83	<0.01	0.09	0.09	3.8
796	Kerale Dam Seepage @ Valve													
797	Kerale Dam Seepage @ Valve													
798	Kerale Dam Upper	18	115	<0.01	<0.001	0.01	<0.01	2.98	<0.0001		0.02	0.03	0.05	
799	Kerale Dam Upper	6	55	<0.01	<0.001	0.006	<0.01	2	<0.0001		0.07	0.02	0.09	
800	Kerale Dam Upper	9	66	<0.01	<0.001	0.005	<0.01	1.8	<0.0001		0.02	0.03	0.05	

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	**Sample Site**	**Total Nitrogen as N (mg/L)**	**Total Phosphorus as P (mg/L)**	**Dissolved Oxygen (% saturation)**	**Acidity as CaCO3 (mg/L)**	**Total Hardness as CaCO3 (mg/L)**	**Dissolved Antimony (µg/L)**	**Dissolved Beryllium (µg/L)**	**Dissolved Lithium (µg/L)**	**Field Water Temperature (°C)**	**Total Kjeldahl Nitrogen as N (mg/L)**	**Dissolved Silicon (mg/L)**	**Comments/Observations**
754	Kerale Dam Seepage @ Valve	0.3	0.02		61	1260	0	4	51		0.3		
755	Kerale Dam Seepage @ Valve												
756	Kerale Dam Seepage @ Valve												
757	Kerale Dam Seepage @ Valve												Dry
758	Kerale Dam Seepage @ Valve												Dry
759	Kerale Dam Seepage @ Valve												Dry
760	Kerale Dam Seepage @ Valve												
761	Kerale Dam Seepage @ Valve	0.6	0.03		77	1460	0	6	57	20.03	0.6		
762	Kerale Dam Seepage @ Valve												
763	Kerale Dam Seepage @ Valve												
764	Kerale Dam Seepage @ Valve	0.7	0.01		124	2030	<1	5	82	16.54	0.7		
765	Kerale Dam Seepage @ Valve												
766	Kerale Dam Seepage @ Valve												
767	Kerale Dam Seepage @ Valve	0.3	0.02		93	2090	<1	4	84		0.3		
768	Kerale Dam Seepage @ Valve												
769	Kerale Dam Seepage @ Valve												
770	Kerale Dam Seepage @ Valve	0.3	0.03		51	2020	<1	3	66	24.32	0.3		Clear
771	Kerale Dam Seepage @ Valve												Clear
772	Kerale Dam Seepage @ Valve												Clear
773	Kerale Dam Seepage @ Valve	<1.0	<0.10		62	2030	<1	5	89	21.09	<1.0		in Pool
774	Kerale Dam Seepage @ Valve												Clear
775	Kerale Dam Seepage @ Valve	0.2	<0.01		65	2270	<1	4	85	17.93	0.2		
776	Kerale Dam Seepage @ Valve	0.7	0.03		26	2060	<1	2	71	23.88	0.7		Water level low.
777	Kerale Dam Seepage @ Valve	1.1	0.06		6	1330	<1	<1	38		1.1		
778	Kerale Dam Seepage @ Valve												
779	Kerale Dam Seepage @ Valve	0.4	0.03		60	2360	<1	4	77	18.61	0.4		
780	Kerale Dam Seepage @ Valve	<0.1	<0.01		81	2270	<1	5	90	14.92	<0.1		
781	Kerale Dam Seepage @ Valve	0.8	0.06		91	1940	<1	5	100	25	0.8		
782	Kerale Dam Seepage @ Valve	1.6	0.05		161	1940	<1	9	102	25.75	1.6		
783	Kerale Dam Seepage @ Valve	0.5	0.03		19	2110	<1	2	64	17.81	0.5		
784	Kerale Dam Seepage @ Valve												Sampled.
785	Kerale Dam Seepage @ Valve												Dry.
786	Kerale Dam Seepage @ Valve	0.9	0.02		124	1560	<1	1	56	24.73	0.9		petrochemical
787	Kerale Dam Seepage @ Valve	3.5	0.16		114	2070	<1	1	55	18.41	3.4		colour.
788	Kerale Dam Seepage @ Valve	7.7	0.32		193	2520	<1	5	66	15.25	7.7		below. Heavily
789	Kerale Dam Seepage @ Valve	12.7	0.04		511	1960	<1	11	89	24.17	12.7		orange colour
790	Kerale Dam Seepage @ Valve	1.4	0.02		52	875	<1	<1	27	28.71	1.4		Cloudy brown
791	Kerale Dam Seepage @ Valve	8.1	0.04		184	1640	<1	2	56	18.68	8.1		Low WL
792	Kerale Dam Seepage @ Valve	11.3	0.36		245	2140	<1	5	46	23.46	11.2		water level
793	Kerale Dam Seepage @ Valve	1	0.03		11	488	<1	<1	16	28.9	1		
794	Kerale Dam Seepage @ Valve	0.3	<0.01		39	1980	<1	<1	73		0.3		
795	Kerale Dam Seepage @ Valve	2.3	<0.01		108	2090	<1	2	68	22.37	2.2		Murky yellow
796	Kerale Dam Seepage @ Valve												Dry
797	Kerale Dam Seepage @ Valve												Dry
798	Kerale Dam Upper	3	0.03		708		<0.001				3		
799	Kerale Dam Upper	0.3	0.02		390		<0.001				0.2		
800	Kerale Dam Upper	0.8	<0.01		331		<0.001				0.8		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample Site	Date/Time Sampled	Lab pH (pH Unit)	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Lab Electrical Conductivity (µS/cm)	Sulfate as SO4 (mg/L)	Total Dissolved Solids (mg/L)	Fluoride (mg/L)	Dissolved Chloride (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Dissolved Aluminium (µg/L)
801	Kerale Dam Upper	05/02/2013 00:00:00	2.97			2600	1650	2400		10					55.7
802	Kerale Dam Upper	08/05/2013 00:00:00	2.86			2970	1910	2580		14					54.5
803	Kerale Dam Upper	22/08/2013 00:00:00	2.87			4180	2720	8130		43					90.8
804	PC3M	31/01/2022 13:10:00	8.39			993	46	595	0.3	148	<1	10	281	291	<10
805	PC3M	02/08/2022 11:40:00	8.39	7.84	1058	1050	45	617	0.3	143	<1	12	272	284	<10
806	PC3M	04/04/2023 16:00:00	7.31	7.48	114.8	285	22	367	0.2	25	<1	<1	84	84	<10
807	PC3M	06/02/2024 17:00:00	7.95	7.21	643	658	36		0.3						<10
808	PC3M	12/02/2025 10:15:00	7.89	7.72	428	415	17		0.2						<10
809	Pelican Creek Myuna Rd. Crossing	03/04/2017 00:00:00		7.38	651										
810	Pelican Creek Myuna Rd. Crossing	03/04/2017 16:30:00	7.81			639	48	363	0.2	72	0	0	159	159	110
811	Pelican Creek Myuna Rd. Crossing	05/04/2017 00:00:00		7.84	740										
812	Pelican Creek Myuna Rd. Crossing	05/04/2017 16:25:00	8.06			702	53	430	0.3	95	0	0	172	172	30
813	Pelican Creek Myuna Rd. Crossing	08/12/2020 10:00:00													
814	Pelican Creek Myuna Rd. Crossing	08/12/2020 15:30:00		0											
815	Pelican Creek Myuna Rd. Crossing	09/03/2021 01:00:00													
816	Pelican Creek Myuna Rd. Crossing	01/06/2021 07:45:00	7.88	7.15	1520	1620	74	989	0.4	311	<1	<1	411	411	<10
817	Pelican Creek Myuna Rd. Crossing	03/06/2021 15:10:00		0											
818	Pelican Creek Myuna Rd. Crossing	07/09/2021 00:00:00		0											
819	Pelican Creek Myuna Rd. Crossing	07/09/2021 17:20:00	8.18	7.73	1493	1510	72	1030	0.3	302	<1	<1	303	303	<10
820	Pelican Creek Myuna Rd. Crossing	07/12/2021 12:00:00	7.94			1580	92	868	0.4	295	<1	<1	343	343	<10.000
821	Pelican Creek Myuna Rd. Crossing	06/01/2022 00:00:00	8.09	7.17	1023	994	55	591	0.4	153	<1	<1	270	270	<10
822	Pelican Creek Myuna Rd. Crossing	31/01/2022 12:50:00	8.24	7.18	1152	1070	44	647	0.4	160	<1	<1	315	315	<10
823	Pelican Creek Myuna Rd. Crossing	01/06/2022 15:30:00	8.27			1280	48	715	0.4	191	<1	<1	316	316	<10
824	Pelican Creek Myuna Rd. Crossing	02/08/2022 11:55:00	8.34	7.6	1117	1070	46	634	0.3	150	<1	7	277	284	<10
825	Pelican Creek Myuna Rd. Crossing	30/08/2022 15:15:00	8.25	7.32	1368	1460	46	852	0.4	238	<1	<1	403	403	<10
826	Pelican Creek Myuna Rd. Crossing	05/12/2022 17:00:00	7.92	7.41	1254	1220	56	716	0.3	191	<1	<1	321	321	<10
827	Pelican Creek Myuna Rd. Crossing	04/04/2023 16:30:00	7.34	8.18	293	289	24	426	0.2	26	<1	<1	84	84	<10
828	Pelican Creek Myuna Rd. Crossing	28/05/2023 00:00:00													
829	Pelican Creek Myuna Rd. Crossing	04/09/2023 01:00:00													
830	Pelican Creek Myuna Rd. Crossing	28/11/2023 00:00:00													
831	Pelican Creek Myuna Rd. Crossing	06/02/2024 16:45:00	7.89	7.14	667	658	36		0.3						<10
832	Pelican Creek Myuna Rd. Crossing	12/02/2025 10:00:00	7.97	7.65	417	388	20		0.2						<10
833															
834				0	114.8										
835				4.6	2889.1										
836				8.33	12350										
837				186	151										
838															
839															
840				0	114.8										
841				5.6	2914.6										
842				186	12350										
843				195	155										
844															
845															
846				0.0	114.8										
847				11.1	2495.5										

	A	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
1	**Sample Site**	**Dissolved Arsenic (µg/L)**	**Dissolved Boron (µg/L)**	**Dissolved Cadmium (µg/L)**	**Dissolved Calcium (mg/L)**	**Dissolved Chromium (µg/L)**	**Dissolved Copper (µg/L)**	**Dissolved Cobalt (µg/L)**	**Dissolved Iron (µg/L)**	**Dissolved Lead (µg/L)**	**Dissolved Magnesium (mg/L)**	**Dissolved Manganese (µg/L)**	**Dissolved Molybdenum (µg/L)**	**Dissolved Nickel (µg/L)**
801	Kerale Dam Upper	<0.001	<0.05	0.0054	193	0.003	0.048	0.44	68	0.002	160	15.1	<0.001	0.721
802	Kerale Dam Upper	<0.001	0.06	0.0044	265	0.003	0.022	0.481	4.35	0.003	189	18.1	<0.001	0.752
803	Kerale Dam Upper	0.006	0.08	0.007	506	0.006	0.024	0.754	4.43	0.006	299	27.2	<0.001	1.18
804	PC3M	3	50	<0.1	71	<1	<1	<1	<50	<1	33	332	<1	<1
805	PC3M	1	<50	<0.1	50	<1	<1	<1	<50	<1	38	24	1	<1
806	PC3M	2	<50	<0.1	18	<1	2	<1	<50	<1	7	<1	1	1
807	PC3M	3	<50	<0.1		<1	1	<1	<50	<1		47	<1	<1
808	PC3M	2	<50	<0.1		<1	<1	<1	<50	<1		<1	<1	<1
809	Pelican Creek Myuna Rd. Crossing													
810	Pelican Creek Myuna Rd. Crossing	1	0	0	40	0	1	0	60	0	19	7	0	0
811	Pelican Creek Myuna Rd. Crossing													
812	Pelican Creek Myuna Rd. Crossing	2	0	0	45	0	0	0	0	0	22	0	0	0
813	Pelican Creek Myuna Rd. Crossing													
814	Pelican Creek Myuna Rd. Crossing													
815	Pelican Creek Myuna Rd. Crossing													
816	Pelican Creek Myuna Rd. Crossing	2	<50	<0.1	113	<1	<1	<1	1380	<1	56	602	<1	<1
817	Pelican Creek Myuna Rd. Crossing													
818	Pelican Creek Myuna Rd. Crossing													
819	Pelican Creek Myuna Rd. Crossing	2	<50	<0.1	71	<1	<1	<1	<50	<1	56	33	1	<1
820	Pelican Creek Myuna Rd. Crossing	2	<50.0000	<0.10	97	<1.00	<1.0000	<1.00	<50.000	<1.0000	49	274	1	<1.0000
821	Pelican Creek Myuna Rd. Crossing	2	50	<0.1	61	<1	<1	<1	<50	<1	32	2	1	<1
822	Pelican Creek Myuna Rd. Crossing	3	50	<0.1	76	<1	<1	<1	<50	<1	35	259	<1	<1
823	Pelican Creek Myuna Rd. Crossing	2	<50	<0.1	83	<1	<1	<1	100	<1	44	348	<1	<1
824	Pelican Creek Myuna Rd. Crossing	1	<50	<0.1	71	<1	<1	<1	<50	<1	40	67	<1	<1
825	Pelican Creek Myuna Rd. Crossing	3	<50	<0.1	84	<1	<1	<1	390	<1	49	426	<1	<1
826	Pelican Creek Myuna Rd. Crossing	2	50	<0.1	84	<1	<1	<1	<50	<1	43	185	<1	<1
827	Pelican Creek Myuna Rd. Crossing	2	<50	<0.1	18	<1	2	<1	<50	<1	7	<1	1	1
828	Pelican Creek Myuna Rd. Crossing													
829	Pelican Creek Myuna Rd. Crossing													
830	Pelican Creek Myuna Rd. Crossing													
831	Pelican Creek Myuna Rd. Crossing	3	<50	<0.1		<1	2	<1	<50	<1		60	<1	<1
832	Pelican Creek Myuna Rd. Crossing	1	<50	<0.1		<1	<1	<1	<50	<1		<1	<1	<1
833														
834														
835														
836														
837														
838														
839														
840														
841														
842														
843														
844														
845														
846														
847														

	A	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
1	**Sample Site**	**Dissolved Potassium (mg/L)**	**Dissolved Sodium (mg/L)**	**Dissolved Selenium (µg/L)**	**Dissolved Silver (µg/L)**	**Dissolved Uranium (µg/L)**	**Dissolved Vanadium (µg/L)**	**Dissolved Zinc (µg/L)**	**Dissolved Mercury (µg/L)**	**Ammonia as N (mg/L)**	**Nitrite as N (mg/L)**	**Nitrate as N (mg/L)**	**Nitrite + Nitrate as N (mg/L)**	**Lab Dissolved Oxygen (mg/L)**
801	Kerale Dam Upper	5	36	<0.01	<0.001	0.01	<0.01	2.45	<0.0001		0.1	0.19	0.29	
802	Kerale Dam Upper	9	45	<0.01	<0.001	0.006	<0.01	2.27	<0.0001		0.03	0.02	0.05	
803	Kerale Dam Upper	16	79	0.04	<0.001	0.01	<0.01	3.36	<0.0001		<0.01	0.02	0.02	
804	PC3M	2	108	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	9.4
805	PC3M	2	114	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	8.5
806	PC3M	4	34	<10	<1	<1	<10	<5	<0.1	0.02	0.02	0.54	0.56	7.8
807	PC3M			<10	<1	<1	<10	<5	<0.1	<0.01		0.12	0.13	8.8
808	PC3M			<10	<1	<1	<10	<5	<0.1	0.02		0.3	0.3	10
809	Pelican Creek Myuna Rd. Crossing													
810	Pelican Creek Myuna Rd. Crossing	4	65	0	0	0	0	0	0		0.03	1.54	1.57	
811	Pelican Creek Myuna Rd. Crossing													
812	Pelican Creek Myuna Rd. Crossing	4	72	0	0	0	0	0	0		0.02	1.29	1.31	
813	Pelican Creek Myuna Rd. Crossing													
814	Pelican Creek Myuna Rd. Crossing													
815	Pelican Creek Myuna Rd. Crossing													
816	Pelican Creek Myuna Rd. Crossing	2	166	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	6.8
817	Pelican Creek Myuna Rd. Crossing													
818	Pelican Creek Myuna Rd. Crossing													
819	Pelican Creek Myuna Rd. Crossing	4	153	<10	<1	1	<10	<5	<0.1	0.04	<0.01	<0.01	<0.01	9.4
820	Pelican Creek Myuna Rd. Crossing	2	153	<10.0000	<1.0000	2	<10.0000	<5.00	<0.1000		<0.01	<0.01	<0.01	
821	Pelican Creek Myuna Rd. Crossing	2	109	<10	<1	<1	<10	<5	<0.1	0.02	<0.01	<0.01	<0.01	9.6
822	Pelican Creek Myuna Rd. Crossing	2	119	<10	<1	<1	<10	<5	<0.1	0.05	<0.01	<0.01	<0.01	9.9
823	Pelican Creek Myuna Rd. Crossing	2	127	<10	<1	<1	<10	<5	<0.1	0.06	<0.01	<0.01	<0.01	8
824	Pelican Creek Myuna Rd. Crossing	2	118	<10	<1	<1	<10	<5	<0.1	0.02	<0.01	<0.01	<0.01	8.3
825	Pelican Creek Myuna Rd. Crossing	2	145	<10	<1	<1	<10	<5	<0.1	0.04	<0.01	<0.01	<0.01	7.5
826	Pelican Creek Myuna Rd. Crossing	2	139	<10	<1	<1	<10	<5	<0.1	<0.01	<0.01	<0.01	<0.01	7.1
827	Pelican Creek Myuna Rd. Crossing	4	36	<10	<1	<1	<10	<5	<0.1	0.07	0.02	0.55	0.57	7.4
828	Pelican Creek Myuna Rd. Crossing													
829	Pelican Creek Myuna Rd. Crossing													
830	Pelican Creek Myuna Rd. Crossing													
831	Pelican Creek Myuna Rd. Crossing			<10	<1	<1	<10	<5	<0.1	0.01		0.11	0.12	8.9
832	Pelican Creek Myuna Rd. Crossing			<10	<1	<1	<10	<5	<0.1	0.07		0.29	0.3	9.9
833														
834														
835														
836														
837														
838														
839														
840														
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842														
843														
844														
845														
846														
847														

	A	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1	**Sample Site**	**Total Nitrogen as N (mg/L)**	**Total Phosphorus as P (mg/L)**	**Dissolved Oxygen (% saturation)**	**Acidity as CaCO3 (mg/L)**	**Total Hardness as CaCO3 (mg/L)**	**Dissolved Antimony (µg/L)**	**Dissolved Beryllium (µg/L)**	**Dissolved Lithium (µg/L)**	**Field Water Temperature (°C)**	**Total Kjeldahl Nitrogen as N (mg/L)**	**Dissolved Silicon (mg/L)**	**Comments/Observations**
801	Kerale Dam Upper	0.7	0.02		550		<0.001				0.4		
802	Kerale Dam Upper	1.2	<0.01		488		<0.001				1.2		
803	Kerale Dam Upper	2.6	4.43		597		<0.001				2.6		
804	PC3M	<0.1	0.07		<1	313	<1	<1	3		<0.1		
805	PC3M	0.1	0.04		<1	281	<1	<1	3	22.78	0.1		
806	PC3M	1.9	0.6		2	74	<1	<1	2	30.14	1.3		
807	PC3M	0.5	0.16			192				29.09	0.4		
808	PC3M	0.5	0.16			132				28.72	0.2		
809	Pelican Creek Myuna Rd. Crossing												
810	Pelican Creek Myuna Rd. Crossing	2.3	0.16		6	178	0	0	2		0.7		
811	Pelican Creek Myuna Rd. Crossing												
812	Pelican Creek Myuna Rd. Crossing	1.8	0.14		4	203	0	0	2		0.5		
813	Pelican Creek Myuna Rd. Crossing												Dry.
814	Pelican Creek Myuna Rd. Crossing												Dry.
815	Pelican Creek Myuna Rd. Crossing												
816	Pelican Creek Myuna Rd. Crossing	0.5	0.49		5	513	<1	<1	3	16.09	0.5		U/S side of
817	Pelican Creek Myuna Rd. Crossing												Dry.
818	Pelican Creek Myuna Rd. Crossing												Dry. NST.
819	Pelican Creek Myuna Rd. Crossing	1.1	0.04		<1	408	<1	<1	4	26.53	1.1		Water pooled
820	Pelican Creek Myuna Rd. Crossing	0.2	0.07		18	444	<1.0000	<1.00	5		0.2		
821	Pelican Creek Myuna Rd. Crossing	0.2	0.06		7	284	<1	<1	4	31.77	0.2		approx 10L sec
822	Pelican Creek Myuna Rd. Crossing	<0.1	0.11		2	334	<1	<1	4	31.52	<0.1		
823	Pelican Creek Myuna Rd. Crossing	0.2	0.08		<1	388	<1	<1	3		0.2		
824	Pelican Creek Myuna Rd. Crossing	0.2	0.06		2	342	<1	<1	4	23.96	0.2		
825	Pelican Creek Myuna Rd. Crossing	0.2	0.08		<1	412	<1	<1	4	23.1	0.2		approx 5L Sec
826	Pelican Creek Myuna Rd. Crossing	0.1	0.06		4	387	<1	<1	4	33.02	0.1		
827	Pelican Creek Myuna Rd. Crossing	3	1.06		2	74	<1	<1	2	31.14	2.4		
828	Pelican Creek Myuna Rd. Crossing												Dry
829	Pelican Creek Myuna Rd. Crossing												Dry
830	Pelican Creek Myuna Rd. Crossing												Dry
831	Pelican Creek Myuna Rd. Crossing	0.4	0.16			183				29.12	0.3		
832	Pelican Creek Myuna Rd. Crossing	0.6	0.15			136				28.17	0.3		
833													
834													
835													
836													
837													
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APPENDIX E2 GROUNDWATER MONITORING DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Sample Site	Date/Time Sampled	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Total Dissolved Solids (mg/L)	Sulfate as SO4 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Chloride (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Mercury (µg/L)	Dissolved Barium (µg/L)	Dissolved Antimony (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Boron (µg/L)
2	**K01**	19/05/2020 00:00:00				2540							<1.0000			<1.0000		350
3	**K01**	03/08/2020 15:20:00	4.72	4105	3950	2280	1780	108	480	142	299	38	<0.1000	22	<1.0000	<1.0000	5	340
4	**K01**	02/09/2020 10:00:00	5.91	4178	3560	2100	1840	180	493	149	344	29	<0.1000	45	<1.0000	<1.0000	<1.00	330
5	**K01**	14/10/2020 13:21:00	6.06	4134	3960	2380	1880	118	508	148	320	36	<0.1000	28	<1.0000	2	2	320
6	**K01**	03/11/2020 08:00:00	4.5	4068	3790	2430	1980	104	528	160	308	39	<0.1000	24	<1.0000	<1.0000	5	320
7	**K01**	10/12/2020 06:40:00	6	4089	4030	2310	1920	130	485	173	348	34	<0.1000	36	2	<1.0000	1	390
8	**K01**	06/01/2021 09:00:00	4.53	4096	3860	2340	1980	104	525	163	332	36	<0.0001	0.025	<0.0010	<0.0010	0.006	0.32
9	**K01**	10/02/2021 11:20:00	5.55	4259	3680	2540	2070	109	557	166	335	39	<0.1000	38	2	<1.0000	2	380
10	**K01**	17/03/2021 09:55:00	4	4029	3640	2490	1860	87	494	152	319	41	<0.1000	18	<1.0000	<1.0000	6	240
11	**K01**	06/04/2021 08:40:00	5.16	4054	4020	2460	1940	108	508	162	338	36	<0.1000	26	<1.0000	<1.0000	4	390
12	**K01**	11/05/2021 16:20:00	5.79	3952	3990	2280	1810	115	477	150	318	36	<0.1000	26	<1.0000	<1.0000	2	350
13	**K01**	09/06/2021 13:40:00	4.06	4100	4010	2370	1910	90	504	158	324	43	<0.1000	17	<1.0000	<1.0000	6	420
14	**K01**	07/07/2021 16:10:00	4.06	3967	3920	2550	1850	82	502	144	294	39	<0.1000	27	<1.0000	<1.0000	6	350
15	**K01**	04/08/2021 16:05:00	4.2	4078	3920	2540	1890	94	516	147	296	40	<0.1000	30	<1.0000	1	6	320
16	**K01**	16/09/2021 08:50:00	3.91	4015	3980	2380	1950	90	517	160	326	44	<0.1000	15	<1.0000	<1.0000	5	280
17	**K01**	07/12/2021 09:10:00	3.58	4120	3840	2390	1880	95	503	152	310	37	<0.1000	16	<1.0000	<1.0000	6	320
18	**K01**	02/03/2022 17:10:00	3.77	4019	3960	2320	1760	81	449	154	313	39	<0.1000	16	<1.0000	<1.0000	8	390
19	**K01**	31/05/2022 12:00:00	3.89	4031	3510	2520	1730	75	448	148	293	35	<0.1000	21	<1.0000	<1.0000	6	360
20	**K01**	30/08/2022 13:15:00	3.82	4063	3870	2430	1950	86	501	169	302	38	<0.1000	15	<1.0000	<1.0000	7	330
21	**K01**	02/02/2023 10:20:00	4.45	4012	4260	2610	1900	69	510	153	284	38	<0.1000	72	<1.0000	<1.0000	8	420
22	**K01**	27/03/2023 15:40:00	3.55	4036	3840	2420	1820	78	474	154	289	36	<0.1000	12	<1.0000	<1.0000	5	310
23	**K01**	26/06/2023 13:40:00			3940	2460	1930	72	508	161	286	37	<0.1000	61	<1.0000	1	7	340
24	**K01**	07/09/2023 15:00:00	3.45	3949	4070	1850	1770	84	460	151	260	34	<0.1000	13	<1.0000	<1.0000	6	300
25	**K01**	15/12/2023 08:00:00	3.78	4011	3880	2520	2070	91	544	172	277	36	<0.1000	14	<1.0000	<1.0000	6	300
26	**K01**	03/06/2025 12:20:00	4.42	3970	3720	2180	1760	110	464	146	240	30	<0.1000	25	<1.0000	<1.0000	5	310
27	**K02**	19/05/2020 00:00:00				2630							<1.0000			<1.0000		440
28	**K02**	03/08/2020 16:55:00	6.68	6331	5480	2280	2130	836	542	189	688	21	<0.1000	18	<1.0000	<1.0000	<1.00	450
29	**K02**	02/09/2020 10:40:00	5.2	6191	5270	2510	2260	825	584	195	677	21	<0.1000	22	<1.0000	<1.0000	2	490
30	**K02**	14/10/2020 13:50:00	5.27	5931	4970	2370	2070	738	537	178	670	21	<0.1000	10	<1.0000	<1.0000	3	480
31	**K02**	03/11/2020 09:20:00	5.26	5925	5050	2360	2180	751	550	195	676	24	<0.1000	13	<1.0000	<1.0000	3	450
32	**K02**	10/12/2020 07:00:00	5.56	5811	5140	2310	2030	710	496	193	679	21	<0.1000	19	<1.0000	<1.0000	4	540
33	**K02**	06/01/2021 10:20:00	5.42	6021	3730	2300	2070	720	520	188	693	20	<0.0001	0.012	<0.0010	<0.0010	0.003	0.45
34	**K02**	10/02/2021 11:50:00	5.66	5963	4860	2460	2160	675	554	188	678	22	<0.1000	21	1	<1.0000	3	520
35	**K02**	17/03/2021 10:50:00	5.28	5788	4870	2390	2030	730	514	181	689	21	<0.1000	12	<1.0000	<1.0000	1	340
36	**K02**	06/04/2021 00:00:00																
37	**K02**	11/05/2021 16:50:00	5.51	5516	5070	2320	2040	706	521	180	645	21	<0.1000	13	<1.0000	<1.0000	3	470
38	**K02**	09/06/2021 14:30:00	5.78	5759	4830	2290	2080	688	526	185	710	22	<0.1000	13	<1.0000	<1.0000	3	590
39	**K02**	07/07/2021 17:00:00	5.75	5655	4970	2380	1970	659	511	168	652	21	<0.1000	18	<1.0000	<1.0000	2	500
40	**K02**	04/08/2021 17:10:00	5.98	5695	4780	2440	2010	686	521	172	646	20	<0.1000	11	<1.0000	<1.0000	2	510
41	**K02**	16/09/2021 10:00:00	7.18	5646	4730	2290	2170	713	549	194	739	25	<0.1000	12	<1.0000	<1.0000	<1.00	400
42	**K02**	07/12/2021 10:10:00	5.29	5911	4510	2300	2040	744	523	178	671	20	<0.1000	10	<1.0000	<1.0000	4	480
43	**K02**	03/03/2022 07:40:00	5.36	5824	4980	2200	1980	703	504	176	682	20	<0.1000	95	<1.0000	2	4	520
44	**K02**	31/05/2022 14:35:00	5.39	5739	4620	2420	1590	670	399	145	542	16	<0.1000	23	<1.0000	6	4	380
45	**K02**	30/08/2022 14:10:00	5.18	5562	4780	2260	1900	657	475	173	618	20	0.3	20	<1.0000	2	8	450
46	**K02**	02/02/2023 11:05:00	5.36	5733	4700	2500	1950	628	504	168	640	20	<0.1000	25	<1.0000	1	7	620
47	**K02**	27/03/2023 17:00:00	5.23	5645	5000	2320	1890	648	479	169	652	18	<0.1000	10	<1.0000	<1.0000	3	410
48	**K02**	26/06/2023 16:15:00			4580	2340	1960	617	500	174	643	19	<0.1000	12	<1.0000	<1.0000	3	450

	A	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1	Sample Site	Dissolved Cadmium (µg/L)	Dissolved Chromium (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Copper (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Lithium (µg/L)	Dissolved Nickel (µg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)
2	**K01**	0.4	1		14	29500	5		129	3160		<10.0000	<1.0000		<10.0000	606	<0.01	0.03
3	**K01**	0.2	<1.00		55	29500	3	247	129	3230	<1.0000	<10.0000	<1.0000	1	<10.0000	1340	<0.01	<0.01
4	**K01**	<0.10	<1.00		7	23900	<1.0000	288	25	4060	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	16	<0.05	<0.05
5	**K01**	0.2	<1.00		27	39300	5	260	67	3590	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	1010	<0.01	<0.01
6	**K01**	0.3	1		41	33700	7	234	101	3550	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	1590	<0.01	<0.01
7	**K01**	<0.10	<1.00		18	24400	<1.0000	256	50	3680	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	5	<0.01	<0.01
8	**K01**	0.0002	0.001		0.039	32	0.003	0.265	0.115	3.51	<0.0010	<0.0100	<0.0010	<0.00	<0.0100	1.79	<0.01	<0.01
9	**K01**	<0.10	<1.00		32	33500	<1.0000	270	92	3710	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	8	<0.01	<0.01
10	**K01**	0.5	3		56	33300	20	211	131	3380	<1.0000	<10.0000	<1.0000	1	<10.0000	1290	<0.01	<0.01
11	**K01**	<0.10	<1.00		25	42900	<1.0000	289	68	4320	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	53	<0.01	0.01
12	**K01**	<0.10	<1.00		21	39700	<1.0000	270	52	4030	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	28	<0.01	0.11
13	**K01**	0.2	<1.00		55	31100	5	320	128	3360	<1.0000	<10.0000	<1.0000	1	<10.0000	766	<0.01	<0.01
14	**K01**	0.6	4		54	32100	21	271	131	3320	<1.0000	<10.0000	<1.0000	1	<10.0000	1860	<0.01	<0.01
15	**K01**	0.6	4		55	29300	4	234	128	3290	<1.0000	<10.0000	<1.0000	1	<10.0000	1570	<0.01	<0.01
16	**K01**	0.3	1		47	32400	10	165	117	3340	<1.0000	<10.0000	<1.0000	1	<10.0000	681	<0.01	0.02
17	**K01**	0.4	2	49	54	30400	25	236	150	3030	<1.0000	<10.0000	<1.0000	1	<10.0000	1700	<0.01	<0.01
18	**K01**	0.3	1	54	<1.0000	28800	8	233	132	3010	<1.0000	<10.0000	<1.0000	1	<10.0000	799	<0.01	<0.01
19	**K01**	0.3	2	54	9	28300	6	222	124	2810	<1.0000	<10.0000	<1.0000	1	<10.0000	649	<0.01	<0.01
20	**K01**	0.3	4	54	158	25000	66	227	136	3430	<1.0000	<10.0000	<1.0000	1	<10.0000	1300	<0.01	<0.01
21	**K01**	0.3	4	61	4	49500	33	246	144	3450	<1.0000	<10.0000	<1.0000	1	<10.0000	1010	<0.01	<0.01
22	**K01**	0.4	3	51	623	31600	62	208	122	3120	<1.0000	<10.0000	<1.0000	1	<10.0000	1740	<0.01	<0.01
23	**K01**	0.8	4	50	232	32800	2	210	125	3400	<1.0000	<10.0000	<1.0000	1	<10.0000	1870	<0.01	<0.01
24	**K01**	0.4	2	52	26	29900	16	250	125	3230	<1.0000	<10.0000	<1.0000	1	<10.0000	767	<0.01	<0.01
25	**K01**	0.4	2	50	9	28900	8	257	125	3090	<1.0000	<10.0000	<1.0000	1	<10.0000	862	<0.01	<0.01
26	**K01**	0.2	3	43	10	28700	9	235	109	3000	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	918	<0.01	<0.01
27	**K02**	0.1	<1.00		2	26000	<1.0000		13	3750		<10.0000	<1.0000		<10.0000	68	<0.01	0.02
28	**K02**	0.2	<1.00		1	26700	<1.0000	552	20	3340	1	<10.0000	<1.0000	<1.00	<10.0000	1220	<0.01	<0.01
29	**K02**	0.2	<1.00		3	2810	<1.0000	589	17	3880	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	551	0.37	0.02
30	**K02**	<0.10	<1.00		<1.0000	27900	<1.0000	557	<1.0000	3150	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	9	0.03	0.04
31	**K02**	<0.10	<1.00		<1.0000	27300	2	485	6	3230	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	887	<0.01	<0.01
32	**K02**	<0.10	1		2	27100	<1.0000	493	7	2900	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	14	0.02	0.02
33	**K02**	0.0001	<0.00		<0.0010	24.6	<0.0010	0.562	0.009	3.13	<0.0010	<0.0100	<0.0010	<0.00	<0.0100	0.901	<0.01	<0.01
34	**K02**	<0.10	4		4	30900	<1.0000	477	17	3130	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	<5.00	<0.01	0.03
35	**K02**	<0.10	<1.00		<1.0000	26400	2	321	4	3120	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	513	<0.01	<0.01
36	**K02**																	
37	**K02**	<0.10	<1.00		<1.0000	18200	<1.0000	532	4	3120	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	21	<0.01	0.02
38	**K02**	<0.10	<1.00		1	26500	<1.0000	625	3	3180	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	135	<0.01	<0.01
39	**K02**	0.1	6		<1.0000	13200	<1.0000	490	11	3140	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	50	<0.01	<0.01
40	**K02**	<0.10	<1.00		<1.0000	23500	<1.0000	526	4	3000	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	374	<0.01	<0.01
41	**K02**	<0.10	<1.00		2	7310	<1.0000	319	5	3110	3	<10.0000	<1.0000	<1.00	<10.0000	146	<0.05	<0.05
42	**K02**	0.3	<1.00	24	13	100	<1.0000	474	36	3110	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	655	<0.01	<0.01
43	**K02**	0.2	3	8	48	35900	18	524	18	3260	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	398	0.01	<0.01
44	**K02**	3.4	10	40	86	44900	11	427	48	3170	<1.0000	<10.0000	<1.0000	2	20	1100	<0.01	<0.01
45	**K02**	1	4	12	89	31300	25	603	23	3110	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	663	0.07	0.01
46	**K02**	0.4	4	3	78	37000	26	586	8	2950	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	465	<0.01	<0.01
47	**K02**	<0.10	<1.00	<1.00	<1.0000	23000	2	428	3	2800	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	362	<0.01	<0.01
48	**K02**	<0.10	<1.00	<1.00	<1.0000	23200	<1.0000	421	4	2940	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	468	<0.01	<0.01

	A	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Acidity as CaCO3 (mg/L)	Fluoride (mg/L)	Dissolved Aluminium (µg/L)	Dissolved Bismuth (µg/L)	Ammonia as N (mg/L)	Dissolved Oxygen (% saturation)	Lab Turbidity (NTU)	Field Water Temperature (°C)
2	**K01**								0.2	14000		0.34	6.1	14.1	
3	**K01**	0.7	0.03	<1	<1	<1	<1	112	0.2	6970				34.9	27.95
4	**K01**	0.7	0.03	<1	<1	284	284	108	0.5	10				92.9	29.5
5	**K01**	0.7	0.02	<1	<1	48	48	99	0.4	160				82.2	27.97
6	**K01**	0.5	0.03	<1	<1	3	3	122	<1.0	8780				34.1	27
7	**K01**	0.6	0.01	<1	<1	52	52	99	0.3	30				21.6	23.06
8	**K01**	0.6	0.03	<1	<1	<1	<1	180	0.5	8.5				35.6	26.85
9	**K01**	18.8	0.06	<1	<1	3	3	46	0.3	100				90.1	29.27
10	**K01**	0.7	0.12	<1	<1	<1	<1	224	<0.1	13800				22.4	29.03
11	**K01**	8.7	0.2	<1	<1	22	22	43	0.3	1070				131	27.37
12	**K01**	12.9	0.95	<1	<1	100	100	183	0.3	180				233	28.25
13	**K01**	1.3	0.1	<1	<1	<1	<1	224	<0.1	14800				1.7	27.94
14	**K01**	1.4	0.07	<1	<1	<1	<1	236	<0.1	13900				8.4	26.34
15	**K01**	1.1	0.04	<1	<1	<1	<1	179	<0.1	14400				17.4	26.59
16	**K01**	1.2	0.07	<1	<1	<1	<1	247	<0.1	13700				7.8	26.82
17	**K01**	0.6	0.04	<1	<1	<1	<1	259	0.1	14100				2.2	28.06
18	**K01**	2.2	0.29	<1	<1	<1	<1	166	0.2	15600				281	28.69
19	**K01**	0.7	0.3	<1	<1	<1	<1	184	<4.0	15100				18.7	30.17
20	**K01**	0.8	0.06	<1	<1	<1	<1	143	<4.0	13000				69.3	29.21
21	**K01**	0.8	0.08	<1	<1	3	3	225	0.2	14700				113	29.53
22	**K01**	0.7	0.02	<1	<1	<1	<1	257	0.1	13300				18.3	29.95
23	**K01**	0.5	0.03	<1	<1	<1	<1	249	<0.1	14900				66.6	
24	**K01**	0.5	0.09	<1	<1	<1	<1	227	<1.0	14600				15.5	26.57
25	**K01**	0.8	0.14	<1	<1	<1	<1	113	0.1	14200				25.6	26.95
26	**K01**	1.3	0.09	<1	<1	4	4	200	0.2	10800		0.5		46.7	29.3
27	**K02**								0.3	70		3.85	6.8	58.6	
28	**K02**	4.8	0.51	<1	<1	180	180	101	0.2	30				881	26.82
29	**K02**	4.3	0.02	<1	<1	157	157	283	0.4	<10.000				60.3	28.03
30	**K02**	3.9	0.07	<1	<1	191	191	340	0.3	10				4.2	26.79
31	**K02**	3.9	0.1	<1	<1	192	192	100	0.3	70				36.8	29.55
32	**K02**	3.7	0.1	<1	<1	187	187	462	0.3	50				13.4	23.85
33	**K02**	5	0.62	<1	<1	177	177	244	0.3	0.08				621	27.34
34	**K02**	3.9	0.11	<1	<1	206	206	282	0.3	50				18.4	29.84
35	**K02**	6.2	1.28	<1	<1	174	174	224	0.2	110				1640	32.07
36	**K02**														NR
37	**K02**	6.6	1.17	<1	<1	194	194	284	0.3	20				799	26.38
38	**K02**	4.8	1.18	<1	<1	184	184	171	0.3	60				30.1	27.79
39	**K02**	4.1	0.22	<1	<1	168	168	126	0.2	20				3.8	25.23
40	**K02**	3.8	0.16	<1	<1	152	152	83	0.3	30				161	26.14
41	**K02**	8.6	1.54	<1	<1	180	180	110	0.3	40				4130	28.87
42	**K02**	4	2.32	<1	<1	180	180	256	0.2	10				6500	28.99
43	**K02**	5.7	0.33	<1	<1	179	179	53	0.3	40				359	27.63
44	**K02**	13.4	4.03	<1	<1	159	159	64	0.3	4780				5100	29.15
45	**K02**	6.3	1.28	<1	<1	165	165	16	0.3	1290				1530	28.21
46	**K02**	4.6	0.44	<1	<1	176	176	215	0.3	2900				531	28.92
47	**K02**	3.6	0.06	<1	<1	188	188	85	0.3	70				59.9	27.84
48	**K02**	3.5	0.14	<1	<1	162	162	101	0.2	130				181	

	A	AX	AY	AZ
1	Sample Site	Comments/Observations	Lab pH (pH unit)	Lab Electrical Conductivity (µS/cm)
2	**K01**		3.96	4080
3	**K01**	Very gaseous.	4.77	3960
4	**K01**	Bore Bailed.	6.66	4150
5	**K01**	NR	6.56	4110
6	**K01**	Water grey in colour.	4.82	3820
7	**K01**	Foul Smell. Sample Clear. Sampled by Hydrasleeve due to time constraints.	6.42	3940
8	**K01**	Clear.	4.62	3850
9	**K01**	Clear sample. Bore had gaseous odour.	5.39	4120
10	**K01**	Clear.	4.2	3820
11	**K01**	Clear. Sampled by hydrasleeve.	5.86	4170
12	**K01**	Sampled by hydrasleeve. Foul organic odour.	6.41	4000
13	**K01**	Sample clear, gaseous	3.92	3980
14	**K01**	Clear.	3.94	4000
15	**K01**	Clear.	4.36	4080
16	**K01**	Clear.	4.1	4010
17	**K01**	Clear	3.79	4240
18	**K01**	Cloudy	4.03	3250
19	**K01**	Cloudy	3.81	4160
20	**K01**	Cloudy	3.69	3930
21	**K01**	Cloudy	4.51	3790
22	**K01**	Cloudy	3.81	3810
23	**K01**		4.18	4180
24	**K01**	Clear	3.4	4080
25	**K01**	Cloudy	4.02	3880
26	**K01**	Clear	4.59	3900
27	**K02**		6.05	6410
28	**K02**	Very gaseous.	6.01	6120
29	**K02**	Bore bailed.	6.07	6300
30	**K02**	NR	6.04	5960
31	**K02**	Clear.	5.98	5560
32	**K02**	Foul Smell. Sample Clear. Sampled by Hydrasleeve due to time constraints.	6.13	5650
33	**K02**	Clear.	5.96	5550
34	**K02**	Clear sample. Bore had gaseous odour.	6.17	5810
35	**K02**	Extremely turbid.	5.84	5470
36	**K02**	Not sampled. Snake inside bore lid.		
37	**K02**	Sampled by hydrasleeve. Foul organic odour.	6.22	5540
38	**K02**	Sample grey in colour	6.46	5550
39	**K02**	Clear.	6.49	5630
40	**K02**	Sample grey in colour. Unable to stabilise water quality parameters.	6.96	5660
41	**K02**	Clear.	6.77	5770
42	**K02**	Cloudy grey	6.04	6010
43	**K02**	Cloudy	6.43	6310
44	**K02**	Cloudy	6.46	5860
45	**K02**	Dark cloudy	6.13	5370
46	**K02**	Dark cloudy	5.97	5500
47	**K02**	Dark cloudy	6.08	3700
48	**K02**		6.63	5700

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Sample Site	Date/Time Sampled	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Total Dissolved Solids (mg/L)	Sulfate as SO4 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Chloride (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Mercury (µg/L)	Dissolved Barium (µg/L)	Dissolved Antimony (µg/L)	Dissolved Arsenic (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Boron (µg/L)
49	**K02**	07/09/2023 17:10:00	5.25	5356	4580	1800	1950	629	487	178	643	20	<0.1000	12	<1.0000	<1.0000	3	440
50	**K02**	03/06/2025 15:00:00	5.42	6110	5090	2210	1980	683	508	174	638	19	<0.1000	12	<1.0000	<1.0000	2	460
51	**K03**	03/08/2020 17:05:00																
52	**K03**	02/09/2020 10:55:00																
53	**K03**	03/11/2020 09:40:00																
54	**K03**	10/12/2020 07:20:00																
55	**K03**	06/01/2021 10:35:00																
56	**K03**	10/02/2021 12:00:00																
57	**K03**	17/03/2021 10:55:00																
58	**K03**	06/04/2021 00:00:00																
59	**K03**	09/06/2021 14:40:00																
60	**K03**	07/07/2021 17:15:00																
61	**K03**	04/08/2021 17:20:00																
62	**K03**	03/03/2022 08:00:00																
63	**K03**	29/05/2022 00:00:00																
64	**K03**	01/09/2022 01:00:00																
65	**K03**	29/11/2022 00:00:00																
66	**K03**	27/03/2023 00:00:00																
67	**K03**	01/03/2025 00:00:00																
68	**TK01**	03/11/2021 09:00:00	6.04	5563	4570	2020	1610	589	354	177	574	18	<0.1000	33	<1.0000	2	<1.00	160
69	**TK01**	07/12/2021 10:00:00	5.64	5575	4630	2120	1860	612	422	196	673	20	<0.1000	16	<1.0000	3	<1.00	390
70	**TK01**	02/03/2022 15:15:00	5.94	5486	4670	2080	1750	572	392	188	666	20	<0.1000	29	<1.0000	3	<1.00	480
71	**TK01**	31/05/2022 13:25:00	5.65	5424	4260	2250	1850	579	408	202	641	13	<0.1000	15	<1.0000	1	<1.00	270
72	**TK01**	30/08/2022 12:05:00	5.5	5409	4680	1980	1970	664	423	221	647	22	<0.1000	18	<1.0000	2	<1.00	480
73	**TK01**	02/02/2023 09:20:00	5.56	5490	4950	2090	1860	617	407	206	633	21	<0.1000	24	<1.0000	1	1	470
74	**TK01**	27/03/2023 14:00:00	5.47	5388	4440	2190	1840	598	410	199	631	19	<0.1000	14	<1.0000	<1.0000	<1.00	410
75	**TK01**	26/06/2023 15:00:00	5.3	5481	4400	1870	1960	671	439	210	619	21	<0.1000	18	<1.0000	1	<1.00	440
76	**TK01**	07/09/2023 16:00:00			4260	2070	1770	645	385	196	561	19	<0.1000	16	<1.0000	<1.0000	<1.00	400
77	**TK01**	15/12/2023 09:10:00	5.6	5480	4940	2280	2100	583	478	219	604	22	<0.1000	17	<1.0000	<1.0000	<1.00	370
78	**TK01**	03/06/2025 13:35:00	5.5	5630	4500	1910	1850	665	418	195	562	19	<0.1000	14	<1.0000	<1.0000	<1.00	390

	A	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1	Sample Site	Dissolved Cadmium (µg/L)	Dissolved Chromium (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Copper (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Lithium (µg/L)	Dissolved Nickel (µg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Nitrite as N (mg/L)	Nitrate as N (mg/L)
49	**K02**	<0.10	<1.00	<1.00	<1.0000	21700	<1.0000	519	2	3080	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	169	<0.01	<0.01
50	**K02**	<0.10	<1.00	<1.00	3	25000	2	571	2	3160	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	252	<0.05	<0.05
51	**K03**																	
52	**K03**																	
53	**K03**																	
54	**K03**																	
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63	**K03**																	
64	**K03**																	
65	**K03**																	
66	**K03**																	
67	**K03**																	
68	**TK01**	0.1	<1.00	5	36	32700	<1.0000	723	34	2030	1	<10.0000	<1.0000	<1.00	<10.0000	658	<0.01	<0.01
69	**TK01**	<0.10	<1.00	5	<1.0000	40800	1	598	26	2180	2	<10.0000	<1.0000	1	<10.0000	486	<0.05	<0.05
70	**TK01**	<0.10	<1.00	8	26	47900	2	561	33	2340	2	<10.0000	<1.0000	<1.00	<10.0000	326	<0.01	<0.01
71	**TK01**	<0.10	<1.00	2	<1.0000	42300	<1.0000	180	7	2250	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	75	<0.01	<0.01
72	**TK01**	<0.10	1	1	<1.0000	40500	5	780	12	2140	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	525	<0.01	<0.01
73	**TK01**	<0.10	<1.00	3	2	48400	4	777	19	2260	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	552	<0.01	<0.01
74	**TK01**	0.2	<1.00	5	253	44600	<1.0000	609	28	2020	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	999	<0.01	<0.01
75	**TK01**	0.1	<1.00	<1.00	1	41800	<1.0000	616	8	2220	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	654	<0.01	0.01
76	**TK01**	<0.10	<1.00	<1.00	<1.0000	44400	<1.0000	717	5	2270	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	188	<0.01	<0.01
77	**TK01**	<0.10	<1.00	3	<1.0000	45800	<1.0000	673	15	2740	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	200	<0.10	<0.10
78	**TK01**	<0.10	<1.00	<1.00	3	38600	1	722	5	2110	<1.0000	<10.0000	<1.0000	<1.00	<10.0000	565	<0.05	<0.05

	A	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW
1	Sample Site	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Hydroxide Alkalinity as CaCO3 (mg/L)	Carbonate Alkalinity as CaCO3 (mg/L)	Bicarbonate Alkalinity as CaCO3 (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Acidity as CaCO3 (mg/L)	Fluoride (mg/L)	Dissolved Aluminium (µg/L)	Dissolved Bismuth (µg/L)	Ammonia as N (mg/L)	Dissolved Oxygen (% saturation)	Lab Turbidity (NTU)	Field Water Temperature (°C)
49	**K02**	4	0.24	<1	<1	157	157	307	0.3	120				249	26.17
50	**K02**	4.2	0.21	<1	<1	201	201	360	0.4	180		3.43		152	29.2
51	**K03**														NR
52	**K03**														NR
53	**K03**														NR
54	**K03**														NR
55	**K03**														NR
56	**K03**														NR
57	**K03**														NR
58	**K03**														NR
59	**K03**														NR
60	**K03**														NR
61	**K03**														NR
62	**K03**														NR
63	**K03**														NR
64	**K03**														NR
65	**K03**														NR
66	**K03**														NR
67	**K03**														
68	**TK01**	6	0.09	<1	<1	324	324	146	0.2	<10.000				182	28.83
69	**TK01**	5.1	0.07	<1	<1	332	332	273	0.2	50				57.4	29.05
70	**TK01**	5	0.1	<1	<1	298	298	70	0.1	20				103	29.53
71	**TK01**	5.8	0.26	<1	<1	301	301	187	0.1	50				173	28
72	**TK01**	6.2	0.26	<1	<1	296	296	51	0.1	20				414	28.64
73	**TK01**	6.6	0.04	<1	<1	272	272	526	0.1	140				76.7	28.9
74	**TK01**	5.6	0.02	<1	<1	193	193	163	0.2	20				332	31.28
75	**TK01**	5.7	<0.0	<1	<1	299	299	282	0.1	140				107	26.53
76	**TK01**	5.8	0.05	<1	<1	288	288	258	0.1	70				89.2	
77	**TK01**	6.6	0.08	<1	<1	266	266	215	0.1	50				13.1	27.68
78	**TK01**	5.4	0.03	<1	<1	295	295	495	0.1	130		5.01		50.4	27

	A	AX	AY	AZ
1	Sample Site	Comments/Observations	Lab pH (pH unit)	Lab Electrical Conductivity (µS/cm)
49	**K02**	Clear	6.2	5490
50	**K02**	Clear	6.01	6010
51	**K03**	Dry.		
52	**K03**	Too shallow to sample.		
53	**K03**	Not sampled due to inadequate amount of water in bore.		
54	**K03**	Too low to sample.		
55	**K03**	Not sampled. Bore dry.		
56	**K03**	NR		
57	**K03**	Dry.		
58	**K03**	Not sampled. Dry.		
59	**K03**	Dry. NST.		
60	**K03**	Dry. Not sampled.		
61	**K03**	Dry. No sample collected.		
62	**K03**	Bore dry		
63	**K03**	Dry		
64	**K03**	Dry		
65	**K03**	Dry		
66	**K03**	Dry		
67	**K03**	Dry		
68	**TK01**	NR	6.26	5550
69	**TK01**	Cloudy grey	6.4	5660
70	**TK01**	Clear	6.56	5550
71	**TK01**	Dark Cloudy	6.66	5430
72	**TK01**	Dark cloudy	6.39	5200
73	**TK01**	Clear	6.29	5140
74	**TK01**	Clear	6.73	5090
75	**TK01**	Clear	6.07	5470
76	**TK01**		5.97	5370
77	**TK01**	Cloudy	6.06	5270
78	**TK01**	Clear	6.01	5350

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Sample Site	Date/Time Sampled	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Depth to Water (m)	Total Dissolved Solids (mg/L)	Sulfate as SO4 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Chloride (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Mercury (µg/L)	Dissolved Barium (µg/L)	Dissolved Antimony (µg/L)
2	GLE01	01/02/2016 00:00:00	6	1520	17.5	1020	191	346	354	76	38	218	8	0	50	0
3	GLE01	01/03/2022 01:00:00	NR0.00	NR	NR0.00											
4	GLE01	01/03/2023 00:00:00	NR0.00	NR	NR0.00											
5	GLE01	01/03/2025 00:00:00														
6	GLE01	01/05/2017 00:00:00			Dry0.00											
7	GLE01	01/06/2022 01:00:00	NR0.00	NR	NR0.00											
8	GLE01	01/06/2025 00:00:00														
9	GLE01	01/09/2022 01:00:00	NR0.00	NR	NR0.00											
10	GLE01	01/12/2024 00:00:00														
11	GLE01	02/02/2015 00:00:00			-17.92											
12	GLE01	02/09/2015 00:00:00			-18.09											
13	GLE01	02/11/2015 00:00:00	6.9	10630	-18.1											
14	GLE01	03/02/2015 00:00:00				5580	519	374	1300	79	43	1910	12	0	400	0
15	GLE01	03/03/2015 00:00:00			-17.94											
16	GLE01	03/03/2016 00:00:00			17.67											
17	GLE01	03/06/2015 00:00:00			-17.93											
18	GLE01	03/08/2015 00:00:00	7	10730	17.92											
19	GLE01	03/08/2016 00:00:00			17.92											
20	GLE01	03/11/2016 00:00:00			17.93											
21	GLE01	03/12/2015 00:00:00			17.48											
22	GLE01	04/04/2016 00:00:00			18.67											
23	GLE01	04/04/2018 00:00:00			18.3											
24	GLE01	05/01/2015 00:00:00			17.93											
25	GLE01	05/05/2016 00:00:00			17.67											
26	GLE01	05/08/2014 00:00:00			17.93											
27	GLE01	05/09/2024 00:00:00														
28	GLE01	05/11/2014 00:00:00			17.91											
29	GLE01	06/06/2021 00:00:00	NR0.00	NR	NR0.00											
30	GLE01	06/07/2015 00:00:00			17.9											
31	GLE01	06/07/2016 00:00:00			17.92											
32	GLE01	06/10/2016 00:00:00			17.94											
33	GLE01	07/02/2018 00:00:00			Dry0.00											
34	GLE01	07/04/2015 00:00:00			-17.92											
35	GLE01	07/05/2014 00:00:00			17.95											
36	GLE01	07/09/2020 10:00:00	NR0.00	NR	NR0.00											
37	GLE01	07/10/2015 00:00:00			-18.09											
38	GLE01	08/02/2017 00:00:00			Dry0.00											
39	GLE01	08/06/2016 00:00:00	6.29	1719	17.66	1030	182	370	344	84	39	215	8	0	70	0
40	GLE01	08/11/2012 00:00:00				9220	1060		3590	522	311	1820	43	0	60	0
41	GLE01	08/11/2017 00:00:00			Dry0.00											
42	GLE01	09/08/2017 00:00:00			Dry0.00											
43	GLE01	09/09/2019 00:00:00														
44	GLE01	09/12/2019 09:30:00			17.92											
45	GLE01	10/01/2017 00:00:00			Dry0.00											
46	GLE01	10/01/2018 00:00:00			Dry0.00											
47	GLE01	10/03/2021 06:00:00	NR0.00	NR	NR0.00											
48	GLE01	10/04/2017 00:00:00			Dry0.00											

	A	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Chromium (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Copper (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Lithium (µg/L)	Dissolved Nickel (µg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)
2	GLE01	0	0	110	0	0	10	0	0	0	10	130	240	10	0	0
3	GLE01															
4	GLE01															
5	GLE01															
6	GLE01															
7	GLE01															
8	GLE01															
9	GLE01															
10	GLE01															
11	GLE01															
12	GLE01															
13	GLE01															
14	GLE01	0	0	370	0	0	0	0	1680	0	820	0	40	0	0	0
15	GLE01															
16	GLE01															
17	GLE01															
18	GLE01															
19	GLE01															
20	GLE01															
21	GLE01															
22	GLE01															
23	GLE01															
24	GLE01															
25	GLE01															
26	GLE01															
27	GLE01															
28	GLE01															
29	GLE01															
30	GLE01															
31	GLE01															
32	GLE01															
33	GLE01															
34	GLE01															
35	GLE01															
36	GLE01															
37	GLE01															
38	GLE01															
39	GLE01	0	0	60	0	0	10	0	0	0	10	160	280	20	0	0
40	GLE01	0		510	0	10		0		0		270	120	0	0	0
41	GLE01															
42	GLE01															
43	GLE01															
44	GLE01															
45	GLE01															
46	GLE01															
47	GLE01															
48	GLE01															

	A	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	Sample Site	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Acidity as CaCO3 (mg/L)	Fluoride (mg/L)	Dissolved Aluminium (µg/L)	Dissolved Bismuth (µg/L)	Comments/Observations	Lab pH (pH unit)	Lab Electrical Conductivity (µS/cm)
2	GLE01	0	0	250	2.6	0.5	173	10	0.2				7.2	1670
3	GLE01											Dry		
4	GLE01											No access		
5	GLE01											No access due to wet weather		
6	GLE01											Dry		
7	GLE01											-		
8	GLE01											Dry		
9	GLE01											No access, track washed out		
10	GLE01											Dry		
11	GLE01													
12	GLE01													
13	GLE01													
14	GLE01	20	20	20	4.9	0	2420	133	0.1				7.66	8520
15	GLE01													
16	GLE01													
17	GLE01													
18	GLE01													
19	GLE01													
20	GLE01													
21	GLE01													
22	GLE01													
23	GLE01											Dry		
24	GLE01													
25	GLE01													
26	GLE01													
27	GLE01											Dry		
28	GLE01													
29	GLE01											Not sampled. No access. NST.		
30	GLE01													
31	GLE01													
32	GLE01													
33	GLE01											Dry		
34	GLE01													
35	GLE01											too shallow		
36	GLE01											No access		
37	GLE01													
38	GLE01											Dry		
39	GLE01	0	0	160	4.3	1	194	0	0.3			Very Cloudy. Sampled using bailer.		1720
40	GLE01	10					545		0.4				7.68	11,900
41	GLE01											Dry		
42	GLE01											Dry		
43	GLE01											No access		
44	GLE01											Too shallow		
45	GLE01											Dry		
46	GLE01											Dry		
47	GLE01											Not sampled. No access.		
48	GLE01											Dry		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Sample Site	Date/Time Sampled	Field pH (pH unit)	Field Electrical Conductivity (µS/cm)	Depth to Water (m)	Total Dissolved Solids (mg/L)	Sulfate as SO4 (mg/L)	Total Hardness as CaCO3 (mg/L)	Dissolved Chloride (mg/L)	Dissolved Calcium (mg/L)	Dissolved Magnesium (mg/L)	Dissolved Sodium (mg/L)	Dissolved Potassium (mg/L)	Dissolved Mercury (µg/L)	Dissolved Barium (µg/L)	Dissolved Antimony (µg/L)
49	GLE01	10/05/2018 00:00:00			18.3											
50	GLE01	10/06/2019 00:00:00														
51	GLE01	10/06/2020 01:00:00	NR0.00	NR	NR0.00											
52	GLE01	11/01/2016 00:00:00			17.47											
53	GLE01	11/05/2015 00:00:00	DRY0.00	DRY	-17.95	0										
54	GLE01	11/10/2017 00:00:00			Dry0.00											
55	GLE01	11/12/2017 00:00:00			Dry0.00											
56	GLE01	13/05/2013 00:00:00				6930	1560		2930	462	261	1650	43	0	60	0
57	GLE01	13/05/2014 00:00:00			17.92											
58	GLE01	13/07/2017 00:00:00			Dry0.00											
59	GLE01	13/11/2013 00:00:00				6680	1580		2860	438	253	1710	36	0	50	0
60	GLE01	22/09/2014 00:00:00			17.54											
61	GLE01	26/02/2013 00:00:00				5250	862		1580	334	187	1030	23	0	80	0
62	GLE01	26/09/2017 00:00:00			Dry0.00											
63	GLE01	28/05/2012 00:00:00				9220	1480		3770	491	308	2010	46	0	70	0
64	GLE01	29/02/2024 00:00:00														
65	GLE01	29/05/2023 00:00:00														
66	GLE01	30/08/2021 00:00:00	NR0.00	NR	NR0.00											
67	GLE01	30/10/2014 00:00:00			17.93											
68	GLE01	30/11/2020 11:00:00	NR0.00	NR	NR0.00											
69	GLE01	31/05/2017 00:00:00			Dry0.00											

	A	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	Sample Site	Dissolved Arsenic (µg/L)	Dissolved Beryllium (µg/L)	Dissolved Boron (µg/L)	Dissolved Cadmium (µg/L)	Dissolved Chromium (µg/L)	Dissolved Cobalt (µg/L)	Dissolved Copper (µg/L)	Dissolved Iron (µg/L)	Dissolved Lead (µg/L)	Dissolved Lithium (µg/L)	Dissolved Nickel (µg/L)	Dissolved Manganese (µg/L)	Dissolved Molybdenum (µg/L)	Dissolved Selenium (µg/L)	Dissolved Silver (µg/L)
49	GLE01															
50	GLE01															
51	GLE01															
52	GLE01															
53	GLE01															
54	GLE01															
55	GLE01															
56	GLE01	0		460	0	0		10		0		50	60	0	0	0
57	GLE01															
58	GLE01															
59	GLE01	0		470	0	0		0		0		280	90	40	0	0
60	GLE01															
61	GLE01	0		370	0	0		10		0		0	10	0	0	0
62	GLE01															
63	GLE01	0		690	0	0		0		0		10	60	0	0	0
64	GLE01															
65	GLE01															
66	GLE01															
67	GLE01															
68	GLE01															
69	GLE01															

	A	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
1	Sample Site	Dissolved Uranium (µg/L)	Dissolved Vanadium (µg/L)	Dissolved Zinc (µg/L)	Total Nitrogen as N (mg/L)	Total Phosphorus as P (mg/L)	Total Alkalinity as CaCO3 (mg/L)	Acidity as CaCO3 (mg/L)	Fluoride (mg/L)	Dissolved Aluminium (µg/L)	Dissolved Bismuth (µg/L)	Comments/Observations	Lab pH (pH unit)	Lab Electrical Conductivity (µS/cm)
49	GLE01											Dry		
50	GLE01											No access to bore		
51	GLE01											No access. No sample collected.		
52	GLE01													
53	GLE01													
54	GLE01											Dry		
55	GLE01											Dry		
56	GLE01	10					513		0.4				7.24	9400
57	GLE01													
58	GLE01											Dry		
59	GLE01	10					543		0.6				7.71	9000
60	GLE01													
61	GLE01	10					388		0.3				7.74	7640
62	GLE01											Dry		
63	GLE01	10					602		0.4				7.67	9910
64	GLE01											No access		
65	GLE01											No access		
66	GLE01											No access. NST		
67	GLE01													
68	GLE01											No access.		
69	GLE01											Dry		

APPENDIX E3 GEOCHEMICAL ASSESSMENT GUIDELINES

E3.1 AMD, ACIDITY AND SALINITY GUIDELINES

This section presents general guidelines for soil pH, electrical conductivity (EC), AMD and acid sulfate soils (ASS) classifications and net acidity used to interpret laboratory and field results throughout this assessment.

E3.1.1 pH AND EC

Soil extract pH and EC are key indicators of acidity and salt loading in the soil profile. pH indicates the degree of acidity or alkalinity of the soil extract, which reflects conditions controlling metal mobility, mineral stability and the rate of secondary mineral hydrolysis. EC provides a measure of the total dissolved salt content of the extract, reflecting the accumulation of soluble oxidation products such as sulfate salts in the profile. Both parameters were used in this assessment to characterise conditions across the study area and evaluate the potential for acidic or saline conditions.

The classification scheme applied to pH and EC results was based on Hazelton and Murphy (2025) and is presented in Table E3-1

Note that EC thresholds were derived from the 60-80% clay content column of Shaw (1999) as reported in Hazelton and Murphy (2025). Soil descriptions from test pit logs indicated that materials across the study area were predominantly fine grained clayey sands and sandy clays, consistent with clay contents broadly in the range of 10-40%. However, the 60-80% clay column was selected as a conservative upper estimate given that drying and crushing of samples prior to laboratory extraction is likely to have inflated EC values relative to field conditions.

TABLE E3-1 pH AND EC GUIDELINE CLASSIFICATIONS

$pH_{1:5}$		**EC (µS/cm)[1]**			
		Classification	**$EC_{1:5}$**	**$EC_{1:2}$ (Paste)[2]**	**$EC_{1:20}$ (ASLP)[2]**
Classification	**Range**		**Range**		
Very strongly acidic	<4.0	Very low	<150	<375	<37.5
Strongly acidic	4.0-5.5	Low	150-300	375-750	37.5-75.0
Moderately acidic	5.5-6.0	Moderate	300-700	750-1,750	75.0-175
Slightly acidic	6.0-7.0	High	700-1,180	1,750-2,950	175-295
Neutral	7.0	Very high	1,180-1,870	2,950-4,680	295-468
Slightly alkaline	7.0-8.0	Extreme	>1,870	>4,680	>468
Moderately alkaline	8.0-9.0				
Strongly alkaline	9.0-10				
Very strongly alkaline	10-11				

$pH_{1:5}$		EC (µS/cm)[1]			
		Classification	$EC_{1:5}$	$EC_{1:2}$ (Paste)[2]	$EC_{1:20}$ (ASLP)[2]
Classification	Range		Range		
Source: Hazelton and Murphy (2025)					
Notes: *[1] Assumed 60-80% clay content.* *[2] $EC_{1:2}$ and $EC_{1:20}$ values derived by multiplying $EC_{1:5}$ by 2.5 and dividing by 4 respectively.*					

E3.1.2 AMD CLASSIFICATION

Soil and spoil materials associated with coal mining can be characterised according to their acid-generating potential. As shown in Table E3-2, materials are broadly classified as potentially acid-forming (PAF), non-acid-forming (NAF) or uncertain (UC), based on the balance between acid-generating sulfide minerals and acid-neutralising minerals present in the material. A conservative approach to material classification is to consider all materials with an UC classification as PAF.

PAF materials have the potential to generate sulfuric acid (H_2SO_4) upon oxidation, which can mobilise metals and acidify receiving waters. NAF materials have sufficient buffering capacity to neutralise any acidity generated.

TABLE E3-2 AMD CLASSIFICATION CRITERIA BASED ON NAPP AND NAG TEST RESULTS

AMD Class		NAPP (kg H_2SO_4/t)	NAG pH
PAF		>10	<4.5
NAF		<0	≥4.5
UC	UC (PAF)	>0	≥4.5
	UC (NAF)	<0	<4.5
Source: Based on AMIRA (2002).			

E3.1.3 NET ACIDITY AND ASS EVALUATION

The Kerale Dam area has been identified as having a low to moderate probability of containing acid sulfate soils based on national mapping data (Fitzpatrick, 2008). Therefore, Net Acidity was calculated from the measured laboratory parameters to evaluate acidity levels across the study area against established action criteria in *Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines V5.1* (Dear, 2024).

Where sulfide oxidation has occurred and acidity has accumulated in the soil profile, Net Acidity provides a quantitative measure of the total acid load present and the treatment required to neutralise it. Net Acidity is the sum of Potential Sulfidic Acidity (by CRS), Actual

Acidity (by TAA) and Retained Acidity (by Net Acid Soluble Sulfur), and forms the basis for assessing whether acid sulfate soils require active management using the criteria in Table E3-3

TABLE E3-3 TEXTURE-BASED ACID SULFATE SOIL ACTION CRITERIA

Material Type	**Clay Content**	**Net Acidity Lower Limit**			
		<1000 t disturbed		**>1000 t disturbed**	
Unit	*%*	*mol H^+/t*	*%S*	*mol H^+/t*	*%S*
Coarse: sands to loamy sands and peats	<5	18	0.03	18	0.03
Medium: clayey sands to light clays	5-40	36	0.06		
Fine: light medium to heavy clays and silty clays	>40	62	0.10		
Source: Dear (2024)					

E3.2 METALS AND METALLOIDS GUIDELINES

Leachate and soil results were assessed against relevant guidelines for metals and metalloids to evaluate potential environmental impacts and inform the spatial distribution of analytes across the investigation area.

The applied guidelines are described in the following subsections.

E3.2.1 DISSOLVED METALS AND METALLOIDS

ANZG

Leachate results were assessed against the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2025) default guideline values (DGVs) for freshwater ecosystems, as presented in Table E3-4.These guidelines were considered the most appropriate benchmark for leachate interpretation given the potential for contaminated soils in the Kerale Dam catchment.

The ANZG (2025) DGVs are expressed across four levels of species protection (99%, 95%, 90% and 80%), with the 95% protection level generally considered the default trigger value for investigation in slightly to moderately disturbed ecosystems.

TABLE E3-4 ANZG FRESHWATER SPECIES PROTECTION LEVELS FOR DISSOLVED METALS AND METALLOIDS

Element	**Freshwater Protection Level (% of species) (µg/L)**				
	Unknown[1]	**99**	**95**	**90**	**80**
Al (pH<6.5)	0.8	-	-	-	-
Al (pH>6.5)	-	27	55	80	150

Element	Freshwater Protection Level (% of species) (µg/L)				
	Unknown[1]	**99**	**95**	**90**	**80**
As(III)	-	1	24	94	360
As(V)	-	0.8	13	42	140
B	-	340	940	1,500	2,500
Cd	-	0.06	0.2	0.4	0.8
Cr(III)	3.3	-	-	-	-
Cr(VI)	-	0.01	1	6	40
Co	1.4	-	-	-	-
Cu	-	1	1.4	1.8	2.5
Fe	-	140	280	430	730
Pb	-	1	3.4	5.6	9.4
Mn	-	1,200	1,900	2,500	3,600
Hg (inorganic)	-	0.06	0.6	1.9	5.4
Mo	34	-	-	-	-
Ni	-	8	11	13	17
V	6	-	-	-	-
Zn	-	2.4	8	15	31

Note:
[1] Unknown toxic level of species protection values are derived from limited toxicological data where the level of species protection cannot be statistically determined and is therefore presented as a single threshold value.

Source: ANZG (2025)

E3.2.2 TOTAL METALS AND METALLOIDS

NEPM

Soil results were assessed against the health-based investigation levels (HILs) for metals and inorganics published in the National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013 (ASC NEPM), as presented in Table E3-5

HILs are defined for four land use categories: Residential A (high-density residential with garden/recreational areas), Residential B (low-density residential with minimal soil access), Recreational C (public open space and recreational areas) and Commercial/Industrial D.

The Kerale Dam area may, in the future, support a post-mining land use (PMLU). Given the potential uncertainty around the final PMLU, Residential A HILs are adopted as the primary

assessment benchmark on the basis that they represent the most conservative and protective scenario for human health.

TABLE E3-5 NEPM HIL GUIDELINES FOR METALS AND METALLOIDS IN SOILS

Element	Residential A	Residential B	Recreational C	Commercial/Industrial D
Unit	*mg/kg*			
As	100	500	300	3,000
Be	60	90	90	500
B	4,500	40,000	20,000	300,000
Cd	20	150	90	900
Cr(VI)	100	500	300	3,600
Co	100	600	300	4,000
Cu	6,000	30,000	17,000	240,000
Pb	300	1,200	600	1,500
Mn	3,800	14,000	19,000	60,000
Hg (inorganic)	40	120	80	730
Ni	400	1,200	1,200	6,000
Se	200	1,400	700	10,000
Zn	7,400	60,000	30,000	400,000
Source: ASC NEPM (2013)				

Geochemical Abundance Index

The geochemical abundance index (GAI) was calculated for each element by dividing the measured concentration by the corresponding reference value (INAP, 2014).

$$GAI = \log_2(\text{sample concentration}/\text{reference concentration})$$

A GAI of 0 indicates a concentration consistent with or less than the reference value, GAI 1 to 2 indicates minor enrichment within the range of natural variability, GAI 3 indicates significant enrichment and GAI 6 indicates extreme enrichment representing a factor of at least 100 times the reference value (Förstner, 1993; Müller, 1969). A GAI of 3 or more is generally considered significant and flags an element for further investigation to determine whether it poses an environmental risk such as AMD.

For total metals and metalloids derived from acid digestion of the soil samples, the GAI was calculated using a site-specific background concentration derived from the median of the 25th percentile of detected values across all 113 samples (the first quartile, "Q1"). This approach was adopted in the absence of pre-mining or nearby undisturbed reference data, and provides a more locally representative baseline than continental crustal abundance values. Use of site

specific background concentrations derived from lower percentile statistics is consistent with INAP (2014), which recognises that locally derived baselines are preferable in mineralised settings and that lower end data are commonly used to minimise the influence of enrichment.

Note that the 1.5 factor included in the original formulation was omitted, as this factor is intended to account for natural variability in background concentrations when using a global crustal reference; it is not appropriate when a site-specific background is used as the reference value, since natural variability is already captured within the Q1 dataset.

For elements where the Q1 background was at or below the laboratory limit of reporting, no GAI values were calculated.

APPENDIX E4 PHREEQC RAW DATA RESULTS

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Calcite
i_soln	**1**	4.49	4	-6.14E-05	0.0671737	1	4.25E-18	5.53E-15	1.34E-02	9.52E-04	1.25E-02	6.44E-03	4.70E-03	2.49E-02	2.20E-04	1.94E-05	5.52E-04	1.03E-06	8.31E-07	3.92E-06	5.96E-05	-5.3432
i_soln	**100**	4.49	4	-6.14E-05	0.0671737	1	-3.74E-17	-4.86E-14	1.34E-02	9.52E-04	1.25E-02	6.44E-03	4.70E-03	2.49E-02	2.20E-04	1.94E-05	5.52E-04	1.03E-06	8.31E-07	3.92E-06	5.96E-05	-5.3432
react	**101**	4.48312	6.95596	-5.34E-05	0.0671646	1	-4.83E-17	-6.29E-14	1.34E-02	9.52E-04	1.25E-02	6.44E-03	4.70E-03	2.49E-02	2.20E-04	1.94E-05	5.52E-04	1.03E-06	3.99E-24	3.92E-06	5.96E-05	-5.3568

state	soln	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4
i_soln	**1**	-5.5165	-10.7653	-11.3036	-6.659	-25.9425	-9.3756	-17.2621	-40.9865	-999.999	-999.999	-999.999	-999.999	-999.999	-8.5548	-999.999	-999.999	-999.999	-999.999	-999.999	5.0038	0.1489
i_soln	**100**	-5.5165	-10.7653	-11.3036	-6.659	-25.9425	-9.3756	-17.2621	-40.9865	-999.999	-999.999	-999.999	-999.999	-999.999	-8.5548	-999.999	-999.999	-999.999	-999.999	-999.999	5.0038	0.1489
react	**101**	-5.5301	-10.7925	-11.3308	-6.6726	-25.9969	-9.3892	-17.2894	-41.0546	3.0808	0.5535	8.5752	2.0986	8.8795	-8.5736	-8.2933	0.402	0.6428	2.1087	4.5206	4.9629	0.1421

state	soln	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4
i_soln	**1**	-1.6033	-2.5534	-0.0708	-0.3197	1.3606	-19.8567	-12.7657	-31.0858	-10.946	-24.3325	-5.6392	-0.0629	-0.2982	-2.8148	-5.1528	-3.9596	-999.999	-6.4558	-6.3641	-11.568	-9.5297
i_soln	**100**	-1.6033	-2.5534	-0.0708	-0.3197	1.3606	-19.8567	-12.7657	-31.0858	-10.946	-24.3325	-5.6392	-0.0629	-0.2982	-2.8148	-5.1528	-3.9596	-999.999	-6.4558	-6.3641	-11.568	-9.5297
react	**101**	-1.6716	-2.5739	-0.0913	-0.3402	1.3401	-13.9722	-9.8303	-25.2288	-10.9597	-18.4618	-5.6528	-0.0629	-0.2982	-2.8148	-5.1529	-3.9647	-22.2988	-6.4558	-6.3641	-11.568	-9.5297

state	soln	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_CO2(g)	si_O2(g)	TDS_mgL	Na_mgL
i_soln	**1**	-11.4426	-6.1818	-5.0305	-6.7919	-6.2602	-10.468	-16.5544	-8.6137	-10.7117	-8.0642	-999.999	-8.2162	0.6732	-999.999	-2.4123	-6.0161	-5.4533	-2.1669	-48.1655	3.61E+03	3.08E+02
i_soln	**100**	-11.4426	-6.1818	-5.0305	-6.7919	-6.2602	-10.468	-16.5544	-8.6137	-10.7117	-8.0642	-999.999	-8.2162	0.6732	-999.999	-2.4123	-6.0161	-5.4533	-2.1669	-48.1655	3.61E+03	3.08E+02
react	**101**	-11.4426	-6.1273	-5.0491	-6.8055	-6.2738	-10.3863	-16.4317	-8.6273	-10.7254	-8.0778	0.2705	-8.2593	0.6732	-999.999	-2.4123	-6.016	-5.4535	-2.1668	-36.3692	3.61E+03	3.08E+02

state	soln	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	As_ugL	Se_ugL	Sb_ugL	Mo_ugL	Cr_ugL	Ni_ugL	Zn_ugL	Cu_ugL
i_soln	**1**	3.72E+01	5.00E+02	1.57E+02	1.66E+02	2.40E+03	2.31E-01	6.78E-07	4.40E-95	3.69E-01	0.00E+00	9.72E+00	3.08E+01	3.27E+00	5.82E-01	4.82E+00	6.06E-01	4.81E-01	1.81E+00	1.06E+02	9.01E+02	6.55E+01
i_soln	**100**	3.72E+01	5.00E+02	1.57E+02	1.66E+02	2.40E+03	2.31E-01	6.78E-07	4.40E-95	3.69E-01	0.00E+00	9.72E+00	3.08E+01	3.27E+00	5.82E-01	4.82E+00	6.06E-01	4.81E-01	1.81E+00	1.06E+02	9.01E+02	6.55E+01
react	**101**	3.72E+01	5.00E+02	1.57E+02	1.66E+02	2.40E+03	2.27E-01	6.57E-07	4.40E-95	3.69E-01	0.00E+00	9.72E+00	3.08E+01	3.27E+00	5.82E-01	4.82E+00	6.06E-01	4.81E-01	1.81E+00	1.06E+02	9.01E+02	6.55E+01

state	soln	Pb_ugL	Cd_ugL	Hg_ugL	NO3_mgL	NH4_mgL	PO4_mgL	Na_ads_umol	K_ads_umol	Ca_ads_umol	Mg_ads_umol	Fe_ads_umol	Mn_ads_umol	Cl_ads_umol	SO4_ads_umol	HCO3_ads_umol
i_soln	**1**	1.27E+01	2.95E-01	0.00E+00	5.10E-02	1.80E-95	4.82E-11	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93
i_soln	**100**	1.27E+01	2.95E-01	0.00E+00	5.10E-02	1.80E-95	4.82E-11	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93
react	**101**	1.27E+01	2.95E-01	0.00E+00	2.45E-19	1.40E-02	4.66E-11	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K
i_soln	1	4.49	4	-6.14E-05	0.0671737	1	-2.37E-17	-3.09E-14	3.60E-04	7.77E-09	3.03E-05	5.31E-07	1.25E-02	2.62E-09	4.70E-03	8.82E-07	3.47E-08	1.03E-06	2.20E-04	1.94E-05	5.52E-04	9.52E-04
i_soln	100	4.49	4	-6.14E-05	0.0671737	1	-2.37E-17	-3.09E-14	3.60E-04	7.77E-09	3.03E-05	5.31E-07	1.25E-02	2.62E-09	4.70E-03	8.82E-07	3.47E-08	1.03E-06	2.20E-04	1.94E-05	5.52E-04	9.52E-04
react	101	3.77613	4.42703	-0.00036	0.0670589	0.999995	-1.19E-13	-1.55E-10	2.16E-04	7.77E-09	3.03E-05	5.31E-07	1.25E-02	2.62E-09	4.69E-03	8.82E-07	3.47E-08	1.03E-06	2.20E-04	1.94E-05	5.45E-04	9.04E-04

state	soln	Li	Mg	Mn	Na	N(-3)	N(5)	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite
i_soln	1	3.40E-05	6.44E-03	5.96E-05	1.34E-02	0.00E+00	8.31E-07	1.81E-06	3.92E-06	6.15E-08	2.49E-02	3.34E-09	9.46E-08	1.38E-05	8.45E-13	6.54E-11	3.52E-09	1.43E-12	1.24E-11	1.96E-12	-1.29E+01	0.00E+00
i_soln	100	3.40E-05	6.44E-03	5.96E-05	1.34E-02	0.00E+00	8.31E-07	1.81E-06	3.92E-06	6.15E-08	2.49E-02	3.34E-09	9.46E-08	1.38E-05	8.45E-13	6.54E-11	3.52E-09	1.43E-12	1.24E-11	1.96E-12	-1.29E+01	0.00E+00
react	101	3.40E-05	6.44E-03	5.96E-05	1.34E-02	8.31E-07	0.00E+00	1.81E-06	3.92E-06	6.15E-08	2.49E-02	3.34E-09	9.46E-08	1.38E-05	2.23E-12	3.34E-11	3.48E-10	2.72E-14	3.28E-11	5.16E-12	-1.25E+01	0.00E+00

state	soln	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.82E-05	4.82E-05	0.00E+00

state	soln	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite	d_Celestite	Anglesite	d_Anglesite	Halite	d_Halite	Fluorite	d_Fluorite	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.3432	-5.5165	-10.7653
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.3432	-5.5165	-10.7653
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-07	1.48E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.7636	-6.9369	-13.6062

state	soln	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)
i_soln	1	-11.3036	-6.659	-25.9425	-9.3756	-17.2621	-40.9865	0.1505	-5.3071	2.7145	-0.8318	3.0376	-8.5548	-14.1352	-2.5284	-8.1756	-6.7029	-4.291	5.0038	0.1489	-1.6033	-2.5534
i_soln	100	-11.3036	-6.659	-25.9425	-9.3756	-17.2621	-40.9865	0.1505	-5.3071	2.7145	-0.8318	3.0376	-8.5548	-14.1352	-2.5284	-8.1756	-6.7029	-4.291	5.0038	0.1489	-1.6033	-2.5534
react	101	-14.1445	-8.0795	-31.6244	-10.7961	-20.1096	-48.0955	-1.5685	-8.7451	-0.7234	-2.5508	-1.8326	-9.987	-19.0053	-4.2474	-10.48	-9.7211	-7.3317	0	-0.7982	-9.6705	-4.9268

state	soln	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite
i_soln	1	-0.0708	-0.3197	1.3606	-19.8567	-12.7657	-31.0858	-10.946	-24.3325	-5.6392	-0.0629	-0.2982	-2.8148	-5.1528	-3.9597	-28.2006	-6.4558	-6.3641	-11.568	-9.5297	-11.4426	-6.1818
i_soln	100	-0.0708	-0.3197	1.3606	-19.8567	-12.7657	-31.0858	-10.946	-24.3325	-5.6392	-0.0629	-0.2982	-2.8148	-5.1528	-3.9597	-28.2006	-6.4558	-6.3641	-11.568	-9.5297	-11.4426	-6.1818
react	101	-2.4441	-2.6931	-1.0128	-21.8574	-14.4795	-35.9405	-12.373	-27.7602	-7.0596	-0.0636	-0.2989	-2.8156	-5.1541	-3.9655	-27.3597	-6.4566	-6.3649	-11.5687	-9.5304	-11.4431	-6.149

state	soln	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_CO2(g)	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL
i_soln	1	-5.0305	-6.7919	-6.2602	-10.468	-16.5544	-8.6137	-10.7117	-8.0642	-2.6664	-8.2162	0.6732	-999.999	-2.4123	-6.0161	-5.4533	-2.1669	-48.1655	3.61E+03	3.08E+02	3.72E+01	5.00E+02
i_soln	100	-5.0305	-6.7919	-6.2602	-10.468	-16.5544	-8.6137	-10.7117	-8.0642	-2.6664	-8.2162	0.6732	-999.999	-2.4123	-6.0161	-5.4533	-2.1669	-48.1655	3.61E+03	3.08E+02	3.72E+01	5.00E+02
react	101	-6.4561	-8.2121	-7.68	-13.2485	-20.7218	-10.0339	-12.1322	-9.4846	-3.6739	-11.0896	0	-999.999	-2.4124	-6.0161	-5.0403	-2.1603	-49.3129	3.60E+03	3.08E+02	3.54E+01	5.00E+02

state	soln	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL	As_ugL
i_soln	1	1.57E+02	1.66E+02	2.40E+03	2.31E-01	6.78E-07	4.40E-95	3.69E-01	0.00E+00	9.72E+00	3.08E+01	3.27E+00	3.27E+02	4.79E+00	5.20E+01	1.81E+00	6.55E+01	1.06E+02	9.01E+02	1.27E+01	2.95E-01	5.82E-01
i_soln	100	1.57E+02	1.66E+02	2.40E+03	2.31E-01	6.78E-07	4.40E-95	3.69E-01	0.00E+00	9.72E+00	3.08E+01	3.27E+00	3.27E+02	4.79E+00	5.20E+01	1.81E+00	6.55E+01	1.06E+02	9.01E+02	1.27E+01	2.95E-01	5.82E-01
react	101	1.57E+02	1.66E+02	2.39E+03	4.53E-02	2.57E-08	4.40E-95	3.69E-01	0.00E+00	5.82E+00	3.04E+01	3.27E+00	3.27E+02	4.79E+00	5.20E+01	1.81E+00	6.55E+01	1.06E+02	9.01E+02	1.27E+01	2.95E-01	5.82E-01

state	soln	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL	Na_ads_umol	K_ads_umol	Ca_ads_umol	Mg_ads_umol	Fe_ads_umol	Mn_ads_umol	Cl_ads_umol	SO4_ads_umol	HCO3_ads_umol	Fe_total_mgL
i_soln	1	7.95E-01	4.82E+00	5.10E-02	1.80E-95	4.82E-11	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93	3.08E+01
i_soln	100	7.95E-01	4.82E+00	5.10E-02	1.80E-95	4.82E-11	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93	3.08E+01
react	101	7.95E-01	4.82E+00	0.00E+00	1.40E-02	1.79E-12	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	1.00E-93	2.00E-93	4.00E-93	2.00E-93	3.04E+01

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li
i_soln	1	4.77	4	-2.90E-05	0.0642684	1	9.35E-18	1.27E-14	2.59E-04	6.70E-09	3.16E-05	5.57E-07	1.20E-02	1.79E-09	4.21E-03	8.82E-10	9.65E-09	8.68E-07	5.01E-06	1.06E-05	5.30E-04	9.75E-04	3.57E-05
i_soln	2	6.66	4	0.0022506	0.0662598	1	-8.81E-17	-1.11E-13	3.72E-07	6.70E-09	3.06E-05	5.57E-08	1.23E-02	4.46E-10	7.72E-03	8.82E-10	9.65E-09	1.11E-07	2.85E-03	2.64E-05	4.30E-04	7.44E-04	4.16E-05
i_soln	3	6.56	4	0.0004759	0.0671947	1	3.49E-16	4.54E-13	5.95E-06	2.68E-08	2.97E-05	2.23E-07	1.27E-02	1.79E-09	4.03E-03	8.82E-10	9.65E-09	4.26E-07	4.81E-04	2.11E-05	7.06E-04	9.24E-04	3.76E-05
i_soln	4	4.82	4	-2.17E-05	0.0693964	1	-9.60E-18	-1.21E-14	3.27E-04	6.70E-09	2.97E-05	5.57E-07	1.32E-02	2.68E-09	5.74E-03	8.82E-10	1.93E-08	6.48E-07	3.01E-05	2.64E-05	6.06E-04	1.00E-03	3.38E-05
i_soln	5	6.42	4	0.0003483	0.0694193	1	3.70E-12	4.55E-09	1.12E-06	6.70E-09	3.62E-05	1.11E-07	1.21E-02	4.46E-10	7.08E-03	8.82E-10	9.65E-09	2.84E-07	5.21E-04	1.58E-05	4.38E-04	8.73E-04	3.70E-05
i_soln	6	4.62	4	-5.13E-05	0.0683533	1	1.41E-17	1.78E-14	3.16E-07	6.70E-12	2.97E-08	6.68E-10	1.31E-02	1.79E-12	6.31E-03	8.82E-10	1.93E-11	6.16E-10	5.01E-06	2.64E-05	5.75E-07	9.24E-04	3.83E-08
i_soln	7	5.39	4	-3.96E-06	0.0719982	1	-3.60E-16	-4.36E-13	3.72E-06	6.70E-09	3.53E-05	2.23E-07	1.40E-02	4.46E-10	5.54E-03	8.82E-10	9.65E-09	5.05E-07	3.01E-05	1.59E-05	6.02E-04	1.00E-03	3.90E-05
i_soln	8	4.2	4	-0.000138	0.0676672	1	-5.29E-17	-6.86E-14	5.13E-04	6.70E-09	2.23E-05	6.68E-07	1.24E-02	4.46E-09	3.32E-03	8.82E-10	5.79E-08	8.84E-07	5.01E-06	2.64E-06	5.98E-04	1.05E-03	3.05E-05
i_soln	9	5.86	4	0.0001038	0.0698044	1	6.49E-18	8.10E-15	3.98E-05	6.70E-09	3.62E-05	4.45E-07	1.27E-02	4.46E-10	4.84E-03	8.82E-10	9.65E-09	3.95E-07	2.21E-04	1.58E-05	7.71E-04	9.24E-04	4.18E-05
i_soln	10	6.41	4	0.0007122	0.0655735	1	9.43E-15	1.25E-11	6.69E-06	6.70E-09	3.25E-05	2.23E-07	1.19E-02	4.46E-10	4.35E-03	8.82E-10	9.65E-09	3.32E-07	1.00E-03	1.58E-05	7.13E-04	9.24E-04	3.90E-05
i_soln	11	3.92	4	-0.000255	0.0690173	1	-1.59E-15	-1.97E-12	5.50E-04	6.70E-09	3.90E-05	6.68E-07	1.26E-02	1.79E-09	7.24E-03	8.82E-10	9.65E-09	8.69E-07	5.01E-06	2.64E-06	5.59E-04	1.10E-03	4.63E-05
i_soln	12	3.94	4	-0.000249	0.0682233	1	-3.35E-17	-4.33E-14	5.17E-04	6.70E-09	3.25E-05	6.68E-07	1.26E-02	5.36E-09	2.32E-03	8.82E-10	7.72E-08	8.53E-07	5.01E-06	2.64E-06	5.77E-04	1.00E-03	3.92E-05
i_soln	13	4.36	4	-9.08E-05	0.0682853	1	9.14E-15	1.18E-11	5.36E-04	1.34E-08	2.97E-05	6.68E-07	1.29E-02	5.36E-09	2.66E-03	8.82E-10	7.72E-08	8.69E-07	5.01E-06	2.64E-06	5.27E-04	1.03E-03	3.38E-05
i_soln	14	4.1	4	-0.000165	0.0700294	1	3.52E-17	4.30E-14	5.10E-04	6.70E-09	2.60E-05	5.57E-07	1.29E-02	2.68E-09	7.76E-03	8.82E-10	1.93E-08	7.42E-07	5.01E-06	2.64E-06	5.82E-04	1.13E-03	2.39E-05
i_soln	15	3.79	4	-0.000348	0.0675747	1	4.05E-15	5.20E-12	5.24E-04	6.70E-09	2.97E-05	6.68E-07	1.26E-02	3.57E-09	5.50E-03	8.34E-07	3.86E-08	8.53E-07	5.01E-06	5.28E-06	5.46E-04	9.50E-04	3.41E-05
i_soln	16	4.03	4	-0.000199	0.0649855	1	2.18E-17	2.91E-14	5.80E-04	6.70E-09	3.62E-05	8.91E-07	1.12E-02	2.68E-09	4.53E-03	9.19E-07	1.93E-08	7.90E-09	5.01E-06	1.06E-05	5.17E-04	1.00E-03	3.37E-05
i_soln	17	3.81	4	-0.000355	0.0673706	1	5.52E-17	7.14E-14	5.62E-04	6.70E-09	3.34E-05	6.68E-07	1.12E-02	2.68E-09	2.12E-03	9.20E-07	3.86E-08	1.42E-07	5.01E-06	1.06E-04	5.09E-04	8.98E-04	3.21E-05
i_soln	18	3.69	4	-0.000448	0.0685265	1	-6.93E-13	-8.81E-10	4.84E-04	6.70E-09	3.06E-05	7.80E-07	1.25E-02	2.68E-09	5.34E-03	9.20E-07	7.72E-08	2.50E-06	5.01E-06	1.06E-04	4.49E-04	9.75E-04	3.28E-05
i_soln	19	4.51	4	-6.33E-05	0.0689616	1	-1.23E-17	-1.58E-14	5.47E-04	6.70E-09	3.90E-05	8.91E-07	1.28E-02	2.68E-09	1.95E-03	1.04E-06	7.72E-08	6.32E-08	3.01E-05	1.06E-05	8.90E-04	9.76E-04	3.56E-05
i_soln	20	3.81	4	-0.000344	0.065123	1	-9.33E-14	-1.27E-10	4.95E-04	6.70E-09	2.88E-05	5.57E-07	1.19E-02	3.57E-09	2.62E-03	8.68E-07	5.79E-08	9.84E-06	5.01E-06	5.28E-06	5.68E-04	9.24E-04	3.01E-05
i_soln	21	4.18	4	-0.000141	0.0676139	1	-3.21E-15	-4.19E-12	5.54E-04	1.34E-08	3.16E-05	7.80E-07	1.27E-02	7.14E-09	3.98E-03	8.51E-07	7.72E-08	3.66E-06	5.01E-06	2.64E-06	5.89E-04	9.50E-04	3.04E-05
i_soln	22	3.4	4	-0.000757	0.0629026	1	-1.27E-17	-1.68E-14	5.43E-04	6.69E-09	2.78E-05	6.68E-07	1.15E-02	3.57E-09	1.27E-02	8.85E-07	3.86E-08	4.10E-07	5.01E-06	2.64E-05	5.37E-04	8.72E-04	3.61E-05
i_soln	23	4.02	4	-0.000204	0.0699512	1	3.03E-14	3.83E-11	5.28E-04	6.70E-09	2.79E-05	6.68E-07	1.36E-02	3.57E-09	4.82E-03	8.52E-07	3.86E-08	1.42E-07	5.01E-06	5.28E-06	5.19E-04	9.24E-04	3.72E-05
i_soln	24	4.59	4	-4.67E-05	0.0606556	1	-5.92E-14	-8.69E-11	4.02E-04	6.70E-09	2.88E-05	5.57E-07	1.16E-02	1.78E-09	3.44E-03	7.32E-07	5.79E-08	1.58E-07	4.01E-05	1.06E-05	5.16E-04	7.70E-04	3.40E-05
i_soln	200	3.96	4	-0.00024	0.0675332	1	-1.01E-13	-1.33E-10	5.21E-04	6.70E-09	3.25E-05	5.31E-10	1.25E-02	3.57E-09	2.04E-03	8.82E-10	1.93E-08	2.21E-07	2.20E-04	1.06E-05	5.30E-04	9.52E-04	3.40E-08
react	101	3.63436	4.95434	-0.000513	0.0674255	0.999995	-1.01E-13	-1.33E-10	3.97E-04	6.70E-09	3.25E-05	5.31E-10	1.25E-02	3.57E-09	2.04E-03	8.82E-10	1.93E-08	2.21E-07	2.20E-04	1.06E-05	5.13E-04	9.11E-04	3.40E-08
react	102	3.87273	4.18221	-0.000285	0.0641689	0.999995	-1.77E-17	-2.41E-14	1.33E-04	6.70E-09	3.16E-05	5.57E-07	1.20E-02	1.79E-09	4.21E-03	8.82E-10	9.65E-09	8.68E-07	5.01E-06	1.06E-05	5.27E-04	9.33E-04	3.57E-05
react	103	6.14375	-2.30662	0.0013129	0.0655164	0.999993	-3.10E-16	-3.97E-13	1.12E-07	6.70E-09	3.06E-05	5.57E-08	1.23E-02	4.46E-10	7.72E-03	8.82E-10	9.65E-09	1.11E-07	2.85E-03	2.64E-05	2.62E-05	7.74E-04	4.16E-05
react	104	5.48119	-1.40502	6.32E-05	0.0667499	0.999999	3.42E-16	4.49E-13	1.12E-06	2.68E-08	2.97E-05	2.23E-07	1.27E-02	1.79E-09	4.03E-03	8.82E-10	9.65E-09	4.26E-07	4.81E-04	2.11E-05	4.85E-04	8.93E-04	3.76E-05
react	105	4.45719	2.41659	-7.41E-05	0.0692819	0.999984	-4.59E-18	-5.79E-15	2.38E-05	6.70E-09	2.97E-05	5.57E-07	1.32E-02	2.68E-09	5.61E-03	8.82E-10	1.93E-08	6.48E-07	3.01E-05	2.64E-05	8.17E-04	9.00E-04	3.38E-05
react	106	4.85002	1.85267	-7.83E-06	0.0691702	1	3.70E-12	4.57E-09	7.54E-06	6.70E-09	3.62E-05	1.11E-07	1.21E-02	4.46E-10	7.15E-03	8.82E-10	9.65E-09	2.84E-07	5.21E-04	1.58E-05	2.96E-04	8.75E-04	3.70E-05
react	107	5.20825	2.23611	-1.27E-05	0.0683632	1	1.52E-17	1.92E-14	4.21E-06	6.70E-12	2.97E-08	6.68E-10	1.31E-02	1.79E-12	6.30E-03	8.82E-10	1.93E-11	6.16E-10	5.01E-06	2.64E-05	1.12E-05	9.25E-04	3.83E-08
react	108	4.43788	2.59452	-8.12E-05	0.0719837	1	-3.36E-16	-4.06E-13	1.72E-05	6.70E-09	3.53E-05	2.23E-07	1.40E-02	4.46E-10	5.56E-03	8.82E-10	9.65E-09	5.05E-07	3.01E-05	1.59E-05	5.61E-04	1.01E-03	3.90E-05
react	109	3.76225	4.36048	-0.000385	0.067546	0.999985	3.67E-15	4.78E-12	2.00E-04	6.70E-09	2.23E-05	6.68E-07	1.24E-02	4.46E-09	3.23E-03	8.82E-10	5.79E-08	8.84E-07	5.01E-06	2.64E-06	7.43E-04	9.48E-04	3.05E-05
react	110	4.46661	2.46158	-7.03E-05	0.0696915	1	-1.43E-17	-1.78E-14	1.74E-05	6.70E-09	3.62E-05	4.45E-07	1.27E-02	4.46E-10	4.87E-03	8.82E-10	9.65E-09	3.95E-07	2.21E-04	1.58E-05	7.19E-04	9.17E-04	4.18E-05
react	111	4.50968	2.57444	-4.66E-05	0.0649823	1	9.38E-15	1.26E-11	1.47E-05	6.70E-09	3.25E-05	2.23E-07	1.19E-02	4.46E-10	4.45E-03	8.82E-10	9.65E-09	3.32E-07	1.00E-03	1.58E-05	3.98E-04	9.27E-04	3.90E-05
react	112	3.81034	4.10594	-0.00033	0.0689569	0.999979	4.32E-15	5.38E-12	1.66E-04	6.70E-09	3.90E-05	6.68E-07	1.26E-02	1.79E-09	7.08E-03	8.82E-10	9.65E-09	8.69E-07	5.01E-06	2.64E-06	8.18E-04	9.76E-04	4.63E-05
react	113	3.64929	4.8876	-0.000489	0.0681505	0.999995	-1.75E-16	-2.26E-13	3.94E-04	6.70E-09	3.25E-05	6.68E-07	1.26E-02	5.36E-09	2.32E-03	8.82E-10	7.72E-08	8.53E-07	5.01E-06	2.64E-06	5.74E-04	9.60E-04	3.92E-05
react	114	3.67053	4.84461	-0.000465	0.0681491	0.999993	9.11E-15	1.18E-11	3.51E-04	1.34E-08	2.97E-05	6.68E-07	1.29E-02	5.36E-09	2.66E-03	8.82E-10	7.72E-08	8.69E-07	5.01E-06	2.64E-06	5.24E-04	9.65E-04	3.38E-05
react	115	3.64661	4.71895	-0.000475	0.0699181	0.999994	-1.24E-12	-1.51E-09	3.63E-04	6.70E-09	2.60E-05	5.57E-07	1.29E-02	2.68E-09	7.76E-03	8.82E-10	1.93E-08	7.42E-07	5.01E-06	2.64E-06	5.71E-04	1.08E-03	2.39E-05
react	116	3.60466	4.86618	-0.000534	0.0675111	0.999997	-3.67E-11	-4.71E-08	4.33E-04	6.70E-09	2.97E-05	6.68E-07	1.26E-02	3.57E-09	5.50E-03	8.34E-07	3.86E-08	8.53E-07	5.01E-06	5.28E-06	5.44E-04	9.19E-04	3.41E-05
react	117	3.60523	4.89177	-0.000535	0.0648685	0.999994	-6.03E-11	-8.05E-08	4.14E-04	6.70E-09	3.62E-05	8.91E-07	1.12E-02	2.68E-09	4.53E-03	9.19E-07	1.93E-08	7.90E-09	5.01E-06	1.06E-05	5.15E-04	9.46E-04	3.37E-05
react	118	3.61711	4.95339	-0.000554	0.0672867	0.999996	-2.64E-16	-3.41E-13	4.64E-04	6.70E-09	3.34E-05	6.68E-07	1.12E-02	2.68E-09	2.12E-03	9.20E-07	3.86E-08	1.42E-07	5.01E-06	1.06E-04	5.06E-04	8.66E-04	3.21E-05
react	119	3.62594	4.87663	-0.000519	0.0684978	0.999999	-6.93E-13	-8.81E-10	4.50E-04	6.70E-09	3.06E-05	7.80E-07	1.25E-02	2.68E-09	5.33E-03	9.20E-07	7.72E-08	2.50E-06	5.01E-06	1.06E-04	4.47E-04	9.64E-04	3.28E-05
react	120	3.65749	4.6299	-0.000502	0.0687912	0.999992	-5.03E-18	-6.50E-15	3.30E-04	6.70E-09	3.90E-05	8.91E-07	1.28E-02	2.68E-09	1.95E-03	1.04E-06	7.72E-08	6.32E-08	3.01E-05	1.06E-05	8.87E-04	9.03E-04	3.56E-05
react	121	3.60566	4.89872	-0.000551	0.0650506	0.999996	-7.38E-11	-1.00E-07	3.92E-04	6.70E-09	2.88E-05	5.57E-07	1.19E-02	3.57E-09	2.61E-03	8.68E-07	5.79E-08	9.84E-06	5.01E-06	5.28E-06	5.66E-04	8.90E-04	3.01E-05
react	122	3.63946	4.78796	-0.000498	0.0674891	0.999994	-3.71E-15	-4.84E-12	3.77E-04	1.34E-08	3.16E-05	7.80E-07	1.27E-02	7.14E-09	3.98E-03	8.51E-07	7.72E-08	3.66E-06	5.01E-06	2.64E-06	5.87E-04	8.91E-04	3.04E-05
react	123	3.52723	4.95935	-0.000565	0.0629568	1	-2.54E-17	-3.34E-14	6.40E-04	6.69E-09	2.78E-05	6.68E-07	1.15E-02	3.57E-09	1.27E-02	8.85E-07	3.86E-08	4.10E-07	5.01E-06	2.64E-05	5.35E-04	9.05E-04	3.61E-05
react	124	3.64862	4.82323	-0.000484	0.0698565	0.999995	-1.71E-11	-2.15E-08	3.91E-04	6.70E-09	2.79E-05	6.68E-07	1.36E-02	3.57E-09	4.81E-03	8.52E-07	3.86E-08	1.42E-07	5.01E-06	5.28E-06	5.17E-04	8.78E-04	3.72E-05
react	125	3.74002	4.53194	-0.000385	0.0605326	0.999994	-5.92E-14	-8.69E-11	2.34E-04	6.70E-09	2.88E-05	5.57E-07	1.16E-02	1.79E-09	3.44E-03	7.32E-07	5.79E-08	1.58E-07	4.01E-05	1.06E-05	5.13E-04	7.14E-04	3.40E-05

state	soln	Mg	Mn	Na	N(-3)	N(5)	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite
i_soln	1	5.86E-03	5.90E-05	1.31E-02	0.00E+00	3.58E-07	2.21E-06	9.72E-07	1.45E-08	2.38E-02	4.22E-09	9.85E-08	2.06E-05	8.11E-13	1.22E-10	1.26E-08	9.81E-12	1.20E-11	1.84E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	2	6.15E-03	7.42E-05	1.50E-02	0.00E+00	1.43E-06	4.28E-07	9.72E-07	2.42E-09	2.19E-02	2.11E-09	9.85E-08	2.46E-07	6.32E-13	7.93E-09	5.78E-05	4.31E-06	8.72E-12	1.21E-12	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	3	6.11E-03	6.56E-05	1.40E-02	0.00E+00	3.58E-07	1.15E-06	6.48E-07	2.42E-08	2.49E-02	2.11E-09	9.85E-08	1.55E-05	9.89E-13	9.03E-09	5.68E-05	2.73E-06	1.47E-11	2.35E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	4	6.61E-03	6.49E-05	1.34E-02	0.00E+00	3.58E-07	1.73E-06	9.72E-07	3.39E-08	2.54E-02	2.11E-09	9.85E-08	2.44E-05	8.89E-13	1.39E-10	1.66E-08	1.27E-11	1.25E-11	2.00E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	5	7.14E-03	6.72E-05	1.52E-02	0.00E+00	3.58E-07	8.55E-07	3.24E-07	2.42E-09	2.41E-02	2.11E-09	9.85E-08	7.67E-08	5.00E-13	2.51E-09	1.50E-05	2.63E-07	6.12E-12	9.87E-13	-1.32E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	6	6.73E-03	6.41E-08	1.45E-02	0.00E+00	3.58E-07	1.97E-09	9.72E-07	1.45E-11	2.44E-02	0.00E+00	9.85E-11	2.75E-08	8.39E-16	8.24E-14	6.31E-12	2.98E-15	1.16E-14	1.83E-15	-1.59E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	7	6.86E-03	6.78E-05	1.46E-02	0.00E+00	3.58E-07	1.57E-06	1.94E-06	2.42E-09	2.65E-02	2.11E-09	9.85E-08	1.23E-07	9.98E-13	6.45E-10	2.51E-07	9.69E-10	1.52E-11	2.48E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	8	6.28E-03	6.17E-05	1.39E-02	0.00E+00	3.58E-07	2.24E-06	3.89E-06	9.69E-08	2.60E-02	4.22E-09	9.85E-08	1.98E-05	9.64E-13	4.06E-11	1.05E-09	2.54E-13	1.52E-11	2.47E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	9	6.69E-03	7.89E-05	1.48E-02	0.00E+00	7.17E-07	1.16E-06	6.48E-06	2.42E-09	2.57E-02	2.11E-09	9.85E-08	8.14E-07	1.14E-12	1.99E-09	2.56E-06	2.25E-08	1.67E-11	2.74E-12	-1.28E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	10	6.19E-03	7.36E-05	1.39E-02	0.00E+00	7.88E-06	8.89E-07	3.08E-05	2.42E-09	2.38E-02	2.11E-09	9.85E-08	4.30E-07	1.06E-12	7.01E-09	3.09E-05	1.09E-06	1.56E-11	2.41E-12	-1.28E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	11	6.52E-03	6.14E-05	1.41E-02	0.00E+00	3.58E-07	2.19E-06	3.24E-06	2.42E-08	2.48E-02	4.22E-09	9.85E-08	1.18E-05	8.73E-13	1.81E-11	2.59E-10	2.84E-14	1.23E-11	1.88E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	12	5.95E-03	6.07E-05	1.44E-02	0.00E+00	3.58E-07	2.24E-06	2.27E-06	1.02E-07	2.66E-02	4.22E-09	9.85E-08	2.85E-05	7.94E-13	1.59E-11	2.62E-10	2.41E-14	1.18E-11	2.03E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	13	6.07E-03	6.01E-05	1.38E-02	0.00E+00	3.58E-07	2.19E-06	1.30E-06	1.94E-08	2.65E-02	4.22E-09	9.85E-08	2.41E-05	7.38E-13	3.93E-11	1.68E-09	4.21E-13	1.10E-11	1.86E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	14	6.61E-03	6.10E-05	1.42E-02	0.00E+00	1.43E-06	2.00E-06	2.27E-06	4.84E-08	2.49E-02	4.22E-09	9.85E-08	1.05E-05	8.57E-13	2.51E-11	5.80E-10	8.22E-14	1.16E-11	1.79E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	15	6.28E-03	5.53E-05	1.35E-02	0.00E+00	3.58E-07	2.56E-06	1.30E-06	1.21E-07	2.50E-02	4.22E-09	9.85E-08	2.61E-05	8.49E-13	1.32E-11	1.40E-10	1.16E-14	1.23E-11	1.92E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	16	6.36E-03	5.50E-05	1.37E-02	0.00E+00	3.58E-07	2.26E-06	9.39E-06	3.87E-08	2.42E-02	4.22E-09	9.85E-08	1.23E-05	8.25E-13	2.34E-11	4.20E-10	6.60E-14	1.24E-11	1.91E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	17	6.11E-03	5.13E-05	1.61E-02	0.00E+00	3.58E-07	2.12E-06	9.72E-06	2.91E-08	2.63E-02	4.22E-09	9.85E-08	9.96E-06	8.61E-13	1.57E-11	1.55E-10	1.79E-14	1.45E-11	2.41E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	18	6.98E-03	6.27E-05	1.32E-02	0.00E+00	3.58E-07	2.33E-06	1.94E-06	3.20E-07	2.54E-02	4.22E-09	9.85E-08	2.00E-05	7.44E-13	9.73E-12	7.66E-11	5.88E-15	1.12E-11	1.75E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	19	6.32E-03	6.30E-05	1.37E-02	0.00E+00	3.58E-07	2.46E-06	2.59E-06	1.60E-07	2.73E-02	4.22E-09	9.85E-08	1.55E-05	1.46E-12	1.28E-10	6.53E-09	3.46E-12	2.40E-11	4.05E-12	-1.27E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	20	6.36E-03	5.70E-05	1.26E-02	0.00E+00	3.58E-07	2.09E-06	6.48E-07	3.00E-07	2.53E-02	4.22E-09	9.85E-08	2.67E-05	9.60E-13	1.75E-11	1.77E-10	1.98E-14	1.55E-11	2.45E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	21	6.65E-03	6.21E-05	1.25E-02	0.00E+00	3.58E-07	2.14E-06	9.72E-07	9.69E-09	2.57E-02	4.22E-09	9.85E-08	2.87E-05	9.01E-13	3.42E-11	8.97E-10	1.79E-13	1.34E-11	2.15E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	22	6.23E-03	5.90E-05	1.13E-02	0.00E+00	3.58E-07	2.14E-06	2.91E-06	7.74E-08	1.93E-02	4.21E-09	9.84E-08	1.18E-05	8.20E-13	4.92E-12	2.35E-11	6.48E-16	9.12E-12	1.10E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	23	7.10E-03	5.65E-05	1.21E-02	0.00E+00	3.58E-07	2.14E-06	4.54E-06	3.88E-08	2.63E-02	4.22E-09	9.85E-08	1.32E-05	7.57E-13	1.86E-11	3.55E-10	4.26E-14	1.08E-11	1.75E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	24	6.03E-03	5.48E-05	1.05E-02	0.00E+00	3.58E-07	1.86E-06	2.92E-06	4.36E-08	2.28E-02	2.11E-09	9.85E-08	1.41E-05	8.49E-13	9.25E-11	5.92E-09	3.69E-12	1.29E-11	1.88E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	200	6.43E-03	5.77E-05	1.34E-02	0.00E+00	2.15E-06	2.21E-06	3.92E-06	2.42E-08	2.65E-02	3.34E-12	9.85E-08	9.30E-06	7.97E-13	1.82E-11	2.88E-10	3.46E-14	1.24E-11	2.09E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
react	101	6.43E-03	5.77E-05	1.34E-02	2.15E-06	0.00E+00	2.21E-06	3.92E-06	2.42E-08	2.65E-02	3.34E-12	9.85E-08	9.30E-06	6.95E-12	7.51E-11	5.61E-10	3.19E-14	1.08E-10	1.81E-11	-1.20E+01	0.00E+00	0.00E+00	0.00E+00
react	102	5.86E-03	5.90E-05	1.31E-02	3.58E-07	0.00E+00	2.21E-06	9.72E-07	1.45E-08	2.37E-02	4.22E-09	9.85E-08	2.06E-05	1.23E-12	2.34E-11	3.06E-10	3.02E-14	1.81E-11	2.78E-12	-1.28E+01	0.00E+00	0.00E+00	0.00E+00
react	103	6.15E-03	7.33E-05	1.50E-02	1.43E-06	0.00E+00	4.28E-07	1.14E-07	2.42E-09	2.20E-02	2.11E-09	9.85E-08	2.46E-07	2.22E-20	8.51E-17	1.90E-13	4.31E-15	3.11E-19	4.33E-20	-2.05E+01	0.00E+00	0.00E+00	0.00E+00
react	104	6.11E-03	6.55E-05	1.40E-02	3.58E-07	0.00E+00	1.15E-06	5.23E-07	2.42E-08	2.48E-02	2.11E-09	9.85E-08	1.55E-05	2.92E-18	2.23E-15	1.17E-12	4.70E-15	4.37E-17	6.97E-18	-1.84E+01	0.00E+00	0.00E+00	0.00E+00
react	105	6.61E-03	6.58E-05	1.34E-02	3.58E-07	0.00E+00	1.73E-06	1.96E-06	3.39E-08	2.52E-02	2.11E-09	9.85E-08	2.44E-05	3.13E-14	2.12E-12	1.10E-10	3.65E-14	4.41E-13	7.05E-14	-1.44E+01	0.00E+00	0.00E+00	0.00E+00
react	106	7.14E-03	6.72E-05	1.52E-02	3.58E-07	0.00E+00	8.55E-07	3.24E-07	2.42E-09	2.41E-02	2.11E-09	9.85E-08	7.67E-08	2.49E-15	3.36E-13	5.43E-11	2.56E-14	3.05E-14	4.94E-15	-1.55E+01	0.00E+00	0.00E+00	0.00E+00
react	107	6.73E-03	6.41E-08	1.45E-02	3.58E-07	0.00E+00	1.97E-09	9.72E-07	1.45E-11	2.44E-02	0.00E+00	9.85E-11	2.75E-08	2.80E-16	1.07E-13	3.17E-11	5.80E-14	3.89E-15	6.11E-16	-1.64E+01	0.00E+00	0.00E+00	0.00E+00
react	108	6.86E-03	6.78E-05	1.46E-02	3.58E-07	0.00E+00	1.57E-06	1.94E-06	2.42E-09	2.65E-02	2.11E-09	9.85E-08	1.23E-07	3.66E-14	2.64E-12	1.15E-10	4.94E-14	5.58E-13	9.09E-14	-1.43E+01	0.00E+00	0.00E+00	0.00E+00
react	109	6.28E-03	6.17E-05	1.39E-02	3.58E-07	0.00E+00	2.24E-06	3.89E-06	9.69E-08	2.58E-02	4.22E-09	9.85E-08	1.98E-05	2.75E-12	4.22E-11	3.98E-10	3.53E-14	4.32E-11	7.01E-12	-1.24E+01	0.00E+00	0.00E+00	0.00E+00
react	110	6.69E-03	7.70E-05	1.48E-02	7.17E-07	0.00E+00	1.16E-06	4.60E-06	2.42E-09	2.57E-02	2.11E-09	9.85E-08	8.14E-07	3.09E-14	2.18E-12	1.13E-10	4.04E-14	4.52E-13	7.41E-14	-1.44E+01	0.00E+00	0.00E+00	0.00E+00
react	111	6.19E-03	4.88E-05	1.39E-02	7.88E-06	0.00E+00	8.89E-07	5.98E-06	2.42E-09	2.38E-02	2.11E-09	9.85E-08	4.30E-07	2.33E-14	1.94E-12	1.08E-10	4.82E-14	3.46E-13	5.36E-14	-1.45E+01	0.00E+00	0.00E+00	0.00E+00
react	112	6.52E-03	7.83E-05	1.41E-02	3.58E-07	0.00E+00	2.19E-06	2.02E-05	2.42E-08	2.45E-02	4.22E-09	9.85E-08	1.18E-05	1.63E-12	2.62E-11	2.92E-10	2.48E-14	2.29E-11	3.51E-12	-1.27E+01	0.00E+00	0.00E+00	0.00E+00
react	113	5.95E-03	7.04E-05	1.44E-02	3.58E-07	0.00E+00	2.24E-06	1.20E-05	1.02E-07	2.66E-02	4.22E-09	9.85E-08	2.85E-05	6.10E-12	6.24E-11	5.27E-10	2.48E-14	9.08E-11	1.55E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	114	6.07E-03	6.01E-05	1.38E-02	3.58E-07	0.00E+00	2.19E-06	1.30E-06	1.94E-08	2.64E-02	4.22E-09	9.85E-08	2.41E-05	5.14E-12	5.59E-11	4.89E-10	2.50E-14	7.62E-11	1.29E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	115	6.61E-03	6.10E-05	1.42E-02	1.43E-06	0.00E+00	2.00E-06	2.27E-06	4.84E-08	2.48E-02	4.22E-09	9.85E-08	1.05E-05	4.40E-12	4.55E-11	3.70E-10	1.85E-14	5.92E-11	9.16E-12	-1.22E+01	0.00E+00	0.00E+00	0.00E+00
react	116	6.28E-03	5.53E-05	1.35E-02	3.58E-07	0.00E+00	2.56E-06	1.30E-06	1.21E-07	2.49E-02	4.22E-09	9.85E-08	2.61E-05	6.21E-12	6.31E-11	4.37E-10	2.36E-14	9.01E-11	1.40E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	117	6.36E-03	5.50E-05	1.37E-02	3.58E-07	0.00E+00	2.26E-06	9.39E-06	3.87E-08	2.41E-02	4.22E-09	9.85E-08	1.23E-05	6.40E-12	6.83E-11	4.62E-10	2.72E-14	9.62E-11	1.47E-11	-1.20E+01	0.00E+00	0.00E+00	0.00E+00
react	118	6.11E-03	5.13E-05	1.61E-02	3.58E-07	0.00E+00	2.12E-06	9.72E-06	2.91E-08	2.63E-02	4.22E-09	9.85E-08	9.96E-06	7.69E-12	9.00E-11	5.71E-10	4.22E-14	1.29E-10	2.15E-11	-1.20E+01	0.00E+00	0.00E+00	0.00E+00
react	119	6.98E-03	6.27E-05	1.32E-02	3.58E-07	0.00E+00	2.33E-06	1.94E-06	3.20E-07	2.54E-02	4.22E-09	9.85E-08	2.00E-05	5.57E-12	6.28E-11	4.27E-10	2.83E-14	8.38E-11	1.31E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	120	6.32E-03	6.30E-05	1.37E-02	3.58E-07	0.00E+00	2.46E-06	2.59E-06	1.60E-07	2.71E-02	4.22E-09	9.85E-08	1.55E-05	6.21E-12	7.66E-11	5.49E-10	4.08E-14	1.02E-10	1.71E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	121	6.36E-03	5.70E-05	1.26E-02	3.58E-07	0.00E+00	2.09E-06	6.48E-07	3.00E-07	2.52E-02	4.22E-09	9.85E-08	2.67E-05	7.58E-12	8.64E-11	5.44E-10	3.82E-14	1.22E-10	1.92E-11	-1.20E+01	0.00E+00	0.00E+00	0.00E+00
react	122	6.65E-03	6.21E-05	1.25E-02	3.58E-07	0.00E+00	2.14E-06	9.72E-07	9.69E-09	2.56E-02	4.22E-09	9.85E-08	2.87E-05	5.51E-12	6.02E-11	4.55E-10	2.61E-14	8.18E-11	1.31E-11	-1.21E+01	0.00E+00	0.00E+00	0.00E+00
react	123	6.23E-03	5.90E-05	1.13E-02	3.58E-07	0.00E+00	2.14E-06	2.91E-06	7.74E-08	1.94E-02	4.21E-09	9.84E-08	1.18E-05	7.43E-12	5.97E-11	3.83E-10	1.41E-14	8.28E-11	1.00E-11	-1.20E+01	0.00E+00	0.00E+00	0.00E+00
react	124	7.10E-03	5.65E-05	1.21E-02	3.58E-07	0.00E+00	2.14E-06	4.54E-06	3.88E-08	2.62E-02	4.22E-09	9.85E-08	1.32E-05	5.02E-12	5.25E-11	4.25E-10	2.17E-14	7.12E-11	1.16E-11	-1.22E+01	0.00E+00	0.00E+00	0.00E+00
react	125	6.03E-03	5.48E-05	1.05E-02	3.58E-07	0.00E+00	1.86E-06	2.92E-06	4.36E-08	2.27E-02	2.11E-09	9.85E-08	1.41E-05	2.88E-12	4.43E-11	4.01E-10	3.52E-14	4.37E-11	6.32E-12	-1.24E+01	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	CoFe2O4	d_CoFe2O4	Magnesioferrite	d_Magnesioferrite	Hercynite	d_Hercynite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	H-Jarosite	d_H-Jarosite	Na-Jarosite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	1.41E-04	1.41E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	2.15E-04	7.36E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	-2.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	1.24E-04	1.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	1.10E-04	-1.35E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	1.48E-04	3.76E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	-1.48E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	4.24E-05	4.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	2.62E-04	2.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	-2.62E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	4.13E-05	4.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	8.33E-05	4.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	5.42E-05	-2.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.77E-05	8.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	8.50E-05	3.08E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	1.86E-04	1.01E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	1.84E-04	-2.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	1.83E-04	-1.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	1.78E-04	-4.49E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	2.83E-04	1.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	2.90E-04	7.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	2.87E-04	-2.66E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	4.15E-04	1.28E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	4.56E-04	4.09E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	5.18E-04	6.16E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	5.67E-04	4.89E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	5.97E-04	3.04E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	6.53E-04	5.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	6.85E-04	3.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	6.96E-04	1.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	7.69E-04	7.23E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	8.03E-04	3.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	8.62E-04	5.90E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	8.29E-04	-3.26E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	8.75E-04	4.59E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	9.31E-04	5.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	MnHPO4	d_MnHPO4	Barite	d_Barite	Celestite	d_Celestite	Anglesite	d_Anglesite	Halite	d_Halite	Fluorite	d_Fluorite	Hydroxylapatite	d_Hydroxylapatite	FCO3Apatite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-07	1.20E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E-07	8.58E-07	4.02E-07	2.82E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.83E-07	1.25E-07	5.67E-07	1.65E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.83E-07	7.04E-07	1.36E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.32E-07	2.28E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.93E-07	-3.92E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-06	2.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06	9.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-06	1.88E-06	1.37E-06	1.52E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.67E-05	2.48E-05	1.52E-06	1.49E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.72E-06	-1.70E-05	1.60E-06	8.27E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.72E-06	1.77E-06	1.62E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.95E-06	1.83E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.02E-06	6.93E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.10E-06	7.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-06	7.55E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-06	1.13E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-06	6.76E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.84E-06	4.87E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-06	4.61E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.29E-06	4.06E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.34E-06	4.56E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-06	6.38E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.54E-06	1.39E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_FCO3Apatite	Ba3(AsO4)2	d_Ba3(AsO4)2	Cu2Se(alpha)	d_Cu2Se(alpha)	CuSe	d_CuSe	Fe(VO3)2	d_Fe(VO3)2	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4399	-6.6131	-12.9831	-13.5213	-7.7816	-30.4024	-10.4968
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.4338	-0.6034	-0.9407	-1.4727	-1.7911	-6.2829	-4.4672
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.3586	-1.5317	-2.8262	-3.3643	-2.7066	-10.0943	-5.4214
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.5477	-5.723	-11.2014	-11.7434	-6.8639	-26.8447	-9.6035
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5932	-1.7778	-3.2782	-3.8362	-2.7759	-10.9964	-5.618
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.7201	-6.8958	-13.5385	-14.081	-8.024	-31.5115	-10.7675
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.402	-4.5721	-8.8851	-9.418	-5.7605	-22.1803	-8.4425
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5531	-7.7238	-15.1763	-15.7101	-8.8935	-34.7522	-11.5814
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.7615	-2.936	-5.6011	-6.1416	-4.0607	-15.615	-6.7909
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.2578	-1.4302	-2.5879	-3.1248	-2.5774	-9.5801	-5.2851
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1094	-8.2826	-16.2977	-16.8359	-9.4264	-37.0074	-12.1421
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1142	-8.2911	-16.3659	-16.9105	-9.4421	-37.2072	-12.1986
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.2602	-7.4365	-14.6576	-15.2012	-8.5953	-33.7895	-11.3454
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.7592	-7.9349	-15.6186	-16.1613	-9.0642	-35.6739	-11.8085
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3692	-8.5421	-16.831	-17.3687	-9.7035	-38.0872	-12.416
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.9259	-8.0973	-15.8804	-16.4157	-9.2149	-36.1203	-11.9114
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3602	-8.5283	-16.743	-17.2724	-9.6866	-37.8349	-12.3458
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.5546	-8.7249	-17.138	-17.6712	-9.859	-38.6338	-12.5424
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.146	-6.3155	-12.3652	-12.8971	-7.5042	-29.1318	-10.1795
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3271	-8.4956	-16.6881	-17.2183	-9.6583	-37.737	-12.323
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5945	-7.7677	-15.262	-15.8002	-8.9053	-34.9301	-11.6212
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.1642	-9.3406	-18.4116	-18.9553	-10.4446	-41.2434	-13.1953
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.9027	-8.0782	-15.8934	-16.4356	-9.1993	-36.2108	-11.9402
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.873	-6.043	-11.8043	-12.3371	-7.2096	-27.9957	-9.8905
i_soln	200	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.407	-6.5802	-12.8924	-13.4306	-7.7231	-30.196	-10.439
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E-05	1.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.0564	-7.2296	-14.1911	-14.7294	-8.3726	-32.7937	-11.0884
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-05	2.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2204	-8.3935	-16.5441	-17.0822	-9.5621	-37.5244	-12.2774
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.1487	-1.3182	-2.371	-2.903	-2.5065	-9.1439	-5.1826
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.0781	-3.2512	-6.2654	-6.8035	-4.4263	-16.9729	-7.1411
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.33E-04	4.33E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.2635	-6.4388	-12.633	-13.175	-7.5797	-29.708	-10.3193
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.05E-04	-2.28E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.3479	-4.5325	-8.7877	-9.3456	-5.5307	-22.0154	-8.3728
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-04	2.98E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.5737	-5.7494	-11.2455	-11.7881	-6.8775	-26.9255	-9.621
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.64E-04	-7.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.2506	-6.4207	-12.5822	-13.1151	-7.609	-29.5744	-10.291
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.62E-04	2.98E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.4253	-8.596	-16.9208	-17.4546	-9.7657	-38.2412	-12.4536
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-04	-7.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.3956	-5.57	-10.8692	-11.4097	-6.6948	-26.1512	-9.425
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.43E-05	-3.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.6523	-4.8248	-9.3771	-9.9141	-5.9721	-23.1588	-8.6798
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.70E-04	5.26E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3282	-8.5014	-16.7354	-17.2736	-9.6453	-37.8828	-12.3609
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-04	2.80E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.694	-8.8709	-17.5256	-18.0701	-10.0219	-39.5265	-12.7785
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.76E-04	2.81E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6335	-8.8098	-17.4043	-17.9479	-9.9686	-39.2829	-12.7188
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-04	1.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6631	-8.8388	-17.4265	-17.9692	-9.9682	-39.2898	-12.7125
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.90E-04	2.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7389	-8.9117	-17.5704	-18.1081	-10.0732	-39.566	-12.7857
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.93E-04	2.84E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7728	-8.9442	-17.5744	-18.1096	-10.0619	-39.5082	-12.7584
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.96E-04	2.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7448	-8.9129	-17.5123	-18.0417	-10.0713	-39.3735	-12.7305
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.98E-04	2.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6824	-8.8526	-17.3935	-17.9267	-9.9868	-39.1449	-12.6702
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.01E-04	2.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.8423	-8.0118	-15.758	-16.2899	-9.2007	-35.9175	-11.876
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.03E-04	2.29E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7346	-8.9031	-17.5031	-18.0334	-10.0659	-39.3671	-12.7305
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.06E-04	2.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6718	-8.845	-17.4168	-17.955	-9.9828	-39.2397	-12.6986
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.08E-04	2.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.9104	-9.0867	-17.9039	-18.4475	-10.1907	-40.228	-12.9414
react	124	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.11E-04	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6432	-8.8187	-17.3745	-17.9167	-9.9399	-39.1731	-12.6808
react	125	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.14E-04	2.87E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5632	-7.7332	-15.1847	-15.7175	-8.8998	-34.7566	-11.5807

state	soln	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_CoFe2O4	si_Magnesioferrite	si_Hercynite	si_Cupricferrite	si_Cuprousferrite	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)
i_soln	1	-17.8544	-44.942	0.9871	-3.6374	4.388	0.0031	5.2669	-8.0012	-11.9118	-1.6913	6.3617	-6.8844	0.7458	-0.0492	7.0803	-6.8039	-5.0633	-2.6301	6.288	0.2876	0.661	-1.8417
i_soln	2	-7.9323	-16.908	6.5918	7.4644	15.6044	5.554	20.177	-4.3782	2.8128	3.9247	21.3699	8.2725	5.0651	13.8951	13.4172	2.4091	6.0301	8.2675	1.2293	-3.3259	-2.3266	-1.5344
i_soln	3	-9.1893	-21.0502	6.431	7.2491	15.276	5.4464	19.8086	-4.3484	2.6275	3.7527	20.815	7.594	7.5891	14.0635	13.9576	2.3978	5.9551	8.3351	5.7045	-1.6843	3.4693	-0.247
i_soln	4	-16.8706	-41.2919	1.1231	-3.2987	4.6558	0.1724	5.6339	-7.8584	-11.4304	-1.5624	6.6968	-6.5556	1.1789	0.1175	7.1306	-6.6009	-4.7564	-2.3135	6.7471	0.4299	1.497	-1.6714
i_soln	5	-9.8647	-22.3885	5.5392	5.8139	13.4699	4.7287	17.319	-4.8033	0.7373	2.8241	18.6481	5.1541	5.2885	11.5524	12.843	0.116	3.7983	6.1765	4.0567	-1.8885	1.8503	-1.0378
i_soln	6	-18.4309	-46.3464	-2.5026	-10.5397	-2.5963	-3.448	-5.0419	-11.2752	-22.0881	-5.1892	-0.9527	-14.2087	-12.141	-10.5687	0.2811	-16.6989	-15.0141	-12.6366	-7.5352	-4.1163	-17.8628	-6.6189
i_soln	7	-14.44	-35.3447	2.9487	0.1941	8.3172	1.9188	10.5198	-6.7378	-6.817	0.2799	11.522	-1.5543	0.7316	4.9063	9.3582	-3.311	-0.9656	1.4136	2.3713	-1.6845	-3.5843	-2.5154
i_soln	8	-20.005	-50.3302	-0.6265	-6.9397	1.1656	-1.6481	0.9862	-9.1088	-16.3218	-3.2971	1.9992	-11.1393	-3.0365	-4.3573	4.8772	-9.2823	-8.1354	-5.7104	3.9063	0.019	-3.9116	-3.2076
i_soln	9	-11.9576	-27.9357	4.3622	3.1535	11.1357	3.3985	14.3078	-5.6815	-2.8012	1.6795	15.2575	2.0363	7.0249	8.4836	11.1904	-1.0082	1.899	4.2622	9.0641	0.1632	6.6331	0.1533
i_soln	10	-9.3258	-20.7735	6.0272	6.4218	14.4695	5.0327	18.7444	-4.619	1.5297	3.3509	19.7189	6.5233	7.528	12.8574	13.285	1.7662	5.1592	7.5387	6.4003	-1.3187	4.0733	-0.1496
i_soln	11	-21.1584	-53.1816	-1.5518	-8.7145	-0.6899	-2.5355	-1.4997	-9.6895	-18.6774	-4.2304	-0.4295	-13.6213	-5.3424	-6.8789	3.6403	-11.0291	-10.1051	-7.6529	2.2833	-0.2154	-6.4394	-4.0414
i_soln	12	-21.3161	-53.5327	-1.5831	-8.6648	-0.7597	-2.5106	-1.5988	-9.6451	-18.5831	-4.2735	-0.4932	-13.8422	-5.5617	-6.9326	3.7153	-11.1599	-10.1358	-7.7148	2.1142	-0.1977	-6.3807	-4.1307
i_soln	13	-19.5989	-49.2521	-0.3469	-6.2101	1.7138	-1.2832	1.6874	-8.8439	-15.3272	-3.0355	2.8251	-10.4969	-2.1673	-3.602	5.3713	-9.1326	-7.7193	-5.2709	4.7089	0.232	-2.1297	-2.8407
i_soln	14	-20.5213	-51.5601	-1.0614	-7.6552	0.2859	-2.0058	-0.1981	-9.3122	-17.2407	-3.7483	0.8856	-12.3768	-4.1277	-5.6717	4.2592	-10.308	-9.1502	-6.6773	3.1797	-0.0543	-4.7172	-3.593
i_soln	15	-21.7036	-54.5468	-1.9435	-9.5063	-1.4727	-2.9313	-2.5459	-9.9583	-19.7379	-4.6212	1.5078	-14.6716	-6.4315	-7.8964	3.1357	-11.6653	-10.8957	-8.491	1.3753	-0.3687	-7.8554	-4.4547
i_soln	16	-20.6756	-51.9958	-1.2038	-8.0707	0.0095	-2.2136	-0.5725	-9.496	-17.8399	-3.8768	3.5302	-12.6466	-4.3461	-7.9219	2.0845	-10.3925	-9.4063	-6.9904	3.0154	-0.096	-5.3185	-3.6598
i_soln	17	-21.505	-54.1069	-1.8069	-9.3792	-1.1901	-2.8678	-2.1753	-9.9663	-19.6188	-4.4691	1.896	-14.1957	-6.1591	-8.2292	2.4933	-11.2046	-10.4365	-8.1571	1.4666	-0.4219	-8.0562	-4.37
i_soln	18	-21.9249	-55.1304	-2.2667	-10.2325	-2.1139	-3.2945	-3.4258	-10.2496	-20.7554	-4.9359	0.7228	-15.3722	-7.4014	-8.2203	3.1513	-12.1945	-11.5894	-9.1754	0.5039	-0.6075	-9.4229	-4.8243
i_soln	19	-17.9612	-44.0736	0.4949	-4.7315	3.4106	-0.544	4.0359	-8.3269	-13.3317	-2.172	7.9347	-8.237	-0.3169	-2.6099	5.1569	-7.1104	-5.6858	-3.2916	5.8076	0.3399	-0.8185	-2.2518
i_soln	20	-21.4655	-54.0023	-1.7571	-9.2644	-1.0914	-2.8104	-2.0238	-9.9036	-19.4412	-4.4209	1.9796	-14.087	-6.0443	-6.2934	4.3951	-11.1074	-10.4337	-8.033	1.5456	-0.3994	-7.8966	-4.3382
i_soln	21	-20.1151	-50.5758	-0.7523	-7.1147	0.9092	-1.7356	0.639	-9.1494	-16.5373	-3.4309	4.6732	-11.5002	-3.277	-4.0896	5.3707	-9.6301	-8.5	-6.0589	3.7678	0.0484	-3.8847	-3.2785
i_soln	22	-23.3042	-58.5073	-3.1587	-11.8323	-3.9099	-4.0943	-5.7878	-10.6945	-22.8	-5.8474	-1.6659	-17.9767	-9.5115	-11.6081	1.1385	-14.0209	-13.6435	-11.1803	-1.003	-0.7391	-11.3358	-5.587
i_soln	23	-20.7818	-52.2141	-1.3504	-8.2424	-0.2915	-2.2994	-0.9864	-9.529	-18.0446	-4.0363	3.13	-13.079	-4.8183	-7.0795	3.2108	-10.8084	-9.8081	-7.3533	2.6442	-0.1215	-5.5305	-3.8333
i_soln	24	-17.5126	-42.7617	0.5283	-4.6489	3.4764	-0.5026	4.0581	-8.36	-13.2819	-2.1402	8.0462	-8.0188	-0.0475	-1.9807	5.6895	-7.4598	-6.054	-3.6437	5.8366	0.2902	-0.3525	-2.0944
i_soln	200	-19.3946	-46.3087	-1.465	-8.5402	-0.5163	-2.4483	-1.2791	-9.6421	-18.4555	-4.1436	-0.1818	-13.3873	-5.1934	-7.1596	3.2334	-10.8489	-9.9094	-7.4976	2.3316	-0.2038	-6.2725	-3.9903
react	101	-20.6947	-49.5571	-1.5012	-8.6125	-0.5886	-2.4844	-2.0163	-10.3069	-19.1926	-4.1798	-0.9047	-14.1103	-8.0495	-7.863	1.9375	-9.6573	-9.0434	-6.6508	0	-0.6494	-10.005	-5.086
react	102	-21.4289	-53.8581	-1.5241	-8.6599	-0.6345	-2.5081	-1.5517	-9.7974	-18.7304	-4.2026	-0.4546	-13.7008	-7.0225	-6.8493	3.5065	-10.7512	-9.9078	-7.4936	0	-0.9052	-9.49	-4.8277
react	103	-9.6793	-20.8011	-2.4082	-10.5355	-2.3955	-3.446	0	-6.5553	-17.3641	-5.0753	2.3452	-10.7591	1.0202	-14.4167	0.9282	-22.5189	-19.4138	-17.1599	0	-3.2239	-5.0264	-2.4684
react	104	-13.0657	-30.0857	-2.3331	-10.2792	-2.2523	-3.3178	0	-6.6288	-17.1812	-5.0114	1.1324	-12.0911	-0.6422	-11.0701	4.072	-19.5795	-17.1008	-14.7356	0	-2.5022	-6.2749	-3.2224
react	105	-18.3119	-44.8808	-1.4186	-8.3822	-0.4276	-2.3693	-0.045	-8.4539	-17.1094	-4.1041	0.8882	-12.3645	-4.6096	-6.494	5.007	-12.7749	-11.2931	-8.8963	0	-1.441	-8.1632	-4.2678
react	106	-15.759	-36.547	-1.4729	-8.2103	-0.5543	-2.2834	0	-8.0981	-16.5817	-4.188	1.4866	-12.0096	-3.8525	-7.0339	4.9861	-14.6389	-12.5265	-10.1472	0	-1.6709	-6.7013	-3.9608
react	107	-16.1079	-40.5839	-1.2138	-7.9621	-0.0188	-2.1593	0	-8.8108	-17.0462	-3.9004	2.8012	-10.4547	-3.4774	-7.837	2.8998	-15.185	-12.912	-10.5339	0	-2.1929	-6.6406	-3.5193
react	108	-18.1925	-44.6428	-1.3438	-8.3908	-0.2677	-2.3736	0	-8.6726	-17.3368	-4.0126	1.033	-12.0432	-4.6892	-6.2296	4.8724	-12.3806	-10.9873	-8.6061	0	-1.5236	-8.6524	-4.2584
react	109	-21.7522	-54.6942	-1.4844	-8.6555	-0.5501	-2.5059	-1.5101	-9.8894	-18.8182	-4.1549	-0.5914	-13.7301	-7.2653	-6.9276	3.2421	-10.1068	-9.3976	-7.018	0	-0.8305	-9.9335	-4.9316
react	110	-17.3781	-41.2584	-1.3843	-8.3396	-0.3573	-2.348	0	-8.4962	-17.109	-4.0671	0.9786	-12.2432	-4.6166	-6.4957	4.8894	-12.675	-11.161	-8.8013	0	-1.4637	-8.234	-4.2601
react	111	-16.52	-38.1518	-1.3296	-8.2917	-0.244	-2.324	0	-8.6498	-17.2147	-4.0058	1.2108	-11.9897	-4.5736	-6.2011	4.9091	-12.6993	-11.2064	-8.8257	0	-1.5517	-8.2658	-4.185
react	112	-21.5966	-54.2763	-1.6101	-8.8311	-0.8065	-2.5938	-1.6709	-9.7441	-18.8485	-4.2887	-0.7652	-13.9572	-7.103	-7.1934	3.3878	-10.7651	-9.9508	-7.5521	0	-0.849	-9.6319	-4.8944
react	113	-22.4769	-56.4331	-1.5695	-8.6376	-0.7325	-2.497	-2.1548	-10.2283	-19.1391	-4.2599	-1.0469	-14.3959	-8.1223	-7.465	2.5725	-9.9585	-9.225	-6.8222	0	-0.606	-9.7551	-5.1193
react	114	-22.3504	-56.1237	-1.5721	-8.6604	-0.7365	-2.5084	-2.1432	-10.2242	-19.1579	-4.2606	-1.0032	-14.3254	-8.0457	-7.4064	2.637	-10.0537	-9.3297	-6.9083	0	-0.6399	-9.7486	-5.0898
react	115	-22.3315	-56.0823	-1.7104	-8.9532	-1.0121	-2.6548	-2.4106	-10.2267	-19.4533	-4.3973	-1.3184	-14.581	-8.0541	-7.7929	2.5214	-10.4443	-9.7398	-7.2861	0	-0.6549	-9.8356	-5.0989
react	116	-22.4436	-56.3959	-1.6351	-8.8894	-0.8558	-2.6229	-2.3013	-10.3307	-19.4933	-4.3127	1.7545	-14.425	-8.0809	-7.5925	2.4503	-10.0004	-9.416	-7.0255	0	-0.6374	-10.0397	-5.0932
react	117	-22.3714	-56.2326	-1.5878	-8.8388	-0.7585	-2.5976	-2.1916	-10.347	-19.459	-4.2608	1.9134	-14.2634	-8.0383	-9.4928	0.4307	-9.8489	-9.2874	-6.8961	0	-0.6688	-10.1531	-5.0804
react	118	-22.275	-56.0308	-1.434	-8.6334	-0.4443	-2.4949	-1.8171	-10.3539	-19.2606	-4.0962	2.2565	-13.8352	-7.8983	-7.8483	1.7408	-9.3164	-8.7411	-6.4777	0	-0.713	-10.3745	-5.0457
react	119	-22.1806	-55.7695	-1.5845	-8.8681	-0.7494	-2.6122	-2.1918	-10.38	-19.5213	-4.2537	1.9593	-14.1357	-7.992	-6.9288	2.948	-9.8923	-9.3512	-6.9424	0	-0.7099	-10.2155	-5.0544
react	120	-21.3617	-52.5635	-1.4329	-8.5872	-0.445	-2.4718	-1.525	-10.0321	-18.8925	-4.0998	2.3752	-13.7967	-7.5737	-8.1532	1.7641	-9.4882	-8.9159	-6.5551	0	-0.733	-10.219	-5.0276
react	121	-22.2812	-56.0407	-1.4726	-8.6954	-0.5224	-2.5259	-1.8647	-10.3134	-19.282	-4.1364	2.1405	-13.9262	-7.881	-6.1076	3.602	-9.4386	-8.9692	-6.5848	0	-0.7052	-10.3427	-5.0516
react	122	-22.2728	-55.9658	-1.5869	-8.784	-0.7601	-2.5702	-2.1123	-10.2314	-19.2886	-4.2655	1.9238	-14.2497	-7.9312	-6.8021	3.2454	-9.9753	-9.3856	-6.9723	0	-0.6583	-9.9497	-5.0646
react	123	-22.7962	-57.2377	-1.8201	-9.1549	-1.2325	-2.7556	-2.8583	-10.4424	-19.8706	-4.5087	1.2655	-15.0452	-8.3482	-8.484	1.8373	-10.5118	-10.0072	-7.5281	0	-0.537	-9.7668	-5.1314
react	124	-22.2646	-55.9186	-1.643	-8.8276	-0.8767	-2.592	-2.316	-10.2734	-19.3743	-4.3289	1.8027	-14.4064	-8.0519	-8.3602	1.7709	-10.2033	-9.5742	-7.1416	0	-0.6247	-9.7674	-5.0779
react	125	-20.902	-51.2218	-1.4912	-8.6878	-0.5625	-2.5221	-1.6822	-10.0614	-19.0222	-4.1597	2.3083	-13.7569	-7.3159	-7.6907	2.3169	-10.1218	-9.5659	-7.1882	0	-0.7952	-9.7883	-4.8779

state	soln	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite
i_soln	1	0.6405	0.3922	2.0721	-18.7218	-11.9187	-28.8126	-10.3762	-22.6287	-6.7202	-0.0815	-0.3167	-2.8587	-5.1843	-3.9763	-28.2334	-6.3732	-6.2817	-14.5645	-9.5306	-11.2673	-6.2533	-6.1245
i_soln	2	0.9339	0.7055	2.3723	-10.823	-6.1515	-13.0271	-6.4129	-10.7923	-0.6404	-0.1067	-0.3344	-2.8843	-5.176	-4.1941	-28.3832	-7.1577	-7.073	-14.551	-9.4181	-13.1563	-7.4253	-0.2863
i_soln	3	2.235	1.987	3.6667	-11.5259	-6.5159	-14.3894	-6.7623	-11.8192	-1.6209	-0.0522	-0.2872	-2.8357	-5.1156	-3.8892	-28.04	-6.6573	-6.5659	-14.564	-9.4824	-11.3879	-6.595	-0.985
i_soln	4	0.8194	0.5589	2.2468	-18.6461	-11.7436	-28.5685	-10.3044	-22.4653	-5.8328	-0.0369	-0.2765	-2.7984	-5.1095	-3.9116	-28.2948	-6.4752	-6.3796	-14.6134	-9.5302	-11.2385	-6.3957	-5.2271
i_soln	5	1.4892	1.177	2.8988	-12.8507	-6.9186	-16.668	-7.3039	-13.6025	-1.8131	-0.0695	-0.328	-2.738	-4.8267	-4.018	-29.3692	-6.7742	-6.6611	-14.7995	-9.6642	-13.9317	-6.7819	-1.41
i_soln	6	-4.1268	-4.3893	-2.7001	-22.4694	-15.3433	-39.2041	-13.7125	-29.6942	-10.0065	-0.0429	-0.2831	-2.7935	-5.0441	-6.9348	-34.3815	-9.4225	-9.3262	-14.6234	-12.5438	-14.197	-9.4305	-9.4192
i_soln	7	-0.045	-0.2764	1.3924	-16.0076	-10.0304	-23.4488	-9.0344	-18.5945	-4.7017	-0.0137	-0.2425	-2.7948	-5.1299	-3.9431	-27.8618	-6.5193	-6.4335	-14.5104	-9.4276	-13.4291	-6.5077	-4.1002
i_soln	8	-0.735	-0.9695	0.7013	-20.8325	-13.628	-33.1096	-11.4554	-25.8365	-7.8324	-0.0602	-0.2903	-2.8254	-5.1568	-3.9307	-27.8874	-6.3586	-6.2718	-14.5079	-9.4637	-11.226	-6.2271	-7.1962
i_soln	9	2.6407	2.385	4.0698	-14.3478	-8.5436	-19.9184	-8.1236	-15.9925	-2.9448	-0.0478	-0.2856	-2.7885	-5.0347	-3.8065	-27.9933	-6.6419	-6.5479	-14.5895	-9.4239	-12.6931	-6.5958	-2.3192
i_soln	10	2.3299	2.0854	3.7628	-12.0245	-6.9083	-15.3489	-6.9891	-12.5493	-1.4422	-0.0875	-0.3212	-2.8397	-5.1454	-3.8769	-27.97	-6.7799	-6.6897	-14.5595	-9.4283	-12.9379	-6.7225	-0.8322
i_soln	11	-1.5591	-1.8075	-0.1276	-22.1193	-14.4646	-35.6028	-12.0727	-27.7225	-8.403	-0.0682	-0.3033	-2.8211	-5.1227	-3.9687	-28.2238	-6.386	-6.2945	-14.5821	-9.5309	-11.5198	-6.3088	-7.7997
i_soln	12	-1.6339	-1.903	-0.2095	-22.3024	-14.4156	-35.8659	-12.1335	-27.9397	-8.3978	-0.0384	-0.2812	-2.8182	-4.9913	-3.901	-28.386	-6.3385	-6.2399	-14.6177	-9.5578	-11.1844	-6.2076	-7.7922
i_soln	13	-0.3462	-0.6121	1.0793	-20.5863	-13.1591	-32.4552	-11.2829	-25.3772	-7.5612	-0.0296	-0.2712	-2.814	-5.0454	-3.947	-28.4285	-6.3524	-6.2549	-14.6097	-9.5561	-11.2485	-6.2073	-6.989
i_soln	14	-1.1006	-1.3634	0.326	-21.579	-13.9281	-34.446	-11.779	-26.8698	-8.0642	-0.0549	-0.2953	-2.8071	-5.0657	-3.9374	-28.3989	-6.4211	-6.3247	-14.634	-9.5756	-11.6235	-6.3802	-7.4492
i_soln	15	-1.9735	-2.2204	-0.5414	-22.6633	-14.8974	-36.7421	-12.3688	-28.5646	-8.7035	-0.0631	-0.2976	-2.8319	-5.1579	-3.9712	-28.1958	-6.3103	-6.2193	-11.5908	-9.5615	-11.1619	-6.2817	-8.0653
i_soln	16	-1.1842	-1.423	0.2506	-21.6009	-14.1734	-34.6577	-11.8496	-26.9935	-8.2115	-0.1123	-0.344	-2.8295	-5.1779	-3.9982	-28.1188	-6.3664	-6.2781	-11.5149	-9.5361	-11.4583	-8.3031	-7.5899
i_soln	17	-1.9076	-2.1276	-0.4663	-22.3013	-14.8835	-36.2126	-12.2578	-28.1266	-8.6788	-0.0976	-0.3223	-2.8374	-5.0693	-4.0079	-27.789	-6.3783	-6.2965	-11.4297	-9.4935	-11.4657	-7.0064	-8.0254
i_soln	18	-2.3534	-2.5856	-0.9163	-22.8362	-15.1497	-37.1212	-12.457	-28.8448	-8.8385	-0.0665	-0.2956	-2.7939	-5.2306	-4.072	-28.1504	-6.3563	-6.2703	-11.498	-9.467	-11.2251	-5.818	-8.33
i_soln	19	0.2163	-0.0118	1.6548	-19.5152	-12.6984	-30.5105	-10.808	-23.8801	-6.4318	-0.0393	-0.267	-2.8174	-5.1818	-3.7578	-27.4196	-6.3103	-6.2256	-11.4065	-9.4287	-11.303	-7.3528	-5.6293
i_soln	20	-1.8738	-2.0966	-0.4335	-22.2764	-14.8246	-36.0886	-12.2111	-28.0514	-8.6232	-0.0834	-0.3092	-2.8302	-5.2909	-3.9656	-27.7739	-6.3961	-6.3133	-11.4741	-9.4659	-11.0554	-5.1815	-7.9677
i_soln	21	-0.7961	-1.0446	0.6354	-21.0767	-13.6804	-33.5126	-11.549	-26.1561	-7.8808	-0.0509	-0.2861	-2.7976	-5.2101	-3.928	-28.1247	-6.3805	-6.2889	-11.5784	-9.5068	-11.1199	-5.6176	-7.2617
i_soln	22	-3.0923	-3.3584	-1.6669	-24.3863	-15.9959	-40.0104	-13.1609	-31.0547	-9.4333	-0.1645	-0.4061	-2.8944	-5.3445	-4.0236	-28.732	-6.4556	-6.3581	-11.7038	-9.6598	-11.6346	-6.8149	-8.835
i_soln	23	-1.3421	-1.6033	0.0851	-21.9175	-14.2072	-35.1714	-11.9707	-27.4023	-8.2607	-0.02	-0.2598	-2.7623	-5.1929	-3.9742	-28.4235	-6.378	-6.2821	-11.6269	-9.5883	-11.5036	-7.0355	-7.6625
i_soln	24	0.3757	0.1446	1.8131	-19.25	-12.4775	-29.9832	-10.6799	-23.4831	-6.1713	-0.1066	-0.3355	-2.865	-5.4508	-4.0095	-28.0336	-6.459	-6.3733	-11.5888	-9.518	-11.3742	-6.9992	-5.5446
i_soln	200	-1.5079	-1.7565	-0.0765	-21.9934	-14.3772	-35.3829	-12.0258	-27.5496	-6.7136	-0.0477	-0.283	-2.7996	-5.1316	-3.9611	-28.1711	-6.3538	-6.2622	-14.5484	-9.5239	-11.5992	-6.8026	-6.1105
react	101	-2.6036	-2.8521	-1.1721	-21.3867	-14.3991	-36.0774	-12.6764	-27.5935	-7.3629	-0.0484	-0.2836	-2.8003	-5.1327	-3.9759	-26.2933	-6.3544	-6.2628	-14.5489	-9.5245	-11.5996	-6.7835	-6.774
react	102	-2.3455	-2.5939	-0.914	-21.9458	-14.4276	-35.6244	-12.17	-27.6466	-8.5007	-0.0822	-0.3173	-2.8594	-5.1855	-3.9792	-27.8762	-6.3739	-6.2824	-14.5651	-9.5313	-11.2678	-6.2377	-7.9073
react	103	0	-0.2285	1.4384	-25.5036	-14.0092	-29.7772	-7.4476	-26.5076	-1.3589	-0.1019	-0.3297	-2.88	-5.1718	-5.3352	-43.2754	-7.1415	-7.0568	-14.5399	-9.417	-14.7295	-16.7013	-2.1471
react	104	-0.7404	-0.9885	0.6912	-26.6502	-15.1564	-33.8271	-8.919	-29.1002	-3.3405	-0.0512	-0.2862	-2.8348	-5.1151	-4.012	-39.0956	-6.6527	-6.5613	-14.5607	-9.4816	-11.4231	-12.0427	-2.8283
react	105	-1.777	-2.0376	-0.3497	-23.2573	-14.4086	-34.6172	-11.0231	-27.7952	-6.5418	-0.0368	-0.2764	-2.7983	-5.1094	-3.7815	-31.2015	-6.475	-6.3794	-14.6131	-9.5234	-11.2383	-7.1982	-5.8129
react	106	-1.4339	-1.7461	-0.0243	-23.4242	-13.7748	-33.5193	-10.4428	-27.3149	-4.5673	-0.0682	-0.3268	-2.7367	-4.8257	-4.1721	-33.9713	-6.7692	-6.6561	-14.7962	-9.6624	-13.9295	-8.2034	-4.3201
react	107	-1.0272	-1.2896	0.3995	-23.6443	-15.3425	-38.0261	-12.536	-29.6926	-8.8601	-0.0427	-0.283	-2.7933	-5.0439	-5.6466	-35.3326	-9.4223	-9.326	-14.6232	-12.5436	-14.1968	-10.4525	-6.9847
react	108	-1.788	-2.0194	-0.3506	-22.6269	-14.2921	-33.8763	-10.9385	-27.1179	-6.5503	-0.0139	-0.2427	-2.7949	-5.1302	-3.9741	-30.735	-6.5194	-6.4337	-14.5105	-9.4278	-13.4292	-7.1547	-5.9795
react	109	-2.4591	-2.6936	-1.0228	-21.8619	-14.5801	-35.8887	-12.3302	-27.7408	-8.7045	-0.0607	-0.2907	-2.8258	-5.1575	-3.8367	-26.9795	-6.359	-6.2722	-14.5082	-9.464	-11.2263	-6.2071	-7.9741
react	110	-1.7726	-2.0284	-0.3436	-23.0082	-14.2722	-34.1722	-10.9203	-27.4496	-5.5892	-0.0477	-0.2855	-2.7886	-5.0349	-3.8348	-31.1271	-6.6411	-6.5471	-14.589	-9.4342	-12.6928	-7.2956	-4.9815
react	111	-1.7055	-1.95	-0.2726	-22.6529	-14.2109	-33.9306	-10.9657	-27.1544	-5.0142	-0.0844	-0.3181	-2.8368	-5.1431	-4.1054	-31.2765	-6.7688	-6.6786	-14.5517	-9.6026	-12.9334	-7.2652	-4.4583
react	112	-2.4121	-2.6605	-0.9806	-22.24	-14.5816	-35.9499	-12.1859	-27.9564	-8.5157	-0.0681	-0.3032	-2.821	-5.1225	-3.8039	-27.6821	-6.3857	-6.2942	-14.5818	-9.4247	-11.5197	-6.2873	-7.8538
react	113	-2.6226	-2.8917	-1.1982	-21.6249	-14.335	-36.2211	-12.6499	-27.7785	-8.913	-0.039	-0.2818	-2.8188	-4.9923	-3.904	-26.6179	-6.3391	-6.2405	-14.6183	-9.4939	-11.1848	-6.1869	-8.3743
react	114	-2.5953	-2.8611	-1.1697	-21.6541	-14.382	-36.2791	-12.661	-27.8231	-8.9345	-0.0305	-0.2721	-2.815	-5.0469	-3.9501	-26.7473	-6.3533	-6.2558	-14.6106	-9.5569	-11.2492	-6.1841	-8.3645
react	115	-2.6065	-2.8694	-1.1799	-21.954	-14.5687	-36.6331	-12.6851	-28.1509	-8.9681	-0.0556	-0.296	-2.8079	-5.067	-3.9466	-26.9808	-6.4219	-6.3255	-14.6347	-9.5764	-11.6241	-6.2981	-8.3616
react	116	-2.612	-2.8589	-1.1799	-21.6719	-14.5868	-36.4912	-12.739	-27.9434	-9.0731	-0.0635	-0.2981	-2.8324	-5.1587	-3.9738	-26.4695	-6.3108	-6.2198	-11.5913	-9.562	-11.1622	-6.225	-8.4371
react	117	-2.6048	-2.8436	-1.17	-21.5156	-14.5551	-36.2699	-12.6984	-27.757	-9.0584	-0.1132	-0.3449	-2.8305	-5.1794	-4.0014	-26.3434	-6.3673	-6.279	-11.5158	-9.537	-11.459	-8.258	-8.4391
react	118	-2.5833	-2.8033	-1.1421	-21.1656	-14.5083	-35.8473	-12.6431	-27.3761	-9.0634	-0.0981	-0.3228	-2.838	-5.0702	-4.0108	-25.889	-6.3788	-6.297	-11.4302	-9.494	-11.4661	-6.9866	-8.4124
react	119	-2.5835	-2.8157	-1.1464	-21.339	-14.465	-35.8799	-12.585	-27.4756	-8.9662	-0.0667	-0.2958	-2.7941	-5.2309	-4.0746	-26.4027	-6.3565	-6.2705	-11.4982	-9.4672	-11.2253	-5.7632	-8.4602
react	120	-2.5595	-2.7877	-1.121	-21.6643	-14.6249	-36.0674	-12.5119	-27.7332	-8.1281	-0.0404	-0.268	-2.8186	-5.1837	-3.7602	-26.1667	-6.3114	-6.2268	-11.4075	-9.4298	-11.3038	-7.3377	-7.327
react	121	-2.5872	-2.81	-1.1469	-21.2958	-14.5384	-35.9244	-12.6193	-27.479	-9.0307	-0.0839	-0.3097	-2.8308	-5.2919	-3.9679	-25.982	-6.3967	-6.3138	-11.4746	-9.4665	-11.0558	-5.1571	-8.3769
react	122	-2.5822	-2.8307	-1.1507	-21.6621	-14.5132	-36.2585	-12.6293	-27.8217	-8.9581	-0.0518	-0.287	-2.7986	-5.2116	-3.9308	-26.5559	-6.3814	-6.2898	-11.5793	-9.5077	-11.1205	-5.5816	-8.3408
react	123	-2.6367	-2.9028	-1.2113	-21.959	-14.6552	-37.0751	-12.9068	-28.3734	-9.1795	-0.1639	-0.4055	-2.8938	-5.3437	-4.0249	-26.815	-6.455	-6.3574	-11.7033	-9.6592	-11.6341	-6.6217	-8.5831
react	124	-2.5866	-2.8478	-1.1595	-21.756	-14.4975	-36.4941	-12.7129	-27.9829	-9.0013	-0.0206	-0.2605	-2.7631	-5.194	-3.9772	-26.7843	-6.3787	-6.2828	-11.6276	-9.589	-11.5041	-6.9896	-8.4053
react	125	-2.4078	-2.6389	-0.9704	-21.5852	-14.4946	-35.7166	-12.379	-27.5174	-7.8614	-0.1076	-0.3364	-2.8661	-5.4524	-4.0127	-26.9781	-6.46	-6.3743	-11.5897	-9.519	-11.3749	-6.9722	-7.237

state	soln	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_MnHPO4	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_Hydroxylapatite	si_FCO3Apatite	si_Ba3(AsO4)2	si_Cu2Se(alpha)	si_CuSe	si_Fe(VO3)2	si_Fe(OH)2.7Cl.3
i_soln	1	-7.6968	-7.9648	-11.1215	-18.3526	-9.8557	-11.7062	-12.1409	-2.7159	-8.3245	-0.4539	0.6005	-999.999	-3.0382	-6.0716	-5.7074	-12.076	-20.0585	-5.6819	19.0975	15.8637	-8.154	2.2421
i_soln	2	-3.6219	-2.9435	-3.6769	-5.8988	-4.4954	-6.4262	-6.1633	0.6528	-1.8367	1.2328	0.8399	-999.999	-4.0288	-5.7525	-1.5653	0.3431	8.9911	2.1115	7.2017	5.1625	0.0225	7.3044
i_soln	3	-2.7663	-2.7227	-3.1883	-5.7071	-4.7995	-6.9378	-7.0893	0.4885	-1.8442	0.9199	0.7135	-999.999	-2.8479	-6.0652	-1.7923	-0.8194	6.0331	2.4084	9.4169	6.5402	0.1706	7.142
i_soln	4	-6.7789	-6.736	-10.4292	-17.0476	-8.8409	-10.9808	-11.3008	-2.6192	-8.0312	-0.3963	0.6529	-999.999	-2.6689	-5.9276	-5.0912	-11.6121	-17.4985	-5.4037	18.6402	15.5193	-7.9794	2.4359
i_soln	5	-5.3097	-3.8477	-3.8358	-7.2436	-5.6211	-7.3788	-7.3251	-0.3955	-3.4877	0.5178	0.8753	-999.999	-3.8181	-5.7728	-2.02	-2.6748	3.2303	1.0922	10.314	7.4006	-0.3931	6.5398
i_soln	6	-10.8972	-11.2708	-18.0506	-28.8849	-13.1903	-15.0978	-12.4707	-6.0167	-17.8339	-3.5722	-2.3337	-999.999	-6.0391	-5.8522	-1.5763	-12.9298	-16.3097	-21.2012	10.6035	10.5027	-18.224	-1.1121
i_soln	7	-7.946	-6.8027	-8.501	-13.8886	-8.5071	-9.8538	-10.1739	-1.129	-5.2062	0.4786	0.8309	-999.999	-3.8297	-5.9144	-2.3222	-6.668	-5.9045	-2.5665	15.2888	12.3902	-4.1818	4.0063
i_soln	8	-8.837	-8.2892	-13.4151	-21.6498	-10.5842	-12.8029	-13.2656	-3.1794	-9.2838	-0.4114	0.5181	-999.999	-2.2146	-6.1544	-7.437	-14.251	-26.1932	-8.952	21.8213	18.6328	-11.3565	0.7301
i_soln	9	-5.4527	-5.0917	-5.9804	-9.9657	-6.8114	-8.3426	-8.4961	0.3299	-2.0584	1.4847	0.6941	-999.999	-3.817	-5.9623	-3.496	-2.1648	1.2795	-1.2654	12.9734	10.0807	-1.673	5.3279
i_soln	10	-4.1924	-3.6114	-3.6051	-6.0881	-5.2747	-6.9183	-6.9609	1.9717	1.135	2.5728	0.6661	-999.999	-3.8691	-6.0333	-2.1291	3.2607	12.5031	0.6595	9.9154	7.1641	0.1368	6.7835
i_soln	11	-9.6318	-9.4402	-14.6106	-23.5809	-11.5744	-13.4018	-13.841	-3.8855	-10.6515	-0.7808	0.4758	-999.999	-2.8308	-5.8061	-7.5574	-16.3817	-29.8858	-11.5711	23.2262	20.0432	-13.2557	0.0283
i_soln	12	-9.2607	-8.7911	-14.3792	-23.4392	-11.0546	-13.4235	-13.8411	-4.0534	-10.8862	-0.9359	0.7447	-999.999	-2.1674	-6.2891	-7.4608	-16.8108	-30.3258	-10.9747	23.4169	20.1092	-13.4154	-0.1008
i_soln	13	-8.4906	-8.6732	-12.6999	-20.8899	-10.2161	-12.5868	-12.9989	-3.4843	-9.8021	-0.759	0.7827	-999.999	-2.8916	-6.2496	-7.4771	-14.5243	-26.3789	-6.7458	21.309	18.0074	-10.8813	1.0183
i_soln	14	-9.3495	-8.7819	-14.0097	-22.8236	-11.0592	-13.124	-13.507	-3.708	-10.2117	-0.7704	0.436	-999.999	-2.5235	-5.771	-7.4977	-15.5604	-28.2705	-10.2225	22.3103	19.152	-12.3526	0.513
i_soln	15	-9.5439	-8.9995	-15.0943	-24.2908	-11.5178	-13.5886	-11.1198	-4.5464	-11.9893	-1.3493	0.4581	-999.999	-2.1238	-5.9433	-6.9001	-18.4915	-32.568	-12.8816	23.8884	20.6913	-14.0281	-0.3641
i_soln	16	-9.3751	-9.0096	-18.189	-28.8532	-11.143	-13.1386	-10.5786	-3.1932	-9.3381	-0.2333	0.4522	-999.999	-2.6186	-6.0231	-6.4217	-14.4298	-25.3318	-10.5214	18.6031	17.4518	-12.4868	0.2566
i_soln	17	-9.8957	-9.5967	-16.5846	-26.2589	-11.567	-13.5683	-11.0063	-3.5899	-10.2499	-0.4738	0.5834	-999.999	-2.7382	-6.2876	-4.3934	-15.9927	-25.5807	-12.0596	22.0428	19.6947	-13.5858	-0.4307
i_soln	18	-9.8392	-8.7819	-14.6013	-23.4049	-11.8305	-13.7921	-11.2589	-4.6181	-12.2927	-1.2163	0.4164	-999.999	-1.7098	-5.9721	-4.2709	-18.6694	-29.7543	-13.8021	25.1427	21.5342	-14.5221	-0.7014
i_soln	19	-7.5494	-6.688	-13.6981	-21.6242	-9.4057	-11.3578	-8.7996	-2.5658	-7.9243	-0.2849	1.1277	-999.999	-1.9934	-6.3954	-6.2478	-12.6084	-20.9539	-5.2995	17.9355	15.9104	-9.2432	1.6721
i_soln	20	-9.4569	-8.5652	-12.8836	-20.7351	-11.4326	-13.5718	-11.0222	-4.7175	-12.4293	-1.5987	0.3245	-999.999	-1.7284	-6.2998	-6.8206	-19.3585	-33.9906	-12.8036	25.7644	21.5592	-13.5608	-0.3458
i_soln	21	-8.7337	-9.3229	-12.2307	-20.0132	-10.4334	-12.899	-10.3391	-3.8675	-10.5947	-1.0385	1.0537	-999.999	-3.2114	-6.1194	-7.5225	-16.1427	-29.2729	-7.003	23.2788	19.4247	-11.6712	0.6725
i_soln	22	-10.645	-9.9192	-17.4572	-28.0259	-12.3267	-14.4596	-11.8614	-5.0012	-12.7653	-1.3415	0.2836	-999.999	-2.3686	-5.6456	-5.7574	-20.1847	-34.0809	-17.1997	24.1694	21.3283	-16.6107	-1.3005
i_soln	23	-9.4137	-9.0444	-15.6859	-25.3209	-11.0765	-13.2567	-10.6841	-3.619	-10.0984	-0.5876	0.4259	-999.999	-2.606	-6.0502	-6.8728	-15.1476	-26.9293	-11.0146	21.3399	18.864	-12.8682	0.1812
i_soln	24	-7.2702	-6.9227	-12.4196	-19.6742	-9.2696	-11.1713	-8.6315	-2.5414	-8.0549	-0.1599	0.6259	-999.999	-2.5713	-6.2541	-6.0921	-11.8857	-19.4143	-6.25	18.3988	15.9492	-8.9961	1.7645
i_soln	200	-8.0287	-7.7294	-13.876	-21.6591	-9.5237	-11.688	-12.1248	-3.7508	-10.4141	-0.6859	-2.3017	-999.999	-2.8021	-6.3799	-6.2537	-15.937	-25.5675	-19.6474	21.963	19.3135	-13.0491	-0.0612
react	101	-8.6779	-8.3783	-15.1367	-23.5496	-10.1728	-12.3374	-12.7741	-3.4654	-11.7654	-1.0149	-2.3028	-999.999	-2.8023	-6.3808	-6.0284	-18.2253	-29.2084	-19.6106	15.9818	15.2207	-11.4043	0
react	102	-9.4771	-9.7448	-14.6633	-23.6586	-11.636	-13.4867	-13.9213	-4.3272	-11.9131	-1.3479	0	-999.999	-3.0384	-6.0716	-5.1807	-18.3456	-30.1383	-12.7956	22.144	19.2577	-12.8312	0
react	103	-5.9147	-6.8805	-23.9845	-36.202	-8.6337	-7.1296	-6.8718	-8.5451	-8.7639	0	0	-999.999	-7.2461	-5.7514	-1.5685	-5.4067	-0.2458	-15.5302	19.8573	14.4843	-26.1645	-1.5405
react	104	-4.522	-5.5248	-17.9618	-27.6488	-7.8232	-8.6537	-8.8065	-7.0389	-6.2116	0	0	-999.999	-3.9295	-6.0647	-1.83	-7.8918	-5.6677	-17.7759	26.7595	18.5204	-25.5511	-1.2985
react	105	-7.4946	-7.4513	-13.4757	-21.6125	-9.5555	-11.6966	-12.0164	-4.4982	-8.4923	-0.4524	0	-999.999	-2.6684	-5.9375	-2.9524	-13.2514	-17.748	-14.0975	27.821	22.3358	-16.358	0
react	106	-8.0635	-6.5782	-12.5754	-20.1606	-8.3768	-10.1298	-10.0777	-5.6303	-9.8174	-0.8438	0	-999.999	-3.7926	-5.7684	-2.6716	-13.04	-14.9562	-13.1153	27.831	22.0452	-17.3972	0
react	107	-9.7508	-10.1247	-17.772	-28.482	-12.0439	-13.9514	-11.3242	-5.3277	-11.6403	-2.9955	0	-999.999	-6.0393	-5.8529	-1.8161	-8.8473	-9.6405	-13.4493	19.3129	16.7066	-20.4593	0
react	108	-9.7945	-8.6506	-13.5473	-21.4303	-10.3558	-11.7023	-12.0225	-4.4459	-9.0597	-0.45	0	-999.999	-3.8291	-5.9127	-3.1907	-13.2617	-18.2266	-13.2216	27.2511	22.1882	-15.5411	0
react	109	-9.7091	-9.1609	-15.1214	-24.2079	-11.4555	-13.6751	-14.1378	-3.608	-10.767	-0.857	0	-999.999	-2.2145	-6.1661	-6.6453	-17.3379	-30.4972	-13.1055	21.1534	18.6648	-12.4847	0
react	110	-8.0865	-7.7207	-12.8006	-20.1198	-9.4456	-10.9758	-11.1296	-4.1046	-7.8784	0	0	-999.999	-3.8119	-5.9601	-3.2378	-12.1605	-15.3251	-13.7942	27.4821	22.212	-16.1168	0
react	111	-7.5855	-6.96	-11.8905	-18.3138	-8.6714	-10.3048	-10.3507	-3.9812	-8.1499	0	0	-999.999	-3.8201	-6.0226	-3.138	-11.5242	-13.438	-12.6979	27.3143	22.2563	-15.4911	0
react	112	-9.8506	-9.6585	-15.006	-24.1736	-11.7917	-13.6205	-14.0596	-3.0498	-9.0272	0	0	-999.999	-2.8302	-5.8156	-6.5463	-14.7964	-26.1827	-13.6542	22.965	19.9725	-13.334	0
react	113	-9.8403	-9.3705	-15.4972	-25.1156	-11.6341	-14.0033	-14.4208	-3.0298	-10.6161	-0.4422	0	-999.999	-2.1676	-6.2892	-7.2337	-16.6853	-30.0743	-12.9371	17.8004	16.2459	-11.7808	0
react	114	-9.8637	-10.046	-15.4032	-24.9424	-11.5891	-13.9601	-14.3722	-4.0243	-12.5726	-1.4519	0	-999.999	-2.8919	-6.2496	-7.1253	-19.359	-34.2239	-12.231	18.027	16.3897	-11.7958	0
react	115	-10.2533	-9.6854	-15.654	-25.289	-11.9629	-14.028	-14.4109	-3.9079	-12.0572	-1.2274	0	-999.999	-2.5239	-5.771	-7.2134	-18.7436	-33.371	-13.2229	18.9738	17.1699	-12.3225	0
react	116	-9.9135	-9.3689	-15.7198	-25.2287	-11.8873	-13.9583	-11.4895	-4.0558	-12.7422	-1.5374	0	-999.999	-2.124	-5.9433	-6.7404	-19.7963	-34.6051	-13.0085	18.0002	16.4777	-11.8478	0
react	117	-10.2219	-9.8561	-19.7928	-31.2581	-11.9897	-13.9856	-11.4255	-3.158	-11.0529	-0.6628	0	-999.999	-2.6191	-6.0231	-6.1426	-17.4159	-30.1009	-12.8537	13.6659	14.2515	-11.6564	0
react	118	-10.2801	-9.981	-17.3138	-27.3523	-11.9514	-13.9529	-11.3909	-3.0275	-11.0336	-0.6694	0	-999.999	-2.7384	-6.2876	-4.2407	-17.3502	-27.7167	-12.6018	15.4182	14.9561	-11.1434	0
react	119	-9.9669	-8.9096	-14.7469	-23.6232	-11.9582	-13.9199	-11.3866	-3.873	-12.558	-1.2814	0	-999.999	-1.7099	-5.9721	-4.2114	-19.1205	-30.4532	-12.6989	18.6006	16.6901	-11.5671	0
react	120	-9.2455	-8.3837	-17.0659	-26.6721	-11.1016	-13.0542	-10.4959	-3.6449	-11.3425	-1.1401	0	-999.999	-1.9937	-6.3953	-5.8364	-18.5819	-30.674	-13.1441	17.1682	16.3856	-11.9427	0
react	121	-9.8643	-8.9724	-13.6494	-21.8835	-11.84	-13.9793	-11.4297	-4.2323	-13.2574	-1.8061	0	-999.999	-1.7287	-6.2997	-6.6273	-20.797	-36.2151	-12.7363	19.6428	17.2095	-11.3797	0
react	122	-9.8108	-10.3998	-14.3144	-23.1373	-11.5105	-13.9764	-11.4165	-4.1668	-12.7702	-1.5834	0	-999.999	-3.2118	-6.1193	-7.2019	-19.9379	-35.3763	-12.3859	19.7318	17.4158	-11.9064	0
react	123	-10.3913	-9.6656	-16.5641	-26.6863	-12.0729	-14.2057	-11.6075	-3.7857	-12.2554	-1.2106	0	-999.999	-2.3682	-5.6457	-5.8968	-19.2839	-32.7112	-13.2421	17.2334	16.1188	-12.2127	0
react	124	-10.154	-9.7846	-17.0754	-27.4043	-11.8169	-13.9973	-11.4246	-3.5445	-11.5976	-0.9626	0	-999.999	-2.6063	-6.0501	-6.6205	-17.7569	-31.0864	-12.96	16.689	15.8123	-11.954	0
react	125	-8.9602	-8.6123	-15.753	-24.6698	-10.9595	-12.8615	-10.3217	-3.7136	-11.4646	-1.0117	0	-999.999	-2.5717	-6.254	-5.6576	-17.8392	-29.0702	-12.5818	18.4294	17.0148	-12.0325	0

state	soln	si_CO2(g)	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL
i_soln	1	-3.8152	-47.029	3.44E+03	3.00E+02	3.81E+01	4.82E+02	1.43E+02	1.49E+02	2.29E+03	9.85E-03	5.47E-08	4.40E-95	2.01E-01	0.00E+00	6.99E+00	2.96E+01	3.24E+00	3.41E+02	5.02E+00	5.20E-02	5.02E-01	5.52E+01
i_soln	2	-1.6178	-38.9612	3.55E+03	3.45E+02	2.91E+01	4.95E+02	1.50E+02	2.74E+02	2.11E+03	1.18E+02	5.29E-02	4.40E-95	5.02E-01	0.00E+00	1.00E-02	2.40E+01	4.07E+00	3.31E+02	5.02E-01	5.20E-02	5.02E-01	7.03E+00
i_soln	3	-2.3287	-39.8625	3.61E+03	3.21E+02	3.61E+01	5.10E+02	1.49E+02	1.43E+02	2.39E+03	1.87E+01	6.46E-03	4.40E-95	4.01E-01	0.00E+00	1.61E-01	3.94E+01	3.60E+00	3.21E+02	2.01E+00	5.20E-02	5.02E-01	2.71E+01
i_soln	4	-3.0495	-47.1429	3.73E+03	3.09E+02	3.91E+01	5.30E+02	1.61E+02	2.03E+02	2.44E+03	6.56E-02	4.08E-07	4.40E-95	5.02E-01	0.00E+00	8.81E+00	3.38E+01	3.56E+00	3.21E+02	5.02E+00	5.20E-02	1.00E+00	4.12E+01
i_soln	5	-2.2412	-42.0662	3.66E+03	3.49E+02	3.41E+01	4.87E+02	1.74E+02	2.51E+02	2.32E+03	1.78E+01	4.04E-03	4.40E-95	3.01E-01	0.00E+00	3.01E-02	2.45E+01	3.69E+00	3.91E+02	1.00E+00	5.20E-02	5.02E-01	1.81E+01
i_soln	6	-3.8231	-47.9927	3.63E+03	3.33E+02	3.61E+01	5.27E+02	1.64E+02	2.24E+02	2.35E+03	6.98E-03	2.72E-08	4.40E-95	5.02E-01	0.00E+00	8.53E-03	3.21E-02	3.52E-03	3.21E-01	6.02E-03	5.20E-02	1.00E-03	3.91E-02
i_soln	7	-3.0695	-44.1163	3.89E+03	3.36E+02	3.92E+01	5.59E+02	1.67E+02	1.96E+02	2.55E+03	2.26E-01	5.52E-06	4.40E-95	3.01E-01	0.00E+00	1.00E-01	3.36E+01	3.72E+00	3.81E+02	2.01E+00	5.20E-02	5.02E-01	3.21E+01
i_soln	8	-3.7917	-48.9546	3.68E+03	3.20E+02	4.12E+01	4.96E+02	1.53E+02	1.18E+02	2.50E+03	2.77E-03	4.28E-09	4.40E-95	5.02E-02	0.00E+00	1.39E+01	3.34E+01	3.39E+00	2.41E+02	6.02E+00	5.20E-02	3.01E+00	5.62E+01
i_soln	9	-2.3228	-42.8605	3.74E+03	3.39E+02	3.61E+01	5.10E+02	1.63E+02	1.72E+02	2.47E+03	3.82E+00	2.62E-04	4.40E-95	3.01E-01	0.00E+00	1.07E+00	4.31E+01	4.34E+00	3.91E+02	4.01E+00	5.20E-02	5.02E-01	2.51E+01
i_soln	10	-1.9085	-40.3703	3.51E+03	3.19E+02	3.61E+01	4.79E+02	1.51E+02	1.54E+02	2.29E+03	3.46E+01	8.47E-03	4.40E-95	3.01E-01	0.00E+00	1.81E-01	3.98E+01	4.04E+00	3.51E+02	2.01E+00	5.20E-02	5.02E-01	2.11E+01
i_soln	11	-3.802	-50.4324	3.72E+03	3.25E+02	4.32E+01	5.06E+02	1.59E+02	2.57E+02	2.38E+03	1.44E-03	1.15E-09	4.40E-95	5.02E-02	0.00E+00	1.49E+01	3.12E+01	3.37E+00	4.21E+02	6.02E+00	5.20E-02	5.02E-01	5.52E+01
i_soln	12	-3.8202	-50.8821	3.71E+03	3.31E+02	3.91E+01	5.04E+02	1.45E+02	8.23E+01	2.56E+03	1.48E-03	1.19E-09	4.40E-95	5.02E-02	0.00E+00	1.40E+01	3.22E+01	3.33E+00	3.51E+02	6.02E+00	5.20E-02	4.02E+00	5.42E+01
i_soln	13	-3.8211	-49.119	3.72E+03	3.17E+02	4.02E+01	5.18E+02	1.48E+02	9.43E+01	2.55E+03	3.87E-03	8.23E-09	4.40E-95	5.02E-02	0.00E+00	1.45E+01	2.94E+01	3.30E+00	3.21E+02	6.02E+00	5.20E-02	4.02E+00	5.52E+01
i_soln	14	-3.8158	-50.0827	3.77E+03	3.27E+02	4.42E+01	5.19E+02	1.61E+02	2.75E+02	2.39E+03	2.15E-03	2.54E-09	4.40E-95	5.02E-02	0.00E+00	1.37E+01	3.25E+01	3.35E+00	2.81E+02	5.02E+00	5.20E-02	1.00E+00	4.72E+01
i_soln	15	-3.8001	-50.9128	3.65E+03	3.11E+02	3.71E+01	5.05E+02	1.53E+02	1.95E+02	2.40E+03	1.07E-03	6.30E-10	4.40E-95	1.00E-01	0.00E+00	1.41E+01	3.05E+01	3.04E+00	3.21E+02	6.02E+00	4.92E+01	2.01E+00	5.42E+01
i_soln	16	-3.7942	-49.7459	3.50E+03	3.14E+02	3.91E+01	4.51E+02	1.55E+02	1.60E+02	2.33E+03	1.86E-03	1.92E-09	4.40E-95	2.01E-01	0.00E+00	1.57E+01	2.89E+01	3.02E+00	3.91E+02	8.03E+00	5.42E+01	1.00E+00	5.02E-01
i_soln	17	-3.7764	-50.1432	3.66E+03	3.70E+02	3.51E+01	4.50E+02	1.49E+02	7.53E+01	2.53E+03	1.15E-03	7.40E-10	4.40E-95	2.01E+00	0.00E+00	1.52E+01	2.84E+01	2.82E+00	3.61E+02	6.02E+00	5.42E+01	2.01E+00	9.03E+00
i_soln	18	-3.7867	-50.9358	3.69E+03	3.03E+02	3.81E+01	5.03E+02	1.70E+02	1.89E+02	2.44E+03	8.64E-04	4.15E-10	4.40E-95	2.01E+00	0.00E+00	1.30E+01	2.51E+01	3.44E+00	3.31E+02	7.02E+00	5.42E+01	4.01E+00	1.59E+02
i_soln	19	-3.0124	-47.5514	3.78E+03	3.14E+02	3.81E+01	5.12E+02	1.54E+02	6.93E+01	2.62E+03	3.38E-02	1.08E-07	4.40E-95	2.01E-01	0.00E+00	1.48E+01	4.97E+01	3.46E+00	4.22E+02	8.03E+00	6.12E+01	4.02E+00	4.02E+00
i_soln	20	-3.7789	-50.2146	3.53E+03	2.90E+02	3.61E+01	4.76E+02	1.55E+02	9.27E+01	2.43E+03	1.14E-03	7.27E-10	4.40E-95	1.00E-01	0.00E+00	1.33E+01	3.17E+01	3.13E+00	3.11E+02	5.02E+00	5.12E+01	3.01E+00	6.25E+02
i_soln	21	-3.8039	-49.3956	3.66E+03	2.87E+02	3.71E+01	5.10E+02	1.62E+02	1.41E+02	2.47E+03	2.61E-03	3.76E-09	4.40E-95	5.02E-02	0.00E+00	1.50E+01	3.29E+01	3.41E+00	3.41E+02	7.03E+00	5.02E+01	4.01E+00	2.33E+02
i_soln	22	-3.8163	-52.9656	3.26E+03	2.61E+02	3.41E+01	4.61E+02	1.51E+02	4.50E+02	1.86E+03	4.26E-04	9.77E-11	4.40E-95	5.01E-01	0.00E+00	1.46E+01	3.00E+01	3.24E+00	3.01E+02	6.02E+00	5.21E+01	2.01E+00	2.61E+01
i_soln	23	-3.8138	-50.3595	3.78E+03	2.78E+02	3.61E+01	5.46E+02	1.73E+02	1.71E+02	2.53E+03	1.79E-03	1.77E-09	4.40E-95	1.00E-01	0.00E+00	1.43E+01	2.90E+01	3.10E+00	3.01E+02	6.02E+00	5.02E+01	2.01E+00	9.03E+00
i_soln	24	-2.8919	-47.3063	3.24E+03	2.41E+02	3.01E+01	4.66E+02	1.47E+02	1.22E+02	2.19E+03	5.33E-02	1.99E-07	4.40E-95	2.01E-01	0.00E+00	1.08E+01	2.88E+01	3.01E+00	3.11E+02	5.02E+00	4.31E+01	3.01E+00	1.00E+01
i_soln	200	-2.16	-50.2756	3.67E+03	3.08E+02	3.72E+01	5.00E+02	1.56E+02	7.24E+01	2.55E+03	6.92E-02	6.01E-08	4.40E-95	2.01E-01	0.00E+00	1.41E+01	2.96E+01	3.17E+00	3.51E+02	4.79E-03	5.20E-02	1.00E+00	1.41E+01
react	101	-2.1587	-47.7608	3.66E+03	3.08E+02	3.56E+01	5.00E+02	1.56E+02	7.22E+01	2.54E+03	3.28E-02	1.35E-08	4.40E-95	2.01E-01	0.00E+00	1.07E+01	2.87E+01	3.17E+00	3.51E+02	4.79E-03	5.20E-02	1.00E+00	1.41E+01
react	102	-3.8017	-49.8893	3.43E+03	3.00E+02	3.65E+01	4.82E+02	1.43E+02	1.49E+02	2.28E+03	1.29E-03	9.05E-10	4.40E-95	2.01E-01	0.00E+00	3.59E+00	2.94E+01	3.24E+00	3.41E+02	5.02E+00	5.20E-02	5.02E-01	5.52E+01
react	103	-1.3015	-66.2527	3.49E+03	3.45E+02	3.02E+01	4.95E+02	1.50E+02	2.74E+02	2.11E+03	7.45E+01	1.01E-02	4.40E-95	5.02E-01	0.00E+00	3.03E-03	1.46E+00	4.03E+00	3.31E+02	5.02E-01	5.20E-02	5.02E-01	7.03E+00
react	104	-1.8916	-65.7977	3.58E+03	3.21E+02	3.49E+01	5.10E+02	1.49E+02	1.43E+02	2.38E+03	4.26E+00	1.23E-04	4.40E-95	4.01E-01	0.00E+00	3.02E-02	2.71E+01	3.60E+00	3.21E+02	2.01E+00	5.20E-02	5.02E-01	2.71E+01
react	105	-3.0398	-54.9278	3.71E+03	3.09E+02	3.52E+01	5.30E+02	1.61E+02	1.99E+02	2.42E+03	2.91E-02	7.84E-08	4.40E-95	5.02E-01	0.00E+00	6.43E-01	4.56E+01	3.62E+00	3.21E+02	5.02E+00	5.20E-02	1.00E+00	4.12E+01
react	106	-1.8564	-56.9354	3.64E+03	3.49E+02	3.42E+01	4.87E+02	1.74E+02	2.53E+02	2.32E+03	1.16E+00	7.10E-06	4.40E-95	3.01E-01	0.00E+00	2.03E-01	1.65E+01	3.69E+00	3.91E+02	1.00E+00	5.20E-02	5.02E-01	1.81E+01
react	107	-3.8531	-52.6952	3.63E+03	3.33E+02	3.62E+01	5.27E+02	1.64E+02	2.23E+02	2.35E+03	2.52E-02	3.81E-07	4.40E-95	5.02E-01	0.00E+00	1.14E-01	6.23E-01	3.52E-03	3.21E-01	6.02E-03	5.20E-02	1.00E-03	3.91E-02
react	108	-3.0139	-53.5467	3.89E+03	3.36E+02	3.93E+01	5.59E+02	1.67E+02	1.97E+02	2.55E+03	2.87E-02	7.82E-08	4.40E-95	3.01E-01	0.00E+00	4.64E-01	3.13E+01	3.72E+00	3.81E+02	2.01E+00	5.20E-02	5.02E-01	3.21E+01
react	109	-3.789	-49.2637	3.65E+03	3.20E+02	3.71E+01	4.96E+02	1.53E+02	1.14E+02	2.48E+03	1.02E-03	5.73E-10	4.40E-95	5.02E-02	0.00E+00	5.39E+00	4.15E+01	3.39E+00	2.41E+02	6.02E+00	5.20E-02	3.01E+00	5.62E+01
react	110	-2.1705	-54.5877	3.73E+03	3.39E+02	3.58E+01	5.10E+02	1.63E+02	1.73E+02	2.47E+03	2.19E-01	6.08E-07	4.40E-95	3.01E-01	0.00E+00	4.69E-01	4.02E+01	4.23E+00	3.91E+02	4.01E+00	5.20E-02	5.02E-01	2.51E+01
react	111	-1.5038	-53.6738	3.46E+03	3.19E+02	3.62E+01	4.79E+02	1.51E+02	1.58E+02	2.29E+03	1.10E+00	3.39E-06	4.40E-95	3.01E-01	0.00E+00	3.96E-01	2.22E+01	2.68E+00	3.51E+02	2.01E+00	5.20E-02	5.02E-01	2.11E+01
react	112	-3.8015	-50.4473	3.69E+03	3.25E+02	3.81E+01	5.06E+02	1.59E+02	2.51E+02	2.35E+03	1.12E-03	6.93E-10	4.40E-95	5.02E-02	0.00E+00	4.49E+00	4.57E+01	4.30E+00	4.22E+02	6.02E+00	5.20E-02	5.02E-01	5.52E+01
react	113	-3.8191	-48.4946	3.70E+03	3.31E+02	3.75E+01	5.04E+02	1.45E+02	8.23E+01	2.55E+03	7.59E-04	3.13E-10	4.40E-95	5.02E-02	0.00E+00	1.06E+01	3.21E+01	3.87E+00	3.51E+02	6.02E+00	5.20E-02	4.02E+00	5.42E+01
react	114	-3.8163	-48.4984	3.70E+03	3.17E+02	3.77E+01	5.18E+02	1.48E+02	9.43E+01	2.54E+03	7.99E-04	3.48E-10	4.40E-95	5.02E-02	0.00E+00	9.46E+00	2.93E+01	3.30E+00	3.21E+02	6.02E+00	5.20E-02	4.02E+00	5.52E+01
react	115	-3.8137	-49.0204	3.75E+03	3.27E+02	4.22E+01	5.19E+02	1.61E+02	2.75E+02	2.38E+03	7.60E-04	3.16E-10	4.40E-95	5.02E-02	0.00E+00	9.79E+00	3.19E+01	3.35E+00	2.81E+02	5.02E+00	5.20E-02	1.00E+00	4.72E+01
react	116	-3.7995	-48.1895	3.64E+03	3.11E+02	3.59E+01	5.05E+02	1.53E+02	1.95E+02	2.39E+03	6.99E-04	2.69E-10	4.40E-95	1.00E-01	0.00E+00	1.17E+01	3.04E+01	3.04E+00	3.21E+02	6.02E+00	4.92E+01	2.01E+00	5.42E+01
react	117	-3.7924	-47.8779	3.48E+03	3.14E+02	3.70E+01	4.51E+02	1.55E+02	1.60E+02	2.32E+03	7.04E-04	2.72E-10	4.40E-95	2.01E-01	0.00E+00	1.12E+01	2.87E+01	3.02E+00	3.91E+02	8.03E+00	5.42E+01	1.00E+00	5.02E-01
react	118	-3.7758	-47.1012	3.65E+03	3.70E+02	3.39E+01	4.50E+02	1.49E+02	7.52E+01	2.52E+03	7.38E-04	3.05E-10	4.40E-95	2.01E+00	0.00E+00	1.25E+01	2.82E+01	2.82E+00	3.61E+02	6.02E+00	5.42E+01	2.01E+00	9.03E+00
react	119	-3.7865	-47.6855	3.68E+03	3.03E+02	3.77E+01	5.03E+02	1.70E+02	1.89E+02	2.44E+03	7.46E-04	3.09E-10	4.40E-95	2.01E+00	0.00E+00	1.21E+01	2.50E+01	3.44E+00	3.31E+02	7.03E+00	5.42E+01	4.01E+00	1.59E+02
react	120	-3.0048	-48.4418	3.75E+03	3.14E+02	3.53E+01	5.12E+02	1.54E+02	6.92E+01	2.61E+03	4.83E-03	2.17E-09	4.40E-95	2.01E-01	0.00E+00	8.90E+00	4.95E+01	3.46E+00	4.22E+02	8.03E+00	6.12E+01	4.02E+00	4.02E+00
react	121	-3.7782	-47.4371	3.52E+03	2.90E+02	3.48E+01	4.76E+02	1.55E+02	9.27E+01	2.42E+03	7.15E-04	2.84E-10	4.40E-95	1.00E-01	0.00E+00	1.06E+01	3.16E+01	3.13E+00	3.11E+02	5.02E+00	5.12E+01	3.01E+00	6.25E+02
react	122	-3.801	-48.4059	3.64E+03	2.87E+02	3.48E+01	5.10E+02	1.62E+02	1.41E+02	2.46E+03	7.56E-04	3.14E-10	4.40E-95	5.02E-02	0.00E+00	1.02E+01	3.28E+01	3.41E+00	3.41E+02	7.03E+00	5.02E+01	4.01E+00	2.33E+02
react	123	-3.8165	-48.6193	3.27E+03	2.61E+02	3.54E+01	4.61E+02	1.51E+02	4.50E+02	1.86E+03	5.71E-04	1.75E-10	4.40E-95	5.01E-01	0.00E+00	1.73E+01	2.99E+01	3.24E+00	3.01E+02	6.02E+00	5.21E+01	2.01E+00	2.61E+01
react	124	-3.8121	-48.5521	3.77E+03	2.78E+02	3.43E+01	5.46E+02	1.73E+02	1.71E+02	2.52E+03	7.65E-04	3.20E-10	4.40E-95	1.00E-01	0.00E+00	1.05E+01	2.89E+01	3.10E+00	3.01E+02	6.02E+00	5.02E+01	2.01E+00	9.03E+00
react	125	-2.883	-48.5784	3.22E+03	2.41E+02	2.79E+01	4.66E+02	1.47E+02	1.22E+02	2.18E+03	7.69E-03	4.04E-09	4.40E-95	2.01E-01	0.00E+00	6.33E+00	2.86E+01	3.01E+00	3.11E+02	5.02E+00	4.31E+01	3.01E+00	1.00E+01

state	soln	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
i_soln	1	1.29E+02	1.34E+03	3.01E+00	2.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	4.22E-11
i_soln	2	2.51E+01	1.61E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	8.79E-02	1.80E-95	1.31E-07
i_soln	3	6.72E+01	1.01E+03	5.02E+00	2.01E-01	2.01E+00	5.02E-01	5.02E+00	2.20E-02	1.80E-95	5.88E-08
i_soln	4	1.01E+02	1.60E+03	7.03E+00	3.01E-01	5.02E-01	5.02E-01	5.02E+00	2.20E-02	1.80E-95	5.35E-11
i_soln	5	5.02E+01	5.02E+00	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	2.20E-02	1.80E-95	1.63E-08
i_soln	6	1.15E-01	1.80E+00	3.01E-03	2.01E-04	5.02E-04	0.00E+00	5.02E-03	2.20E-02	1.80E-95	2.23E-11
i_soln	7	9.24E+01	8.03E+00	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	2.20E-02	1.80E-95	1.53E-09
i_soln	8	1.31E+02	1.29E+03	2.01E+01	5.02E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	1.30E-11
i_soln	9	6.83E+01	5.32E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	4.40E-02	1.80E-95	3.73E-08
i_soln	10	5.22E+01	2.81E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	4.84E-01	1.80E-95	1.62E-06
i_soln	11	1.28E+02	7.69E+02	5.02E+00	2.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	2.92E-12
i_soln	12	1.31E+02	1.87E+03	2.11E+01	6.02E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	2.16E-12
i_soln	13	1.28E+02	1.58E+03	4.01E+00	6.02E-01	1.00E+00	1.00E+00	5.02E+00	2.20E-02	1.80E-95	8.63E-12
i_soln	14	1.17E+02	6.83E+02	1.00E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	8.79E-02	1.80E-95	4.58E-12
i_soln	15	1.51E+02	1.71E+03	2.51E+01	4.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	6.36E-13
i_soln	16	1.32E+02	8.02E+02	8.03E+00	3.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	1.40E-11
i_soln	17	1.24E+02	6.51E+02	6.02E+00	3.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	5.59E-12
i_soln	18	1.36E+02	1.30E+03	6.62E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	6.23E-13
i_soln	19	1.45E+02	1.01E+03	3.31E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	3.60E-11
i_soln	20	1.22E+02	1.75E+03	6.22E+01	4.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	3.58E-13
i_soln	21	1.25E+02	1.88E+03	2.01E+00	8.03E-01	1.00E+00	1.00E+00	5.02E+00	2.20E-02	1.80E-95	2.87E-12
i_soln	22	1.25E+02	7.69E+02	1.60E+01	4.01E-01	5.01E-01	1.00E+00	5.01E+00	2.20E-02	1.80E-95	2.12E-13
i_soln	23	1.25E+02	8.65E+02	8.03E+00	4.01E-01	5.02E-01	1.00E+00	5.02E+00	2.20E-02	1.80E-95	6.35E-12
i_soln	24	1.09E+02	9.21E+02	9.03E+00	2.01E-01	5.02E-01	5.02E-01	5.02E+00	2.20E-02	1.80E-95	5.55E-11
i_soln	200	1.29E+02	6.08E+02	5.02E+00	4.01E-01	5.02E-01	7.95E-04	5.02E+00	1.32E-01	1.80E-95	4.23E-12
react	101	1.29E+02	6.08E+02	5.02E+00	4.01E-01	5.02E-01	7.95E-04	5.02E+00	0.00E+00	3.61E-02	9.34E-13
react	102	1.29E+02	1.34E+03	3.01E+00	2.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.04E-03	6.81E-13
react	103	2.51E+01	1.61E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	0.00E+00	2.43E-02	2.32E-09
react	104	6.72E+01	1.01E+03	5.02E+00	2.01E-01	2.01E+00	5.02E-01	5.02E+00	0.00E+00	6.03E-03	5.86E-10
react	105	1.01E+02	1.60E+03	7.03E+00	3.01E-01	5.02E-01	5.02E-01	5.02E+00	0.00E+00	6.03E-03	2.01E-11
react	106	5.02E+01	5.02E+00	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	0.00E+00	6.04E-03	1.90E-11
react	107	1.15E-01	1.80E+00	3.01E-03	2.01E-04	5.02E-04	0.00E+00	5.02E-03	0.00E+00	6.04E-03	3.26E-10
react	108	9.24E+01	8.03E+00	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	0.00E+00	6.02E-03	2.01E-11
react	109	1.31E+02	1.29E+03	2.01E+01	5.02E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.02E-03	1.70E-12
react	110	6.83E+01	5.32E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	0.00E+00	1.20E-02	5.05E-11
react	111	5.22E+01	2.81E+01	5.02E-01	5.02E-02	5.02E-01	5.02E-01	5.02E+00	0.00E+00	1.33E-01	8.10E-11
react	112	1.28E+02	7.69E+02	5.02E+00	2.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.05E-03	1.07E-11
react	113	1.31E+02	1.87E+03	2.11E+01	6.02E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.01E-03	2.97E-12
react	114	1.28E+02	1.58E+03	4.01E+00	6.02E-01	1.00E+00	1.00E+00	5.02E+00	0.00E+00	6.01E-03	3.57E-13
react	115	1.17E+02	6.83E+02	1.00E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	2.42E-02	5.62E-13
react	116	1.51E+02	1.71E+03	2.51E+01	4.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.04E-03	2.69E-13
react	117	1.32E+02	8.02E+02	8.03E+00	3.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.04E-03	1.95E-12
react	118	1.24E+02	6.51E+02	6.02E+00	3.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.01E-03	2.28E-12
react	119	1.36E+02	1.30E+03	6.62E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.04E-03	4.62E-13
react	120	1.45E+02	1.01E+03	3.31E+01	3.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.01E-03	7.04E-13
react	121	1.22E+02	1.75E+03	6.22E+01	4.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.03E-03	1.38E-13
react	122	1.25E+02	1.88E+03	2.01E+00	8.03E-01	1.00E+00	1.00E+00	5.02E+00	0.00E+00	6.03E-03	2.35E-13
react	123	1.25E+02	7.69E+02	1.60E+01	4.01E-01	5.01E-01	1.00E+00	5.01E+00	0.00E+00	6.13E-03	3.85E-13
react	124	1.25E+02	8.65E+02	8.03E+00	4.01E-01	5.02E-01	1.00E+00	5.02E+00	0.00E+00	6.03E-03	1.14E-12
react	125	1.09E+02	9.21E+02	9.03E+00	2.01E-01	5.02E-01	5.02E-01	5.02E+00	0.00E+00	6.06E-03	1.10E-12

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li
i_soln	1	5.57	4	0.0003413	0.0856354	1	-3.27E-18	-2.93E-15	1.63E-05	1.17E-08	4.20E-05	3.30E-07	1.29E-02	2.55E-09	2.19E-02	1.69E-07	3.32E-08	2.31E-07	1.79E-03	1.52E-05	4.12E-04	5.29E-04	6.92E-05
react	101	5.39314	-0.839669	0.0002337	0.0854865	0.999999	-2.58E-17	-2.32E-14	1.16E-06	1.17E-08	4.20E-05	3.30E-07	1.29E-02	2.55E-09	2.19E-02	1.69E-07	3.32E-08	2.31E-07	1.79E-03	1.52E-05	3.82E-04	5.24E-04	6.92E-05

state	soln	Mg	Mn	Na	N(-3)	N(5)	Ni	P	Pb	S(6)	U	V	Zn	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite	d_Magnesite
i_soln	**1**	7.40E-03	5.54E-05	2.89E-02	0.00E+00	2.35E-06	1.90E-07	2.38E-05	2.00E-08	2.44E-02	2.30E-09	1.07E-07	5.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**101**	7.40E-03	3.31E-05	2.89E-02	2.35E-06	0.00E+00	1.90E-07	1.42E-06	2.00E-08	2.44E-02	2.30E-09	1.07E-07	5.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8	d_Fe3(OH)8
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.86E-06	9.86E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Ferrihydrite	d_Ferrihydrite	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.06E-06	5.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite	d_Celestite	Anglesite	d_Anglesite	Halite	d_Halite	Fluorite	d_Fluorite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.64E-08	8.64E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_H-Jarosite
i_soln	**1**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.3469	-2.5202	-4.7303	-5.2687	-3.6203	-13.8302	-6.3377	-12.0128	-26.6214	3.2266	0.8454	8.867	2.2443	11.1864	-6.5587	-5.9874	0.5475	-3.3447
react	**101**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.6718	-2.845	-5.38	-5.9184	-3.9452	-15.1297	-6.6626	-12.6912	-28.2745	-2.1744	-9.9566	-1.9349	-3.1566	0	-6.9432	-17.1738	-4.8535	-18.8398

state	soln	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite
i_soln	1	-0.464	1.3591	6.0299	-0.5146	2.3367	-1.0189	1.4638	1.2151	2.8953	-15.6128	-9.6018	-22.6737	-8.8621	-18.0046	-2.7279	-0.0926	-0.3274	-2.8034	-4.5385	-4.1634	-28.6432	-7.4924
react	101	-16.1359	-14.317	0	-2.3463	-6.0518	-3.2045	-0.7218	-0.9705	0.7097	-26.2235	-15.196	-34.4395	-9.4397	-29.1928	-3.2769	-0.0921	-0.3269	-2.8029	-4.5381	-4.1939	-38.3833	-7.4907

state	soln	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_CO2(g)	si_O2(g)
i_soln	**1**	-7.4009	-12.3728	-9.6439	-11.8745	-7.2276	-2.207	-4.1983	-3.8194	-7.3336	-11.439	-5.7833	-8.7213	-5.8435	0.0726	-2.9026	0.4537	-999.999	-2.9969	-5.0273	-3.1716	-1.3398	-43.846
react	**101**	-7.3992	-12.3716	-9.8676	-11.8738	-11.8443	-2.5628	-4.5229	-4.1391	-17.2462	-26.2937	-6.1087	-9.0449	-6.1676	-6.3618	-6.1226	0	-999.999	-2.9914	-5.0272	-2.1841	-1.3112	-63.9121

state	soln	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL
i_soln	1	4.55E+03	6.65E+02	2.07E+01	5.16E+02	1.80E+02	7.76E+02	2.34E+03	1.90E+01	7.07E-04	4.40E-95	2.88E-01	0.00E+00	4.41E-01	2.30E+01	3.04E+00	4.54E+02	2.97E+00	9.94E+00	1.73E+00	1.47E+01	1.12E+01	3.73E+02
react	101	4.54E+03	6.65E+02	2.05E+01	5.16E+02	1.80E+02	7.76E+02	2.34E+03	1.35E+01	3.34E-04	4.40E-95	2.88E-01	0.00E+00	3.12E-02	2.14E+01	1.82E+00	4.54E+02	2.97E+00	9.94E+00	1.73E+00	1.47E+01	1.12E+01	3.73E+02

state	soln	Pb_ugL	Cd_ugL	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
i_soln	**1**	4.15E+00	2.86E-01	8.74E-01	5.49E-01	5.47E+00	1.44E-01	1.80E-95	4.52E-08
react	**101**	4.15E+00	2.86E-01	8.74E-01	5.49E-01	5.47E+00	0.00E+00	3.99E-02	1.23E-09

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Calcite	si_Aragonite
i_soln	**1**	5.57	4	0.0003413	0.0856354	1	-3.27E-18	-2.93E-15	2.89E-02	5.29E-04	1.29E-02	7.40E-03	2.19E-02	2.44E-02	1.79E-03	1.52E-05	4.12E-04	2.31E-07	2.35E-06	2.38E-05	5.54E-05	-2.3469	-2.5202
react	**101**	5.55116	5.74634	0.0003644	0.0856148	0.999999	1.66E-18	1.49E-15	2.89E-02	5.29E-04	1.29E-02	7.40E-03	2.19E-02	2.44E-02	1.79E-03	1.52E-05	4.12E-04	2.31E-07	1.14E-22	2.38E-05	5.54E-05	-2.3811	-2.5543

state	soln	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)
i_soln	1	-4.7303	-5.2687	-3.6203	-13.8302	-6.3377	-12.0128	-26.6214	3.2266	0.8454	8.867	2.2443	11.1864	-6.5587	-5.9874	0.5475	-3.3447	-0.464	1.3591	6.0299	-0.5146	2.3367	-1.0189
react	101	-4.7986	-5.337	-3.6544	-13.9667	-6.3718	-12.0847	-26.7957	4.8965	4.1852	12.2068	3.9142	14.4686	-6.6163	-2.7052	2.2174	1.7405	4.6024	6.4255	5.9347	-0.5275	2.1719	-1.0695

state	soln	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite
i_soln	1	1.4638	1.2151	2.8953	-15.6128	-9.6018	-22.6737	-8.8621	-18.0046	-2.7279	-0.0926	-0.3274	-2.8034	-4.5385	-4.1634	-28.6432	-7.4924	-7.4009	-12.3728	-9.6439	-11.8745	-7.2276	-2.207
react	101	1.4131	1.1644	2.8447	-12.1954	-7.912	-19.3316	-8.8997	-14.6248	-2.762	-0.0925	-0.3273	-2.8033	-4.5384	-4.1832	-25.1901	-7.4921	-7.4007	-12.3726	-9.6438	-11.8744	-6.8422	-2.2611

state	soln	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_CO2(g)	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL
i_soln	**1**	-4.1983	-3.8194	-7.3336	-11.439	-5.7833	-8.7213	-5.8435	0.0726	-2.9026	0.4537	-999.999	-2.9969	-5.0273	-3.1716	-1.3398	-43.846	4.55E+03	6.65E+02	2.07E+01	5.16E+02	1.80E+02	7.76E+02
react	**101**	-4.2324	-3.8529	-6.6346	-10.3888	-5.8175	-8.7553	-5.8775	1.7633	-3.0337	0.4538	-999.999	-2.9962	-5.0273	-3.1777	-1.3363	-36.936	4.55E+03	6.65E+02	2.07E+01	5.16E+02	1.80E+02	7.76E+02

state	soln	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	As_ugL	Se_ugL	Sb_ugL	Mo_ugL	Cr_ugL	Ni_ugL	Zn_ugL	Cu_ugL	Pb_ugL	Cd_ugL	Hg_ugL	NO3_mgL	NH4_mgL
i_soln	**1**	2.34E+03	1.90E+01	7.07E-04	4.40E-95	2.88E-01	0.00E+00	4.41E-01	2.30E+01	3.04E+00	8.74E-01	4.80E+00	5.02E-01	6.17E-01	1.73E+00	1.12E+01	3.73E+02	1.47E+01	4.15E+00	2.86E-01	0.00E+00	1.44E-01	1.80E-95
react	**101**	2.34E+03	1.83E+01	6.53E-04	4.40E-95	2.88E-01	0.00E+00	4.41E-01	2.30E+01	3.04E+00	8.74E-01	4.80E+00	5.02E-01	6.17E-01	1.73E+00	1.12E+01	3.73E+02	1.47E+01	4.15E+00	2.86E-01	0.00E+00	6.96E-18	3.99E-02

state	soln	PO4_mgL
i_soln	1	4.52E-08
react	101	4.16E-08

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li
i_soln	1	6.05	4	5.03E-06	0.0766705	1	1.10E-17	1.06E-14	2.60E-06	0.00E+00	4.08E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-08	0.00E+00	1.58E-05	4.67E-04	0.00E+00	0.00E+00
i_soln	2	6.01	4	0.000713187	0.0895436	1	-5.92E-14	-5.00E-11	1.12E-06	0.00E+00	4.18E-05	0.00E+00	1.36E-02	0.00E+00	2.62E-02	0.00E+00	0.00E+00	1.58E-08	1.81E-03	1.06E-05	4.80E-04	5.40E-04	7.99E-05
i_soln	3	6.07	4	0.000677001	0.0907773	1	6.30E-16	5.36E-13	0.00E+00	0.00E+00	4.56E-05	0.00E+00	1.46E-02	0.00E+00	2.27E-02	0.00E+00	0.00E+00	4.74E-08	1.58E-03	2.12E-05	5.06E-05	5.40E-04	8.53E-05
i_soln	4	6.04	4	0.000786301	0.0874117	1	-8.85E-15	-7.77E-12	3.72E-07	0.00E+00	4.46E-05	0.00E+00	1.35E-02	0.00E+00	2.23E-02	0.00E+00	0.00E+00	0.00E+00	1.92E-03	1.59E-05	5.02E-04	5.40E-04	8.06E-05
i_soln	5	5.98	4	0.000746993	0.0898318	1	-2.95E-14	-2.50E-11	2.61E-06	0.00E+00	4.18E-05	0.00E+00	1.38E-02	0.00E+00	2.49E-02	0.00E+00	0.00E+00	0.00E+00	1.93E-03	1.59E-05	4.91E-04	6.17E-04	7.02E-05
i_soln	6	6.13	4	0.00084878	0.0872457	1	-5.92E-14	-5.18E-11	1.86E-06	0.00E+00	5.02E-05	0.00E+00	1.24E-02	0.00E+00	2.30E-02	0.00E+00	1.93E-08	3.16E-08	1.88E-03	1.59E-05	4.88E-04	5.40E-04	7.14E-05
i_soln	7	5.96	4	0.000646154	0.086996	1	-2.80E-15	-2.45E-12	2.98E-09	0.00E+00	4.18E-08	0.00E+00	1.30E-02	0.00E+00	2.36E-02	0.00E+00	0.00E+00	0.00E+00	1.78E-03	1.59E-05	4.43E-07	5.14E-04	8.13E-08
i_soln	8	6.17	4	0.00103698	0.0895112	1	5.88E-14	5.05E-11	1.86E-06	0.00E+00	4.83E-05	0.00E+00	1.39E-02	0.00E+00	2.23E-02	0.00E+00	7.73E-08	6.33E-08	2.07E-03	1.59E-05	5.56E-04	5.65E-04	6.91E-05
i_soln	9	5.84	4	0.000556809	0.0868814	1	-1.53E-14	-1.34E-11	4.10E-06	0.00E+00	3.16E-05	0.00E+00	1.29E-02	0.00E+00	2.20E-02	0.00E+00	0.00E+00	0.00E+00	1.75E-03	1.06E-05	4.75E-04	5.40E-04	4.65E-05
i_soln	10	6.22	4	0.000998834	0.0851373	1	9.52E-16	8.61E-13	7.45E-07	0.00E+00	4.37E-05	0.00E+00	1.31E-02	0.00E+00	2.10E-02	0.00E+00	0.00E+00	0.00E+00	1.95E-03	1.59E-05	3.27E-04	5.40E-04	7.70E-05
i_soln	11	6.46	4	0.00125242	0.0891447	1	-6.47E-15	-5.47E-12	2.23E-06	0.00E+00	5.48E-05	0.00E+00	1.32E-02	0.00E+00	2.53E-02	0.00E+00	0.00E+00	1.58E-08	1.85E-03	1.59E-05	4.77E-04	5.65E-04	9.05E-05
i_soln	12	6.49	4	0.00112775	0.0837518	1	-4.93E-13	-4.57E-10	7.45E-07	0.00E+00	4.65E-05	0.00E+00	1.28E-02	0.00E+00	1.83E-02	0.00E+00	1.16E-07	0.00E+00	1.69E-03	1.06E-05	2.37E-04	5.40E-04	7.09E-05
i_soln	13	6.96	4	0.00160316	0.084562	1	4.19E-12	3.86E-09	1.12E-06	0.00E+00	4.74E-05	0.00E+00	1.31E-02	0.00E+00	1.76E-02	0.00E+00	0.00E+00	0.00E+00	1.53E-03	1.59E-05	4.23E-04	5.14E-04	7.61E-05
i_soln	14	6.77	4	0.00149555	0.0916742	1	8.91E-17	7.27E-14	1.49E-06	0.00E+00	3.72E-05	0.00E+00	1.38E-02	0.00E+00	2.76E-02	0.00E+00	0.00E+00	3.16E-08	1.81E-03	1.59E-05	1.32E-04	6.42E-04	4.62E-05
i_soln	15	6.04	4	0.000745947	0.0852761	1	2.12E-15	1.90E-12	3.72E-07	0.00E+00	4.46E-05	0.00E+00	1.31E-02	0.00E+00	2.21E-02	0.00E+00	0.00E+00	2.06E-07	1.81E-03	1.06E-05	1.80E-06	5.14E-04	6.86E-05
i_soln	16	6.43	4	0.0011953	0.0861083	1	-1.16E-13	-1.02E-10	1.49E-06	0.00E+00	4.83E-05	0.00E+00	1.26E-02	0.00E+00	2.44E-02	0.00E+00	5.80E-08	7.59E-07	1.80E-03	1.59E-05	6.46E-04	5.14E-04	7.58E-05
i_soln	17	6.46	4	0.00173113	0.0719291	1	-2.90E-17	-3.31E-14	1.78E-04	0.00E+00	3.53E-05	0.00E+00	1.00E-02	0.00E+00	6.13E-03	0.00E+00	1.93E-07	1.36E-06	1.60E-03	1.59E-05	8.08E-04	4.11E-04	6.18E-05
i_soln	18	6.13	4	0.000868175	0.0812125	1	-2.80E-14	-2.67E-11	4.80E-05	0.00E+00	4.18E-05	0.00E+00	1.19E-02	0.00E+00	1.90E-02	0.00E+00	7.73E-08	1.41E-06	1.66E-03	1.59E-05	5.63E-04	5.14E-04	8.73E-05
i_soln	19	5.97	4	0.000820841	0.0838354	1	1.64E-13	1.54E-10	1.08E-04	0.00E+00	5.76E-05	0.00E+00	1.26E-02	0.00E+00	1.64E-02	0.00E+00	7.73E-08	1.23E-06	1.77E-03	1.59E-05	6.66E-04	5.14E-04	8.48E-05
i_soln	20	6.08	4	0.000820041	0.0822399	1	-2.61E-15	-2.45E-12	2.61E-06	0.00E+00	3.81E-05	0.00E+00	1.20E-02	0.00E+00	1.86E-02	0.00E+00	0.00E+00	0.00E+00	1.89E-03	1.59E-05	4.14E-04	4.62E-04	6.19E-05
i_soln	21	6.63	4	0.00126908	0.083604	1	-7.50E-15	-6.95E-12	4.84E-06	0.00E+00	4.18E-05	0.00E+00	1.25E-02	0.00E+00	1.89E-02	0.00E+00	0.00E+00	0.00E+00	1.63E-03	1.06E-05	4.17E-04	4.88E-04	6.09E-05
i_soln	22	6.2	4	0.000798009	0.0830031	1	6.06E-15	5.37E-12	4.47E-06	0.00E+00	4.09E-05	0.00E+00	1.22E-02	0.00E+00	3.03E-02	0.00E+00	0.00E+00	0.00E+00	1.57E-03	1.59E-05	3.90E-04	5.14E-04	7.51E-05
i_soln	23	6.01	4	0.000810605	0.0837662	1	-2.33E-14	-2.12E-11	6.70E-06	0.00E+00	4.27E-05	0.00E+00	1.27E-02	0.00E+00	2.25E-02	0.00E+00	0.00E+00	4.74E-08	2.02E-03	2.11E-05	4.50E-04	4.88E-04	8.26E-05
react	101	4.81111	1.6947	-3.84E-05	0.0766452	1	6.10E-17	5.89E-14	2.60E-06	0.00E+00	4.08E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-08	0.00E+00	1.58E-05	4.45E-04	0.00E+00	0.00E+00
react	102	5.64343	-1.61046	0.000381671	0.0891585	0.999997	-6.06E-14	-5.14E-11	2.90E-07	0.00E+00	4.18E-05	0.00E+00	1.36E-02	0.00E+00	2.62E-02	0.00E+00	0.00E+00	1.58E-08	1.81E-03	1.06E-05	3.10E-04	5.39E-04	7.99E-05
react	103	6.08051	6.75763	0.000685552	0.0906766	0.999994	5.65E-16	4.81E-13	1.15E-07	0.00E+00	4.56E-05	0.00E+00	1.46E-02	0.00E+00	2.26E-02	0.00E+00	0.00E+00	4.74E-08	1.58E-03	2.12E-05	6.75E-12	5.40E-04	8.53E-05
react	104	5.56835	-1.3237	0.000354617	0.0870283	1	-8.08E-15	-7.13E-12	6.67E-07	0.00E+00	4.46E-05	0.00E+00	1.35E-02	0.00E+00	2.24E-02	0.00E+00	0.00E+00	0.00E+00	1.92E-03	1.59E-05	3.19E-04	5.40E-04	8.06E-05
react	105	5.58293	-1.56385	0.000372535	0.089402	0.999997	-3.03E-14	-2.59E-11	4.83E-07	0.00E+00	4.18E-05	0.00E+00	1.38E-02	0.00E+00	2.49E-02	0.00E+00	0.00E+00	0.00E+00	1.93E-03	1.59E-05	3.00E-04	6.16E-04	7.02E-05
react	106	5.75509	-1.76289	0.000461506	0.0868071	0.999996	-5.92E-14	-5.21E-11	3.88E-07	0.00E+00	5.02E-05	0.00E+00	1.24E-02	0.00E+00	2.30E-02	0.00E+00	1.93E-08	3.16E-08	1.88E-03	1.59E-05	2.88E-04	5.39E-04	7.14E-05
react	107	5.96022	1.35018	0.000646405	0.0869965	1	-3.27E-15	-2.85E-12	1.33E-07	0.00E+00	4.18E-08	0.00E+00	1.30E-02	0.00E+00	2.36E-02	0.00E+00	0.00E+00	0.00E+00	1.78E-03	1.59E-05	4.39E-07	5.14E-04	8.13E-08
react	108	5.64028	-1.68226	0.000433959	0.0888445	0.999995	5.88E-14	5.09E-11	3.78E-07	0.00E+00	4.83E-05	0.00E+00	1.39E-02	0.00E+00	2.23E-02	0.00E+00	7.73E-08	6.33E-08	2.07E-03	1.59E-05	2.47E-04	5.65E-04	6.91E-05
react	109	5.48481	-1.45204	0.000281547	0.086573	0.999997	-1.53E-14	-1.35E-11	3.70E-07	0.00E+00	3.16E-05	0.00E+00	1.29E-02	0.00E+00	2.20E-02	0.00E+00	0.00E+00	0.00E+00	1.75E-03	1.06E-05	3.36E-04	5.38E-04	4.65E-05
react	110	5.87889	-1.93507	0.000606384	0.0846995	0.999996	1.07E-15	9.72E-13	1.93E-07	0.00E+00	4.37E-05	0.00E+00	1.31E-02	0.00E+00	2.10E-02	0.00E+00	0.00E+00	0.00E+00	1.95E-03	1.59E-05	1.26E-04	5.39E-04	7.70E-05
react	111	5.84976	-1.93368	0.000550653	0.0883936	0.999994	1.82E-10	1.56E-07	1.93E-07	0.00E+00	5.48E-05	0.00E+00	1.32E-02	0.00E+00	2.53E-02	0.00E+00	0.00E+00	1.58E-08	1.85E-03	1.59E-05	1.27E-04	5.65E-04	9.05E-05
react	112	6.13312	-2.23423	0.000750816	0.0833536	0.999997	-4.93E-13	-4.59E-10	5.76E-08	0.00E+00	4.65E-05	0.00E+00	1.28E-02	0.00E+00	1.83E-02	0.00E+00	1.16E-07	0.00E+00	1.69E-03	1.06E-05	4.86E-05	5.39E-04	7.09E-05
react	113	6.14764	-2.21651	0.00070413	0.0839029	0.999997	4.19E-12	3.90E-09	7.68E-08	0.00E+00	4.74E-05	0.00E+00	1.31E-02	0.00E+00	1.76E-02	0.00E+00	0.00E+00	0.00E+00	1.53E-03	1.59E-05	3.88E-05	5.14E-04	7.61E-05
react	114	6.49259	-2.62699	0.00120865	0.0914334	0.999998	9.95E-17	8.14E-14	3.34E-08	0.00E+00	3.72E-05	0.00E+00	1.38E-02	0.00E+00	2.76E-02	0.00E+00	0.00E+00	3.16E-08	1.81E-03	1.59E-05	6.29E-06	6.47E-04	4.62E-05
react	115	6.05394	-0.0277019	0.000759796	0.0852676	1	2.13E-15	1.91E-12	5.81E-08	0.00E+00	4.46E-05	0.00E+00	1.31E-02	0.00E+00	2.21E-02	0.00E+00	0.00E+00	2.06E-07	1.81E-03	1.06E-05	1.65E-06	5.09E-04	6.86E-05
react	116	5.68582	-1.72077	0.000401414	0.0852547	0.999994	4.38E-14	3.88E-11	4.04E-07	0.00E+00	4.83E-05	0.00E+00	1.26E-02	0.00E+00	2.44E-02	0.00E+00	5.80E-08	7.59E-07	1.80E-03	1.59E-05	2.49E-04	5.13E-04	7.58E-05
react	117	5.60921	-1.61831	0.000305805	0.0707234	0.999996	-3.33E-17	-3.87E-14	5.26E-07	0.00E+00	3.53E-05	0.00E+00	1.00E-02	0.00E+00	6.13E-03	0.00E+00	1.93E-07	1.36E-06	1.60E-03	1.59E-05	2.76E-04	3.52E-04	6.18E-05
react	118	5.58777	-1.55345	0.000313049	0.0806247	0.999996	-2.80E-14	-2.69E-11	5.71E-07	0.00E+00	4.18E-05	0.00E+00	1.19E-02	0.00E+00	1.90E-02	0.00E+00	7.73E-08	1.41E-06	1.66E-03	1.59E-05	3.23E-04	4.98E-04	8.73E-05
react	119	5.47982	-1.42553	0.000269904	0.0832723	0.999996	1.64E-13	1.55E-10	8.25E-07	0.00E+00	5.76E-05	0.00E+00	1.26E-02	0.00E+00	1.64E-02	0.00E+00	7.73E-08	1.23E-06	1.77E-03	1.59E-05	4.92E-04	4.78E-04	8.48E-05
react	120	5.69978	-1.70652	0.000437526	0.0818139	0.999997	-2.59E-15	-2.45E-12	3.77E-07	0.00E+00	3.81E-05	0.00E+00	1.20E-02	0.00E+00	1.86E-02	0.00E+00	0.00E+00	0.00E+00	1.89E-03	1.59E-05	2.19E-04	4.62E-04	6.19E-05
react	121	5.98626	-2.04639	0.000592014	0.0829259	0.999995	-7.49E-15	-7.00E-12	9.09E-08	0.00E+00	4.18E-05	0.00E+00	1.25E-02	0.00E+00	1.89E-02	0.00E+00	0.00E+00	0.00E+00	1.63E-03	1.06E-05	9.17E-05	4.87E-04	6.09E-05
react	122	5.76727	-1.80336	0.000404475	0.0825462	0.999997	6.05E-15	5.39E-12	3.55E-07	0.00E+00	4.09E-05	0.00E+00	1.22E-02	0.00E+00	3.03E-02	0.00E+00	0.00E+00	0.00E+00	1.57E-03	1.59E-05	1.93E-04	5.12E-04	7.51E-05
react	123	5.62922	-1.638	0.000417711	0.0833208	0.999996	-2.33E-14	-2.13E-11	7.07E-07	0.00E+00	4.27E-05	0.00E+00	1.27E-02	0.00E+00	2.25E-02	0.00E+00	0.00E+00	4.74E-08	2.02E-03	2.11E-05	2.53E-04	4.86E-04	8.26E-05

state	soln	Mg	Mn	Na	N(-3)	N(5)	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite
i_soln	1	0.00E+00	6.84E-05	5.36E-02	2.76E-04	1.43E-06	2.22E-07	0.00E+00	0.00E+00	2.75E-02	0.00E+00	0.00E+00	1.04E-06	5.48E-13	1.26E-09	2.81E-06	2.74E-08	9.79E-12	2.29E-12	-1.32E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	2	7.81E-03	6.11E-05	3.01E-02	0.00E+00	0.00E+00	3.42E-07	0.00E+00	0.00E+00	2.38E-02	0.00E+00	0.00E+00	1.87E-05	7.59E-13	1.66E-09	2.94E-06	3.32E-08	7.97E-12	1.13E-12	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	3	8.06E-03	7.10E-05	2.96E-02	0.00E+00	1.44E-06	2.91E-07	0.00E+00	0.00E+00	2.63E-02	0.00E+00	0.00E+00	8.47E-06	8.34E-14	2.23E-10	4.20E-07	6.44E-09	9.83E-13	1.52E-13	-1.40E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	4	7.36E-03	5.76E-05	2.93E-02	0.00E+00	2.87E-06	0.00E+00	0.00E+00	0.00E+00	2.48E-02	0.00E+00	0.00E+00	1.38E-07	7.76E-13	1.83E-09	3.50E-06	4.23E-08	8.73E-12	1.31E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	5	8.06E-03	5.91E-05	2.95E-02	0.00E+00	0.00E+00	1.03E-07	0.00E+00	9.70E-09	2.47E-02	0.00E+00	0.00E+00	1.36E-05	8.97E-13	2.12E-09	2.99E-06	4.59E-08	1.05E-11	1.49E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	6	7.98E-03	5.30E-05	2.97E-02	0.00E+00	1.43E-06	1.20E-07	0.00E+00	0.00E+00	2.42E-02	0.00E+00	0.00E+00	2.15E-07	6.38E-13	1.58E-09	4.40E-06	4.34E-08	6.50E-12	9.87E-13	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	7	7.77E-03	5.72E-08	3.03E-02	0.00E+00	0.00E+00	1.54E-10	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	1.38E-08	7.12E-16	1.44E-12	2.22E-09	2.41E-11	7.95E-15	1.16E-15	-1.61E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	8	7.77E-03	5.72E-05	2.96E-02	0.00E+00	2.15E-06	2.91E-07	0.00E+00	0.00E+00	2.57E-02	0.00E+00	0.00E+00	0.00E+00	1.01E-12	3.74E-09	8.07E-06	2.00E-07	1.25E-11	1.86E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	9	7.48E-03	5.71E-05	3.01E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	9.70E-09	2.50E-02	0.00E+00	0.00E+00	7.88E-06	9.84E-13	1.94E-09	1.74E-06	2.72E-08	1.30E-11	1.88E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	10	7.44E-03	5.71E-05	2.82E-02	0.00E+00	1.43E-06	6.85E-08	0.00E+00	0.00E+00	2.43E-02	0.00E+00	0.00E+00	3.23E-07	4.89E-13	1.73E-09	5.13E-06	8.90E-08	5.47E-12	8.15E-13	-1.32E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	11	7.65E-03	5.82E-05	3.10E-02	0.00E+00	0.00E+00	5.14E-08	0.00E+00	0.00E+00	2.39E-02	0.00E+00	0.00E+00	2.07E-06	7.56E-13	4.92E-09	2.32E-05	8.46E-07	8.28E-12	1.18E-12	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	12	6.94E-03	5.74E-05	2.85E-02	0.00E+00	0.00E+00	1.88E-07	0.00E+00	0.00E+00	2.49E-02	0.00E+00	0.00E+00	7.68E-07	3.15E-13	1.96E-09	1.16E-05	3.20E-07	3.60E-12	5.66E-13	-1.34E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	13	7.11E-03	5.49E-05	2.82E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	0.00E+00	2.55E-02	0.00E+00	0.00E+00	5.75E-06	4.10E-13	7.87E-09	1.31E-04	1.20E-05	4.87E-12	7.75E-13	-1.33E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	14	8.02E-03	5.69E-05	3.23E-02	0.00E+00	0.00E+00	8.56E-08	0.00E+00	0.00E+00	2.40E-02	0.00E+00	0.00E+00	2.24E-06	1.89E-13	2.63E-09	2.37E-05	2.04E-06	2.06E-12	2.88E-13	-1.37E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	15	7.36E-03	5.69E-05	2.93E-02	0.00E+00	0.00E+00	6.16E-07	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	1.01E-05	3.15E-15	8.43E-12	1.43E-08	2.34E-10	3.75E-14	5.40E-15	-1.54E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	16	7.27E-03	5.96E-05	2.98E-02	0.00E+00	0.00E+00	3.08E-07	0.00E+00	8.73E-08	2.30E-02	0.00E+00	0.00E+00	6.11E-06	1.02E-12	6.23E-09	2.79E-05	9.32E-07	1.11E-11	1.54E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	17	5.99E-03	5.80E-05	2.37E-02	0.00E+00	0.00E+00	8.21E-07	0.00E+00	5.33E-08	2.53E-02	8.44E-09	3.94E-07	1.69E-05	1.25E-12	9.39E-09	4.32E-05	1.93E-06	1.92E-11	3.19E-12	-1.28E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	18	7.15E-03	5.69E-05	2.70E-02	0.00E+00	7.17E-07	3.94E-07	0.00E+00	1.21E-07	2.36E-02	0.00E+00	0.00E+00	1.02E-05	9.29E-13	2.99E-09	6.59E-06	1.20E-07	1.12E-11	1.63E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	19	6.94E-03	5.39E-05	2.80E-02	0.00E+00	0.00E+00	1.37E-07	0.00E+00	1.26E-07	2.61E-02	0.00E+00	0.00E+00	7.14E-06	1.13E-12	2.57E-09	3.74E-06	5.17E-08	1.49E-11	2.38E-12	-1.29E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	20	6.98E-03	5.12E-05	2.85E-02	0.00E+00	0.00E+00	5.13E-08	0.00E+00	9.70E-09	2.43E-02	0.00E+00	0.00E+00	5.56E-06	6.66E-13	1.86E-09	3.73E-06	5.74E-08	8.14E-12	1.22E-12	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	21	7.19E-03	5.38E-05	2.81E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	0.00E+00	2.45E-02	0.00E+00	0.00E+00	7.19E-06	5.26E-13	4.45E-09	3.70E-05	1.36E-06	5.86E-12	9.06E-13	-1.32E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	22	7.35E-03	5.63E-05	2.81E-02	0.00E+00	0.00E+00	3.42E-08	0.00E+00	0.00E+00	1.88E-02	0.00E+00	0.00E+00	2.59E-06	6.14E-13	2.06E-09	5.97E-06	9.62E-08	5.33E-12	6.11E-13	-1.31E+01	0.00E+00	0.00E+00	0.00E+00
i_soln	23	7.19E-03	5.78E-05	2.79E-02	2.46E-04	0.00E+00	3.42E-08	0.00E+00	9.70E-09	2.31E-02	0.00E+00	0.00E+00	3.87E-06	8.03E-13	2.04E-09	3.20E-06	5.05E-08	9.36E-12	1.29E-12	-1.30E+01	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	6.84E-05	5.36E-02	2.77E-04	0.00E+00	2.22E-07	0.00E+00	0.00E+00	2.75E-02	0.00E+00	0.00E+00	1.04E-06	2.61E-15	3.45E-13	4.45E-11	2.50E-14	4.65E-14	1.09E-14	-1.55E+01	0.00E+00	0.00E+00	0.00E+00
react	102	7.81E-03	6.11E-05	3.01E-02	0.00E+00	0.00E+00	3.42E-07	0.00E+00	0.00E+00	2.38E-02	0.00E+00	0.00E+00	1.87E-05	1.21E-18	1.14E-15	8.67E-13	4.22E-15	1.27E-17	1.82E-18	-1.89E+01	0.00E+00	0.00E+00	0.00E+00
react	103	8.06E-03	7.10E-05	2.96E-02	1.86E-05	2.47E-08	2.91E-07	0.00E+00	0.00E+00	2.63E-02	0.00E+00	0.00E+00	8.47E-06	1.03E-18	2.81E-15	5.45E-12	8.55E-14	1.21E-17	1.87E-18	-1.89E+01	0.00E+00	0.00E+00	0.00E+00
react	104	7.36E-03	5.76E-05	2.93E-02	5.02E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-02	0.00E+00	0.00E+00	1.38E-07	2.35E-18	1.88E-15	1.21E-12	4.95E-15	2.66E-17	4.01E-18	-1.86E+01	0.00E+00	0.00E+00	0.00E+00
react	105	8.06E-03	5.91E-05	2.95E-02	0.00E+00	0.00E+00	1.03E-07	0.00E+00	9.70E-09	2.47E-02	0.00E+00	0.00E+00	1.36E-05	1.50E-18	1.43E-15	8.08E-13	4.97E-15	1.76E-17	2.52E-18	-1.88E+01	0.00E+00	0.00E+00	0.00E+00
react	106	7.98E-03	5.30E-05	2.97E-02	2.87E-06	0.00E+00	1.20E-07	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	2.15E-07	6.57E-19	6.88E-16	8.08E-13	3.36E-15	6.72E-18	1.02E-18	-1.91E+01	0.00E+00	0.00E+00	0.00E+00
react	107	7.77E-03	5.72E-08	3.03E-02	0.00E+00	0.00E+00	1.54E-10	0.00E+00	0.00E+00	2.41E-02	0.00E+00	0.00E+00	1.38E-08	1.59E-18	3.22E-15	4.97E-12	5.40E-14	1.78E-17	2.58E-18	-1.87E+01	0.00E+00	0.00E+00	0.00E+00
react	108	7.77E-03	5.72E-05	2.96E-02	2.15E-06	0.00E+00	2.91E-07	0.00E+00	0.00E+00	2.57E-02	0.00E+00	0.00E+00	0.00E+00	9.43E-19	1.04E-15	6.61E-13	4.83E-15	1.17E-17	1.76E-18	-1.90E+01	0.00E+00	0.00E+00	0.00E+00
react	109	7.48E-03	5.71E-05	3.01E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	9.70E-09	2.50E-02	0.00E+00	0.00E+00	7.88E-06	2.47E-18	2.15E-15	8.52E-13	5.89E-15	3.28E-17	4.75E-18	-1.85E+01	0.00E+00	0.00E+00	0.00E+00
react	110	7.44E-03	5.71E-05	2.82E-02	1.43E-06	0.00E+00	6.85E-08	0.00E+00	0.00E+00	2.42E-02	0.00E+00	0.00E+00	3.23E-07	2.21E-19	3.56E-16	4.84E-13	3.83E-15	2.49E-18	3.71E-19	-1.96E+01	0.00E+00	0.00E+00	0.00E+00
react	111	7.65E-03	5.82E-05	3.10E-02	0.00E+00	0.00E+00	5.14E-08	0.00E+00	0.00E+00	2.39E-02	0.00E+00	0.00E+00	2.07E-06	2.47E-19	3.95E-16	4.59E-13	4.10E-15	2.73E-18	3.91E-19	-1.95E+01	0.00E+00	0.00E+00	0.00E+00
react	112	6.94E-03	5.74E-05	2.85E-02	0.00E+00	0.00E+00	1.88E-07	0.00E+00	0.00E+00	2.49E-02	0.00E+00	0.00E+00	7.68E-07	3.96E-20	1.08E-16	2.83E-13	3.43E-15	4.55E-19	7.16E-20	-2.03E+01	0.00E+00	0.00E+00	0.00E+00
react	113	7.11E-03	5.49E-05	2.82E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	0.00E+00	2.55E-02	0.00E+00	0.00E+00	5.75E-06	3.46E-20	1.03E-16	2.63E-13	3.73E-15	4.14E-19	6.60E-20	-2.04E+01	0.00E+00	0.00E+00	0.00E+00
react	114	8.02E-03	5.69E-05	3.23E-02	0.00E+00	0.00E+00	8.56E-08	0.00E+00	0.00E+00	2.40E-02	0.00E+00	0.00E+00	2.24E-06	2.66E-21	1.96E-17	9.30E-14	4.23E-15	2.91E-20	4.06E-21	-2.15E+01	0.00E+00	0.00E+00	0.00E+00
react	115	7.36E-03	5.69E-05	2.93E-02	0.00E+00	0.00E+00	6.16E-07	0.00E+00	0.00E+00	2.40E-02	0.00E+00	0.00E+00	1.01E-05	2.73E-19	7.56E-16	1.32E-12	2.24E-14	3.25E-18	4.68E-19	-1.95E+01	0.00E+00	0.00E+00	0.00E+00
react	116	7.27E-03	5.96E-05	2.98E-02	7.17E-07	0.00E+00	3.08E-07	0.00E+00	8.73E-08	2.30E-02	0.00E+00	0.00E+00	6.11E-06	7.85E-19	8.65E-16	7.01E-13	4.22E-15	8.61E-18	1.20E-18	-1.90E+01	0.00E+00	0.00E+00	0.00E+00
react	117	5.99E-03	5.80E-05	2.37E-02	0.00E+00	0.00E+00	8.21E-07	0.00E+00	5.33E-08	2.51E-02	8.44E-09	3.94E-07	1.69E-05	1.08E-18	1.16E-15	7.53E-13	4.75E-15	1.69E-17	2.81E-18	-1.88E+01	0.00E+00	0.00E+00	0.00E+00
react	118	7.15E-03	5.69E-05	2.70E-02	5.74E-06	0.00E+00	3.94E-07	0.00E+00	1.21E-07	2.36E-02	0.00E+00	0.00E+00	1.02E-05	1.51E-18	1.40E-15	8.84E-13	4.62E-15	1.83E-17	2.67E-18	-1.87E+01	0.00E+00	0.00E+00	0.00E+00
react	119	6.94E-03	5.40E-05	2.80E-02	0.00E+00	0.00E+00	1.37E-07	0.00E+00	1.26E-07	2.61E-02	0.00E+00	0.00E+00	7.14E-06	3.14E-18	2.33E-15	1.10E-12	4.91E-15	4.19E-17	6.68E-18	-1.84E+01	0.00E+00	0.00E+00	0.00E+00
react	120	6.98E-03	5.12E-05	2.85E-02	0.00E+00	0.00E+00	5.13E-08	0.00E+00	9.70E-09	2.42E-02	0.00E+00	0.00E+00	5.56E-06	6.99E-19	8.16E-16	6.81E-13	4.37E-15	8.58E-18	1.29E-18	-1.91E+01	0.00E+00	0.00E+00	0.00E+00
react	121	7.19E-03	5.38E-05	2.81E-02	0.00E+00	0.00E+00	6.85E-08	0.00E+00	0.00E+00	2.44E-02	0.00E+00	0.00E+00	7.19E-06	1.14E-19	2.20E-16	4.17E-13	3.49E-15	1.28E-18	1.99E-19	-1.99E+01	0.00E+00	0.00E+00	0.00E+00
react	122	7.35E-03	5.63E-05	2.81E-02	0.00E+00	0.00E+00	3.42E-08	0.00E+00	0.00E+00	1.88E-02	0.00E+00	0.00E+00	2.59E-06	4.85E-19	6.03E-16	6.45E-13	3.83E-15	4.23E-18	4.85E-19	-1.92E+01	0.00E+00	0.00E+00	0.00E+00
react	123	7.19E-03	5.78E-05	2.79E-02	2.46E-04	0.00E+00	3.42E-08	0.00E+00	9.70E-09	2.31E-02	0.00E+00	0.00E+00	3.87E-06	1.05E-18	1.11E-15	7.25E-13	4.76E-15	1.23E-17	1.70E-18	-1.89E+01	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	CoFe2O4	d_CoFe2O4	Magnesioferrite	d_Magnesioferrite	Hercynite	d_Hercynite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	H-Jarosite	d_H-Jarosite	Na-Jarosite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	7.21E-06	7.21E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	6.40E-05	5.68E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	-6.40E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	1.42E-04	1.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	2.06E-04	6.38E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	2.72E-04	6.65E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	2.72E-04	1.16E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	3.75E-04	1.03E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	4.21E-04	4.62E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	4.89E-04	6.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	6.05E-04	1.17E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	6.68E-04	6.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	7.96E-04	1.28E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	8.38E-04	4.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	8.38E-04	4.93E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	9.70E-04	1.32E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	1.15E-03	1.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	1.23E-03	7.99E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	1.29E-03	5.78E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	1.35E-03	6.50E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	1.46E-03	1.09E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	1.52E-03	6.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	1.59E-03	6.56E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	2.76E-07	2.76E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	2.37E-07	-3.83E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	1.39E-07	-9.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	8.47E-07	7.08E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	1.34E-06	4.91E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	1.29E-06	-4.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	1.79E-06	4.95E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	3.03E-06	1.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	3.22E-06	1.84E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	3.90E-06	6.80E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	4.13E-06	2.29E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	4.47E-06	3.47E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.47E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-05	1.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	5.06E-06	5.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.49E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	5.42E-06	3.62E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	6.46E-05	5.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	8.04E-05	1.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	1.16E-04	3.57E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	1.17E-04	7.43E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	1.18E-04	1.58E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	1.20E-04	1.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	1.22E-04	2.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	MnHPO4	d_MnHPO4	Barite	d_Barite	Celestite	d_Celestite	Anglesite	d_Anglesite	Halite	d_Halite	Fluorite	d_Fluorite	Hydroxylapatite	d_Hydroxylapatite	FCO3Apatite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.37E-08	8.37E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-07	1.15E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-07	2.82E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-07	4.39E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.68E-07	9.77E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.21E-07	-4.71E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-07	1.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.61E-07	3.47E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-07	5.06E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.58E-07	4.63E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.49E-07	9.09E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.88E-07	3.92E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.23E-07	3.56E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.47E-07	2.38E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-06	6.46E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-06	1.28E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-06	9.96E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.76E-06	1.39E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-06	2.81E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.83E-06	4.67E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.87E-06	3.08E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.90E-06	3.67E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_FCO3Apatite	Ba3(AsO4)2	d_Ba3(AsO4)2	Cu2Se(alpha)	d_Cu2Se(alpha)	CuSe	d_CuSe	Fe(VO3)2	d_Fe(VO3)2	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5775	-1.7532	-3.2071	-3.7497	-2.8343	-10.8026	-5.5794
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5073	-1.6802	-3.0667	-3.6046	-2.8002	-10.5183	-5.5144
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5142	-1.6901	-3.1016	-3.6444	-2.7912	-10.6127	-5.537
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5574	-1.7268	-3.121	-3.6529	-2.8493	-10.5765	-5.525
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4554	-1.6382	-2.9564	-3.511	-2.616	-10.3038	-5.438
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.6776	-1.8521	-3.3835	-3.924	-2.9262	-11.1301	-5.6579
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.2305	-1.3993	-2.4809	-3.0116	-2.5446	-9.3091	-5.2129
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.8265	-1.9903	-3.6268	-4.1488	-3.1593	-11.548	-5.7719
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.2448	-1.4215	-2.5503	-3.0947	-2.4971	-9.499	-5.2534
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.9042	-1.0777	-1.8425	-2.3813	-2.172	-8.0526	-4.8923
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.9528	-1.1323	-2.003	-2.5521	-2.2072	-8.4447	-4.9931
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.3994	-0.5767	-0.881	-1.4264	-1.6659	-6.1826	-4.4283
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.4886	-0.6596	-0.9945	-1.5291	-1.7716	-6.3367	-4.4645
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5146	-1.6854	-3.0604	-3.5945	-2.815	-10.4819	-5.5047
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.9696	-1.1435	-1.9791	-2.5185	-2.2383	-8.3319	-4.9626
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.0731	-1.2435	-2.1415	-2.6749	-2.3423	-8.6077	-5.0274
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4603	-1.6329	-2.9327	-3.4698	-2.7184	-10.2095	-5.4278
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.6679	-1.8388	-3.3745	-3.9088	-2.9737	-11.1177	-5.665
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4885	-1.6619	-3.0075	-3.5461	-2.7541	-10.3788	-5.4729
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.7945	-0.9745	-1.6653	-2.2153	-2.0208	-7.7489	-4.8127
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.3592	-1.5365	-2.7633	-3.3086	-2.5893	-9.9098	-5.3511
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5169	-1.6871	-3.06	-3.5932	-2.8184	-10.4754	-5.5028
react	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999
react	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.2001	-2.3758	-4.4525	-4.9951	-3.4571	-13.2936	-6.2022
react	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-04	2.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4908	-1.6637	-3.0338	-3.5716	-2.7837	-10.4524	-5.4979
react	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.3202	-2.4961	-4.7138	-5.2566	-3.5974	-13.8375	-6.3432
react	105	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.2369	-2.4064	-4.4804	-5.0122	-3.5291	-13.2954	-6.2047
react	106	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.0745	-2.2572	-4.1947	-4.7493	-3.2352	-12.7806	-6.0573
react	107	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.6772	-1.8517	-3.3827	-3.9233	-2.9258	-11.1286	-5.6575
react	108	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.1036	-2.2724	-4.2275	-4.7582	-3.418	-12.8025	-6.0863
react	109	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.4516	-2.6154	-4.8772	-5.3992	-3.7846	-14.049	-6.3972
react	110	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.7858	-1.9626	-3.6326	-4.177	-3.0383	-11.6639	-5.7946
react	111	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.8318	-2.0053	-3.6982	-4.237	-3.1	-11.7643	-5.8203
react	112	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.468	-1.6474	-3.0335	-3.5826	-2.7225	-10.5058	-5.5084
react	113	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4717	-1.649	-3.0259	-3.5712	-2.7385	-10.4727	-5.5009
react	114	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.8389	-1.0099	-1.6953	-2.2298	-2.122	-7.7383	-4.815
react	115	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4925	-1.6633	-3.0162	-3.5503	-2.7929	-10.3935	-5.4826
react	116	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.1407	-2.3146	-4.3217	-4.8611	-3.4099	-13.0176	-6.1342
react	117	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.4232	-2.5936	-4.8423	-5.3757	-3.6929	-14.0098	-6.378
react	118	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.371	-2.5435	-4.7544	-5.2915	-3.6295	-13.8534	-6.3388
react	119	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.5206	-2.6915	-5.0803	-5.6146	-3.8268	-14.5296	-6.5181
react	120	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.1227	-2.2961	-4.276	-4.8146	-3.3885	-12.916	-6.1073
react	121	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.7265	-1.9065	-3.5296	-4.0796	-2.9531	-11.4777	-5.745
react	122	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.0609	-2.2382	-4.1669	-4.7122	-3.2913	-12.7173	-6.053
react	123	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.1629	-2.3332	-4.3523	-4.8856	-3.4648	-13.0604	-6.1491

state	soln	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite	si_CoFe2O4	si_Magnesioferrite	si_Hercynite	si_Cupricferrite	si_Cuprousferrite	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)
i_soln	1	-999.999	-999.999	4.5072	3.6109	11.4149	3.6272	14.5749	-5.5838	-2.2467	1.8066	-999.999	-999.999	4.1371	7.92	10.4672	-1.1172	2.6412	-999.999	-999.999	-1.3506	1.2908	-1.2762
i_soln	2	-10.4071	-22.7566	4.5452	3.5584	11.4995	3.6008	14.7124	-5.6156	-2.3313	1.8581	-999.999	2.7221	3.9812	7.2883	9.7025	-1.2221	2.1645	3.9924	3.647	-1.715	0.2388	-1.3874
i_soln	3	-10.1561	-22.2927	3.8027	1.9885	10.0198	2.8159	12.4136	-6.4903	-4.7759	1.1245	-999.999	1.4661	-999.999	6.5265	9.5346	-3.5791	-0.1969	1.6232	-999.999	-999.999	-999.999	-999.999
i_soln	4	-10.3378	-22.5606	4.6507	3.7714	11.7103	3.7074	14.999	-5.5383	-2.0409	1.9634	-999.999	2.9588	2.7938	-999.999	-999.999	-0.9773	2.4291	4.2686	1.7135	-2.3801	-2.3148	-2.0189
i_soln	5	-10.2559	-22.4019	4.6179	3.5134	11.657	3.5783	14.9353	-5.6751	-2.4359	1.9508	-999.999	3.061	4.6926	-999.999	-999.999	-0.7863	2.437	4.2981	4.5614	-1.5056	0.8653	-1.0741
i_soln	6	-10.183	-22.153	4.737	4.1528	11.8693	3.8981	15.1953	-5.364	-1.4852	2.0276	-999.999	3.0807	4.4148	8.1262	10.4496	-1.1735	2.4662	4.3356	4.0537	-1.5714	1.4755	-1.2163
i_soln	7	-10.561	-23.1384	1.3932	-2.7823	5.1977	0.4305	5.3013	-8.7487	-11.8051	-1.2901	-999.999	-3.6389	-4.9462	-999.999	-999.999	-10.4384	-7.1222	-5.325	-4.9688	-4.5469	-11.4261	-4.2983
i_soln	8	-9.5708	-20.7765	5.2489	4.7553	12.9203	4.1993	16.6356	-5.2512	-0.7699	2.584	-999.999	4.7062	5.5286	9.8314	11.1619	0.3969	3.7977	5.616	4.5699	-1.6844	1.2269	-0.8756
i_soln	9	-10.6837	-23.5343	4.3296	2.7641	11.0915	3.2037	14.1876	-5.9706	-3.4805	1.6808	-999.999	2.3914	4.963	-999.999	-999.999	-0.9916	1.987	3.7521	5.43	-1.1514	1.3975	-0.8566
i_soln	10	-9.7083	-21.0865	4.984	4.4669	12.375	4.0551	15.8227	-5.3604	-1.1675	2.2937	-999.999	3.9565	4.2909	-999.999	-999.999	-0.717	2.8728	4.7338	3.2076	-2.047	0.1093	-1.3483
i_soln	11	-8.7786	-19.0523	5.9271	6.254	14.2675	4.9487	18.3989	-4.7417	1.2382	3.2471	-999.999	6.4617	6.4045	10.9936	11.5048	1.1608	4.9662	6.7891	4.5045	-1.9234	2.0903	-0.6385
i_soln	12	-9.0057	-19.6205	5.5695	5.7192	13.5406	4.6813	17.3197	-4.9755	0.4698	2.8706	-999.999	5.5282	5.1187	-999.999	-999.999	-0.0332	3.8845	5.7546	3.2776	-2.2399	0.8974	-1.0959
i_soln	13	-7.4446	-16.3515	7.1214	8.7586	16.6487	6.201	21.4971	-3.9485	4.5362	4.4293	-999.999	9.6614	5.9718	-999.999	-999.999	2.7837	7.1245	8.9663	1.4609	-3.3429	-0.717	-1.2073
i_soln	14	-7.6526	-16.627	6.2827	6.8902	14.9838	5.2667	19.1461	-4.7601	1.8559	3.6107	-999.999	7.9097	5.7252	12.5996	12.3665	1.0018	5.0844	6.9327	2.4594	-2.9795	-0.2495	-0.9975
i_soln	15	-10.1817	-22.2753	2.3393	-1.0051	7.0974	1.3191	8.0446	-7.9806	-9.2597	-0.3318	-999.999	-1.462	1.0636	4.2381	8.6697	-7.8702	-4.5632	-2.7716	2.4096	-2.2334	-1.6969	-1.721
i_soln	16	-8.9329	-19.4202	5.973	6.357	14.3586	5.0002	18.5681	-4.6562	1.4267	3.2919	-999.999	6.4639	6.1218	12.7204	13.2274	1.3924	5.159	6.96	4.0048	-2.0439	1.4612	-0.8183
i_soln	17	-8.9534	-19.6143	6.2509	6.8069	14.9211	5.2252	19.3576	-4.4985	2.0349	3.5812	-999.999	7.1176	10.5969	13.9937	14.0821	2.326	5.9558	7.7406	10.245	0.0062	9.5774	1.3007
i_soln	18	-9.9759	-21.8506	5.0676	4.5057	12.5504	4.0746	16.1466	-5.2961	-1.0642	2.3909	-999.999	4.0958	8.4976	10.7373	12.4073	-0.059	3.3392	5.1757	9.3902	0.0356	7.9072	0.6743
i_soln	19	-10.5234	-23.0994	4.6852	3.6916	11.7888	3.6675	15.1528	-5.5606	-2.1429	2.0137	-999.999	3.0459	8.7407	9.6826	11.8433	-0.466	2.7527	4.5652	10.6029	0.5857	9.0269	0.9094
i_soln	20	-10.1563	-22.1718	4.7574	3.9112	11.9284	3.7773	15.2694	-5.5343	-1.897	2.0779	-999.999	3.327	4.9809	-999.999	-999.999	-0.7746	2.6131	4.385	4.657	-1.4574	1.5968	-0.9551
i_soln	21	-8.5402	-18.6172	6.2039	7.0045	14.8085	5.3239	19.0852	-4.4671	2.2635	3.5033	-999.999	7.0739	7.1789	-999.999	-999.999	1.2876	5.3504	7.1859	5.1618	-1.7307	3.798	-0.3138
i_soln	22	-9.8279	-21.5022	5.0233	4.5604	12.4527	4.1018	15.9626	-5.2884	-1.0021	2.3314	-999.999	4.0058	5.9804	-999.999	-999.999	-0.7525	2.8295	4.6742	5.4821	-1.2927	3.3474	-0.5339
i_soln	23	-10.232	-22.317	4.6679	3.6377	11.7556	3.6405	15.0586	-5.6344	-2.2707	1.9984	-999.999	3.1505	5.5834	8.2021	10.3198	-0.7913	2.4553	4.2442	5.6745	-1.1219	2.6184	-0.6398
react	101	-999.999	-999.999	-1.5325	-8.4685	-0.6645	-2.4125	0	-8.0793	-16.8215	-4.2331	-999.999	-999.999	-5.5112	-7.2158	4.9152	-14.2809	-11.7614	-999.999	-999.999	-2.4493	-10.537	-4.8526
react	102	-11.7626	-25.9804	-2.3512	-10.2346	-2.2935	-3.2956	0	-6.535	-17.0437	-5.0384	-999.999	-11.8035	-0.1036	-13.0849	2.2029	-20.4437	-17.4236	-15.5959	0	-2.5638	-5.3581	-2.9701
react	103	-10.1186	-22.2057	-1.0743	-7.7654	0.2659	-2.0611	-4.9855	-14.1355	-22.175	-3.7524	-999.999	-8.2668	-6.7572	-2.815	2.3019	-18.2514	-14.8587	-13.0386	0	-3.0366	-4.7398	-2.5288
react	104	-12.0868	-26.7284	-2.2808	-10.0915	-2.1527	-3.2241	0	-6.6744	-17.0399	-4.9681	-999.999	-11.8469	-0.4294	-999.999	-999.999	-19.8831	-16.9482	-15.1086	0	-2.4793	-5.5447	-3.0624
react	105	-11.7293	-25.9147	-2.3475	-10.4174	-2.2738	-3.3871	0	-6.6796	-17.3711	-5.0146	-999.999	-11.6634	-0.1478	-999.999	-999.999	-20.0926	-17.2662	-15.4057	0	-2.6286	-6.0115	-2.992
react	106	-11.5515	-25.3792	-2.3741	-10.0692	-2.3527	-3.213	0	-6.3372	-16.6805	-5.0834	-999.999	-11.8906	-0.0118	-13.6013	1.9709	-21.0051	-17.7401	-15.8712	0	-2.5474	-4.6804	-2.943
react	107	-10.5602	-23.1365	-1.2571	-8.0829	-0.1029	-2.2198	0	-8.7495	-17.1064	-3.9404	-999.999	-8.9391	-1.634	-999.999	-999.999	-18.3902	-15.0738	-13.2766	0	-2.8909	-4.8007	-2.6419
react	108	-11.5029	-25.329	-2.367	-10.4764	-2.3114	-3.4165	0	-6.6551	-17.4055	-5.0319	-999.999	-11.5841	0.017	-13.5958	1.5625	-20.3291	-17.4578	-15.6399	0	-2.6775	-5.9277	-2.9294
react	109	-12.019	-26.7455	-2.3354	-10.5658	-2.2384	-3.4612	0	-6.8283	-17.6681	-4.9842	-999.999	-11.6485	-0.2253	-999.999	-999.999	-19.5645	-16.941	-15.1769	0	-2.6057	-6.5526	-3.0219
react	110	-10.9312	-23.9332	-2.3823	-10.2657	-2.3576	-3.3112	0	-6.4505	-16.9901	-5.0726	-999.999	-11.4577	0.3789	-999.999	-999.999	-21.4495	-18.2007	-16.3398	0	-2.7748	-4.8513	-2.7592
react	111	-10.9261	-23.9839	-2.3872	-10.3745	-2.361	-3.3656	0	-6.5121	-17.1607	-5.0672	-999.999	-11.3863	0.4089	-14.6071	0.7624	-21.3381	-18.1427	-16.3205	0	-2.8141	-5.1381	-2.7511
react	112	-10.2343	-22.3949	-2.4008	-10.2213	-2.3999	-3.289	0	-6.3547	-16.8499	-5.0997	-999.999	-11.1256	0.8395	-999.999	-999.999	-22.5148	-18.9537	-17.0839	0	-2.9753	-4.1879	-2.5459
react	113	-10.141	-22.2657	-2.3872	-10.2587	-2.3686	-3.3077	0	-6.4283	-16.9609	-5.0793	-999.999	-10.9798	0.8916	-999.999	-999.999	-22.4902	-18.9615	-17.12	0	-3.0171	-4.2917	-2.5075
react	114	-8.5575	-18.5833	-2.4008	-10.4768	-2.3833	-3.4168	0	-6.5392	-17.2903	-5.0728	-999.999	-10.0118	0.9931	-14.1035	1.2513	-23.9379	-20.1325	-18.2812	-1.1335	-3.9006	-5.6	-2.474
react	115	-10.1316	-22.1589	-1.6802	-9.044	-0.9415	-2.7003	0	-7.9863	-17.3043	-4.3512	-999.999	-9.473	-0.5175	-7.5737	4.8911	-19.9847	-16.6637	-14.8764	0	-3.0492	-4.8758	-2.5087
react	116	-11.5916	-25.5936	-2.3714	-10.3317	-2.3301	-3.3442	0	-6.5356	-17.1414	-5.0525	-999.999	-11.7119	0.0818	-12.4142	2.9022	-20.6604	-17.6376	-15.8371	0	-2.634	-5.3697	-2.8985
react	117	-12.004	-26.7168	-2.358	-10.4109	-2.2967	-3.3837	0	-6.6383	-17.3227	-5.0277	-999.999	-11.8002	-0.0316	-11.8533	3.3131	-20.0948	-17.3153	-15.5981	0	-2.5352	-5.697	-2.9436
react	118	-11.9706	-26.5786	-2.3465	-10.3224	-2.2777	-3.3395	0	-6.6145	-17.2108	-5.0232	-999.999	-11.816	-0.1576	-11.043	4.1367	-20.1307	-17.2744	-15.4515	0	-2.5475	-5.681	-2.9941
react	119	-12.356	-27.4914	-2.3377	-10.3541	-2.2569	-3.3554	0	-6.6677	-17.2958	-5.0092	-999.999	-11.9794	-0.395	-11.0539	4.0454	-19.5733	-16.8445	-15.0633	0	-2.448	-6.0496	-3.1049
react	120	-11.5506	-25.4692	-2.3613	-10.3262	-2.309	-3.3414	0	-6.5663	-17.1664	-5.0408	-999.999	-11.6703	0.0829	-999.999	-999.999	-20.6079	-17.6002	-15.8292	0	-2.629	-5.3739	-2.8881
react	121	-10.759	-23.6329	-2.3879	-10.1791	-2.3751	-3.2679	0	-6.3687	-16.8217	-5.0885	-999.999	-11.3962	0.5475	-999.999	-999.999	-21.9099	-18.4905	-16.6565	0	-2.8067	-4.3726	-2.6786
react	122	-11.3945	-25.1747	-2.3763	-10.2388	-2.3465	-3.2977	0	-6.4519	-16.9647	-5.0682	-999.999	-11.6581	0.2963	-999.999	-999.999	-21.2187	-18.0692	-16.2257	0	-2.6868	-4.8275	-2.7942
react	123	-11.6393	-25.6634	-2.3578	-10.4139	-2.296	-3.3853	0	-6.6414	-17.3293	-5.0274	-999.999	-11.6621	0.0317	-13.0436	2.1187	-20.3438	-17.4778	-15.6907	0	-2.6318	-5.7085	-2.9121

state	soln	si_Gibbsite	si_Boehmite	si_Diaspore	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite
i_soln	1	1.2328	0.9464	2.6514	-14.0805	-8.0905	-19.3303	-7.9945	-15.5559	-999.999	-999.999	-999.999	-999.999	-3.6818	-3.9193	-28.5837	-7.2717	-7.1674	-999.999	-9.488	-12.6438	-7.5566	-999.999
i_soln	2	1.105	0.8424	2.5319	-13.9853	-8.2444	-19.3043	-8.0053	-15.5021	-1.9457	-0.0848	-0.3247	-2.7902	-4.4781	-4.109	-28.7851	-7.2573	-7.1611	-999.999	-9.6682	-11.4258	-8.5016	-1.4078
i_soln	3	-999.999	-999.999	-999.999	-13.5033	-8.0127	-18.3746	-7.7657	-14.8007	-1.8434	-0.032	-0.2662	-2.7612	-4.5131	-5.0799	-30.4313	-7.3065	-7.2157	-999.999	-9.533	-11.6949	-7.9266	-2.3422
i_soln	4	0.4738	0.2108	1.9005	-13.8947	-8.179	-19.1456	-7.9716	-15.3773	-1.8961	-0.0711	-0.3112	-2.7967	-4.475	-4.0666	-28.6827	-999.999	-999.999	-999.999	-9.6695	-13.5428	-999.999	-1.3166
i_soln	5	1.3938	1.1663	2.8327	-13.7008	-8.3571	-18.9512	-7.9356	-15.1934	-1.9549	-0.0789	-0.3059	-2.7919	-4.6096	-4.1302	-28.2387	-7.7852	-7.7009	-999.999	-9.5786	-11.4336	-999.999	-1.3717
i_soln	6	1.3033	1.0018	2.7167	-14.0324	-7.9379	-19.238	-7.9877	-15.4814	-1.8289	-0.1014	-0.3556	-2.7407	-4.3303	-4.0422	-29.2743	-7.6854	-7.576	-999.999	-9.8154	-13.4913	-8.1022	-1.2505
i_soln	7	-1.8106	-2.0665	-0.3815	-17.128	-11.4191	-28.6516	-11.1008	-21.7491	-5.0513	-0.0936	-0.331	-2.7853	-4.4823	-7.1357	-34.7153	-10.5935	-10.4997	-999.999	-12.6609	-14.5229	-999.999	-4.5177
i_soln	8	1.5897	1.3658	3.0298	-12.914	-7.8052	-17.4161	-7.5577	-14.0335	-1.6418	-0.0634	-0.289	-2.7956	-4.6003	-4.0686	-28.0337	-7.3228	-7.2398	-999.999	-9.565	-999.999	-7.8192	-0.9943
i_soln	9	1.5891	1.3933	3.0388	-13.8881	-8.7919	-19.5158	-8.0922	-15.5784	-2.2108	-0.1022	-0.3175	-2.8311	-4.6909	-4.1599	-27.7585	-7.9554	-7.8819	-999.999	-9.4862	-11.5453	-999.999	-1.6082
i_soln	10	1.1481	0.8798	2.5729	-13.2361	-7.6356	-17.7957	-7.6313	-14.3716	-1.6126	-0.084	-0.3261	-2.789	-4.4909	-4.2476	-29.1368	-7.9382	-7.84	-999.999	-9.6855	-13.194	-999.999	-1.2219
i_soln	11	1.8452	1.5951	3.2763	-12.0565	-6.9183	-15.5396	-7.0747	-12.659	-1.2824	-0.0977	-0.333	-2.8042	-4.4911	-4.1416	-28.6388	-8.0888	-7.997	-999.999	-9.6508	-12.3365	-8.5084	-0.7389
i_soln	12	1.411	1.1276	2.8307	-12.3345	-6.8213	-15.9057	-7.1522	-12.9715	-1.2998	-0.0755	-0.3232	-2.7942	-4.4077	-4.3687	-29.6068	-7.4795	-7.3763	-999.999	-9.7047	-12.8587	-999.999	-1.0782
i_soln	13	1.2913	1.0198	2.715	-10.3355	-5.437	-11.9988	-6.1863	-10.0219	-0.778	-0.066	-0.3092	-2.7875	-4.4519	-4.2852	-29.2362	-7.9224	-7.8232	-999.999	-9.6884	-11.9427	-999.999	-0.4361
i_soln	14	1.4765	1.2403	2.9124	-10.6651	-6.0056	-12.8504	-6.4119	-10.6226	-0.9045	-0.0901	-0.3202	-2.8011	-4.5158	-4.8012	-29.737	-7.8849	-7.7977	-999.999	-9.6361	-12.2637	-8.3011	-0.9733
i_soln	15	0.7519	0.5171	2.1883	-13.5515	-8.1807	-18.6169	-7.8503	-14.9495	-1.8959	-0.0928	-0.3225	-2.8196	-4.5834	-6.5453	-33.1835	-6.9968	-6.9101	-999.999	-9.5994	-11.5831	-7.3045	-3.7392
i_soln	16	1.6668	1.4147	3.0972	-12.1799	-6.9865	-15.7533	-7.1219	-12.8269	-1.314	-0.12	-0.3561	-2.8289	-4.5264	-4.005	-28.4107	-7.3133	-7.2207	-999.999	-9.6459	-11.8765	-6.8154	-0.6481
i_soln	17	3.7722	3.5393	5.2091	-11.8176	-6.8917	-15.1317	-6.9724	-12.3406	-1.2945	-0.156	-0.3853	-2.8492	-4.7003	-3.8358	-27.6648	-6.8127	-6.7265	-999.999	-9.4964	-11.2974	-6.1515	-0.5233
i_soln	18	3.1542	2.9094	4.5871	-13.3012	-7.8987	-18.0494	-7.7017	-14.5377	-1.789	-0.1262	-0.3596	-2.8183	-4.6118	-4.0273	-28.309	-7.1803	-7.0901	-999.999	-9.6124	-11.6059	-6.3951	-1.1461
i_soln	19	3.383	3.1473	4.819	-13.8707	-8.4191	-19.279	-8.0226	-15.4399	-2.0464	-0.0794	-0.3095	-2.8122	-4.5785	-3.94	-27.944	-7.6154	-7.5284	-999.999	-9.5862	-11.7083	-6.3635	-1.3018
i_soln	20	1.5281	1.2786	2.9594	-13.6098	-8.0994	-18.6911	-7.8731	-15.0115	-1.8652	-0.1146	-0.3498	-2.818	-4.5372	-4.1484	-28.6168	-8.0563	-7.9646	-999.999	-9.6642	-11.88	-999.999	-1.3128
i_soln	21	2.1952	1.9089	3.6139	-11.8374	-6.4274	-14.921	-6.9114	-12.2297	-1.1607	-0.0894	-0.3382	-2.7824	-4.4163	-4.1455	-29.2181	-7.9245	-7.8202	-999.999	-9.7475	-11.9032	-999.999	-0.6864
i_soln	22	1.9644	1.6933	3.3883	-13.3268	-7.6731	-17.9395	-7.6606	-14.4881	-1.7149	-0.1865	-0.4295	-2.8715	-4.5902	-4.247	-29.294	-8.3172	-8.2182	-999.999	-9.7846	-12.365	-999.999	-1.2366
i_soln	23	1.8313	1.5992	3.2685	-13.6247	-8.2566	-18.7641	-7.8846	-15.0605	-1.879	-0.1152	-0.344	-2.8412	-4.6512	-4.1579	-28.3811	-8.2638	-8.178	-999.999	-9.594	-11.9961	-7.9656	-1.3283
react	101	-2.3436	-2.63	-0.925	-23.6465	-14.1124	-33.8517	-10.4722	-27.5996	-999.999	-999.999	-999.999	-999.999	-3.6819	-3.9371	-33.2301	-7.2717	-7.1674	-999.999	-9.488	-12.6437	-8.1353	-999.999
react	102	-0.4777	-0.7403	0.9492	-26.6711	-14.9532	-33.4537	-8.7371	-28.9198	-2.5676	-0.0834	-0.3233	-2.7889	-4.4771	-4.2945	-40.3764	-7.2518	-7.1556	-999.999	-9.6661	-11.5089	-14.348	-2.2174
react	103	-0.0473	-0.2943	1.3849	-7.9458	-5.2233	-12.7747	-7.7445	-9.222	-1.8267	-0.0317	-0.2659	-2.7609	-4.5127	-12.7457	-40.2473	-7.3063	-7.2155	-999.999	-9.5325	-11.6947	-7.5349	-9.9918
react	104	-0.5697	-0.8327	0.8569	-26.4272	-14.9162	-33.5619	-8.9135	-28.8517	-2.7014	-0.0693	-0.3094	-2.7951	-4.4736	-4.2584	-39.7126	-999.999	-999.999	-999.999	-9.667	-13.5402	-999.999	-2.3162
react	105	-0.5241	-0.7517	0.9148	-26.4153	-15.1106	-33.2509	-8.7282	-28.7005	-2.6337	-0.0773	-0.3043	-2.7906	-4.6085	-4.3398	-39.7847	-7.7789	-7.6946	-999.999	-9.5763	-11.5459	-999.999	-2.2624
react	106	-0.4234	-0.7248	0.9901	-27.0563	-14.824	-33.7584	-8.736	-29.2535	-2.4471	-0.0998	-0.354	-2.7392	-4.329	-4.2647	-41.2442	-7.6792	-7.5699	-999.999	-9.813	-13.8194	-14.8569	-2.0937
react	107	-0.1541	-0.41	1.275	-22.4268	-14.0683	-33.9495	-11.1003	-27.0474	-5.0509	-0.0936	-0.331	-2.7853	-4.4823	-7.1368	-40.0172	-10.5935	-10.4997	-999.999	-12.6609	-14.5229	-999.999	-4.5184
react	108	-0.4641	-0.688	0.976	-26.3951	-15.0743	-33.0114	-8.6149	-28.5717	-2.5138	-0.0608	-0.2865	-2.7934	-4.5984	-4.4117	-40.0831	-7.3129	-7.2299	-999.999	-9.5614	-999.999	-14.9539	-2.213
react	109	-0.5762	-0.772	0.8735	-26.2118	-15.3084	-33.2581	-8.8015	-28.6115	-2.8354	-0.101	-0.3163	-2.8301	-4.6901	-4.3066	-38.9555	-7.9507	-7.8772	-999.999	-9.4845	-11.6187	-999.999	-2.3812
react	110	-0.2628	-0.5312	1.162	-26.4691	-14.5925	-32.3901	-8.312	-28.2853	-2.1528	-0.0823	-0.3243	-2.7875	-4.4895	-4.6546	-41.8199	-7.9317	-7.8336	-999.999	-9.683	-13.7831	-999.999	-2.1716
react	111	-0.2674	-0.5175	1.1637	-26.3622	-14.68	-32.2809	-8.2925	-28.1825	-2.2088	-0.0949	-0.3302	-2.8018	-4.489	-4.6901	-41.6015	-8.0777	-7.9858	-999.999	-9.6466	-13.2162	-16.2585	-2.2178
react	112	-0.039	-0.3224	1.3807	-26.2291	-14.1247	-31.225	-7.8645	-27.5784	-1.8143	-0.074	-0.3216	-2.7928	-4.4064	-5.0333	-43.4035	-7.4735	-7.3703	-999.999	-9.7024	-13.8391	-999.999	-2.2594
react	113	-0.0089	-0.2804	1.4148	-26.0156	-14.0882	-30.9235	-7.8086	-27.3243	-1.8492	-0.0634	-0.3066	-2.7853	-4.45	-5.1389	-43.3753	-7.9112	-7.8119	-999.999	-9.6847	-12.4438	-999.999	-2.3647
react	114	0	-0.2362	1.4359	-25.0278	-13.464	-28.3211	-6.9658	-25.5393	-1.2544	-0.089	-0.3191	-2.8002	-4.515	-6.0248	-45.4377	-7.8803	-7.7931	-999.999	-9.6346	-13.0215	-17.0818	-2.5483
react	115	-0.0358	-0.2706	1.4005	-21.5511	-12.1666	-26.5607	-7.8224	-22.9212	-1.8738	-0.0929	-0.3226	-2.8198	-4.5836	-6.579	-41.3066	-6.9971	-6.9104	-999.999	-9.5995	-11.5832	-11.1054	-3.7507
react	116	-0.4134	-0.6656	1.017	-26.595	-14.9367	-33.139	-8.6072	-28.7274	-2.4837	-0.1166	-0.3527	-2.826	-4.5239	-4.3943	-40.6291	-7.3004	-7.2078	-999.999	-9.6411	-12.3425	-13.7711	-2.2119
react	117	-0.4722	-0.705	0.9647	-26.4532	-15.0583	-33.1622	-8.6698	-28.6736	-2.6426	-0.1525	-0.3818	-2.8462	-4.6977	-4.2726	-39.7739	-6.7997	-6.7135	-999.999	-9.4909	-11.616	-13.0778	-2.3138
react	118	-0.5142	-0.7589	0.9187	-26.5749	-15.0768	-33.4878	-8.7841	-28.8938	-2.6988	-0.1242	-0.3576	-2.8167	-4.6105	-4.2604	-39.8813	-7.1725	-7.0824	-999.999	-9.6095	-11.6893	-12.2619	-2.2918
react	119	-0.6313	-0.867	0.8047	-26.6805	-15.3132	-34.0455	-9.0009	-29.2281	-2.8983	-0.078	-0.3081	-2.8112	-4.5777	-4.0665	-39.0478	-7.6092	-7.5221	-999.999	-9.584	-11.7718	-12.0737	-2.2824
react	120	-0.4049	-0.6544	1.0264	-26.5422	-14.9451	-33.1413	-8.632	-28.7029	-2.4986	-0.1129	-0.3481	-2.8165	-4.5358	-4.419	-40.57	-8.0499	-7.9581	-999.999	-9.6617	-12.1154	-999.999	-2.2192
react	121	-0.1696	-0.456	1.249	-26.5027	-14.4026	-32.1564	-8.1965	-28.1801	-2.0915	-0.0868	-0.3355	-2.78	-4.4143	-4.7582	-42.5348	-7.9143	-7.81	-999.999	-9.7436	-12.51	-999.999	-2.2337
react	122	-0.2959	-0.567	1.128	-26.6627	-14.7729	-33.0028	-8.5243	-28.6876	-2.4158	-0.1847	-0.4277	-2.87	-4.5889	-4.5442	-41.4944	-8.3105	-8.2115	-999.999	-9.782	-12.7421	-999.999	-2.2372
react	123	-0.4411	-0.6731	0.9962	-26.4222	-15.0354	-33.0815	-8.6445	-28.618	-2.5243	-0.1135	-0.3422	-2.8397	-4.6499	-4.4025	-40.1454	-8.2571	-8.1713	-999.999	-9.5915	-12.2302	-14.3972	-2.2207

state	soln	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_MnHPO4	si_Barite	si_Celestite	si_Anglesite	si_Halite	si_Fluorite	si_Hydroxylapatite	si_FCO3Apatite	si_Ba3(AsO4)2	si_Cu2Se(alpha)	si_CuSe	si_Fe(VO3)2	si_Fe(OH)2.7Cl.3
i_soln	1	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999
i_soln	2	-2.9407	-999.999	-8.1725	-12.8954	-999.999	-7.7475	-999.999	-999.999	-999.999	-999.999	0.4366	-999.999	-999.999	-4.932	-2.448	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.7026
i_soln	3	-3.2454	-999.999	-6.9746	-10.9872	-999.999	-7.7534	-999.999	-999.999	-999.999	-999.999	0.5433	-999.999	-999.999	-5.0072	-1.7579	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	4.8805
i_soln	4	-5.0068	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	0.2093	-999.999	-999.999	-5.013	-2.034	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.7793
i_soln	5	-3.0532	-3.4327	-999.999	-999.999	-999.999	-8.2029	-999.999	-999.999	-999.999	-999.999	0.2671	-999.999	-3.3654	-4.9684	-2.2134	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.6825
i_soln	6	-4.7356	-999.999	-6.8869	-11.3655	-999.999	-8.1019	-999.999	-999.999	-999.999	-999.999	0.5247	-999.999	-999.999	-4.9855	-2.1366	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.9474
i_soln	7	-6.1518	-999.999	-999.999	-999.999	-999.999	-11.164	-999.999	-999.999	-999.999	-999.999	-2.7306	-999.999	-999.999	-4.9734	-2.0328	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	2.5341
i_soln	8	-999.999	-999.999	-6.321	-9.7434	-999.999	-7.4231	-999.999	-999.999	-999.999	-999.999	0.4924	-999.999	-999.999	-5.0166	-2.1214	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.232
i_soln	9	-3.5187	-3.7021	-999.999	-999.999	-999.999	-8.5661	-999.999	-999.999	-999.999	-999.999	0.217	-999.999	-3.358	-5.0199	-2.7497	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.3335
i_soln	10	-4.3576	-999.999	-999.999	-999.999	-999.999	-8.1063	-999.999	-999.999	-999.999	-999.999	0.328	-999.999	-999.999	-5.0517	-2.0505	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.0658
i_soln	11	-3.2077	-999.999	-6.646	-10.5949	-999.999	-7.872	-999.999	-999.999	-999.999	-999.999	0.2863	-999.999	-999.999	-4.9362	-2.0596	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.9108
i_soln	12	-3.6878	-999.999	-999.999	-999.999	-999.999	-7.3893	-999.999	-999.999	-999.999	-999.999	0.5076	-999.999	-999.999	-5.1045	-2.3655	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.593
i_soln	13	-2.2683	-999.999	-999.999	-999.999	-999.999	-7.2685	-999.999	-999.999	-999.999	-999.999	0.2868	-999.999	-999.999	-5.128	-2.0118	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	7.9667
i_soln	14	-2.774	-999.999	-5.2405	-8.4694	-999.999	-7.2369	-999.999	-999.999	-999.999	-999.999	0.2243	-999.999	-999.999	-4.8858	-2.035	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	7.1467
i_soln	15	-3.1218	-999.999	-5.7535	-8.9977	-999.999	-7.3699	-999.999	-999.999	-999.999	-999.999	0.1711	-999.999	-999.999	-5.0193	-2.4136	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	3.3902
i_soln	16	-2.7839	-1.8477	-3.3457	-5.6603	-999.999	-7.1432	-999.999	-999.999	-999.999	-999.999	1.1459	-999.999	-2.4333	-4.9655	-2.057	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.9672
i_soln	17	-2.338	-2.0603	-2.179	-3.7506	-999.999	-6.6784	-999.999	-999.999	-999.999	-999.999	0.62	-999.999	-2.5598	-5.6611	-2.8578	-999.999	-999.999	-999.999	-999.999	-999.999	1.4229	7.0049
i_soln	18	-3.023	-2.1414	-3.6387	-5.9614	-999.999	-7.4826	-999.999	-999.999	-999.999	-999.999	0.4932	-999.999	-2.2354	-5.1168	-3.1629	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.0992
i_soln	19	-3.4105	-2.3626	-4.2198	-6.6965	-999.999	-8.1568	-999.999	-999.999	-999.999	-999.999	0.6166	-999.999	-2.1934	-5.1704	-3.9707	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.7206
i_soln	20	-3.3207	-3.2658	-999.999	-999.999	-999.999	-8.4062	-999.999	-999.999	-999.999	-999.999	0.2084	-999.999	-3.3246	-5.1026	-2.2106	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.8142
i_soln	21	-2.5498	-999.999	-999.999	-999.999	-999.999	-7.667	-999.999	-999.999	-999.999	-999.999	0.327	-999.999	-999.999	-5.0959	-2.3868	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	7.1978
i_soln	22	-3.5314	-999.999	-999.999	-999.999	-999.999	-8.5018	-999.999	-999.999	-999.999	-999.999	0.1857	-999.999	-999.999	-4.8902	-2.2172	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	6.1661
i_soln	23	-3.5237	-3.3479	-7.108	-10.973	-999.999	-8.6123	-999.999	-999.999	-999.999	-999.999	0.2331	-999.999	-3.3619	-5.032	-2.1731	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	5.7232
react	101	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999
react	102	-3.6478	-999.999	-21.2231	-32.4164	-999.999	-8.3661	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.9317	-2.3942	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.0839
react	103	-3.2289	-999.999	-6.1543	-9.759	-999.999	-7.737	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0086	-1.7643	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	0
react	104	-5.812	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0113	-2.0658	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.0102
react	105	-3.8467	-5.6146	-999.999	-999.999	-999.999	-8.8777	-999.999	-999.999	-999.999	-999.999	0	-999.999	-4.8662	-4.9681	-2.0807	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1637
react	106	-5.6844	-999.999	-21.7677	-33.6218	-999.999	-8.7165	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.9852	-2.0561	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.0511
react	107	-6.1515	-999.999	-999.999	-999.999	-999.999	-11.1637	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.9734	-2.0423	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-0.1162
react	108	-999.999	-999.999	-22.5268	-33.9595	-999.999	-8.2888	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0161	-2.0693	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2248
react	109	-4.2183	-5.6796	-999.999	-999.999	-999.999	-9.1877	-999.999	-999.999	-999.999	-999.999	0	-999.999	-4.7092	-5.0196	-2.4706	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2248
react	110	-5.4894	-999.999	-999.999	-999.999	-999.999	-8.6426	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0514	-2.0297	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1981
react	111	-5.0179	-999.999	-24.2987	-36.9282	-999.999	-8.7914	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.9356	-2.0457	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2203
react	112	-5.1849	-999.999	-999.999	-999.999	-999.999	-7.9	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.1041	-2.3599	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2701
react	113	-3.8442	-999.999	-999.999	-999.999	-999.999	-8.3321	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.1275	-2.0151	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2982
react	114	-3.8832	-999.999	-23.7087	-36.0696	-999.999	-7.5837	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.8856	-2.0337	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.4536
react	115	-3.0997	-999.999	-13.3051	-20.328	-999.999	-7.348	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0193	-2.3916	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-0.6334
react	116	-4.4242	-5.2522	-19.9217	-30.3666	-999.999	-8.3048	-999.999	-999.999	-999.999	-999.999	0	-999.999	-4.6634	-4.9649	-2.0661	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1538
react	117	-4.0102	-5.464	-19.088	-28.9395	-999.999	-8.019	-999.999	-999.999	-999.999	-999.999	0	-999.999	-4.6099	-5.66	-2.1601	-999.999	-999.999	-999.999	-999.999	-999.999	-24.4888	-1.3486
react	118	-4.0191	-4.4289	-17.3703	-26.4726	-999.999	-8.3875	-999.999	-999.999	-999.999	-999.999	0	-999.999	-3.6101	-5.1163	-2.107	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1521
react	119	-4.3281	-4.5123	-17.4749	-26.516	-999.999	-9.0047	-999.999	-999.999	-999.999	-999.999	0	-999.999	-3.4889	-5.17	-2.1204	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1551
react	120	-4.192	-5.7416	-999.999	-999.999	-999.999	-9.0357	-999.999	-999.999	-999.999	-999.999	0	-999.999	-5.1645	-5.1023	-2.0838	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1904
react	121	-4.0913	-999.999	-999.999	-999.999	-999.999	-8.5914	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-5.0953	-2.3734	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.2008
react	122	-4.6119	-999.999	-999.999	-999.999	-999.999	-9.1985	-999.999	-999.999	-999.999	-999.999	0	-999.999	-999.999	-4.8898	-2.042	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1036
react	123	-4.4055	-5.8542	-21.3814	-32.3258	-999.999	-9.2534	-999.999	-999.999	-999.999	-999.999	0	-999.999	-5.2205	-5.0316	-1.84	-999.999	-999.999	-999.999	-999.999	-999.999	-999.999	-1.1883

state	soln	si_CO2(g)	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL
i_soln	1	-999.999	-42.8906	3.90E+03	1.23E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E+03	6.10E-95	6.00E-95	4.40E-95	3.01E-01	0.00E+00	7.02E-02	2.61E+01	3.76E+00	4.41E+02	0.00E+00	0.00E+00	0.00E+00	2.01E+00
i_soln	2	-1.4713	-42.4432	4.74E+03	6.91E+02	2.11E+01	5.45E+02	1.90E+02	9.29E+02	2.29E+03	3.93E+01	3.98E-03	4.40E-95	2.01E-01	0.00E+00	3.01E-02	2.68E+01	3.36E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	1.00E+00
i_soln	3	-1.5449	-41.8033	4.86E+03	6.80E+02	2.11E+01	5.87E+02	1.96E+02	8.03E+02	2.52E+03	3.75E+01	4.49E-03	4.40E-95	4.02E-01	0.00E+00	0.00E+00	2.82E+00	3.90E+00	4.92E+02	0.00E+00	0.00E+00	0.00E+00	3.02E+00
i_soln	4	-1.457	-42.3331	4.66E+03	6.73E+02	2.11E+01	5.40E+02	1.79E+02	7.90E+02	2.38E+03	4.34E+01	4.69E-03	4.40E-95	3.01E-01	0.00E+00	1.00E-02	2.80E+01	3.17E+00	4.82E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	-1.4072	-41.6655	4.78E+03	6.79E+02	2.41E+01	5.53E+02	1.96E+02	8.84E+02	2.37E+03	4.10E+01	4.10E-03	4.40E-95	3.01E-01	0.00E+00	7.03E-02	2.74E+01	3.25E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	-1.5306	-42.9585	4.61E+03	6.82E+02	2.11E+01	4.98E+02	1.94E+02	8.16E+02	2.32E+03	4.70E+01	5.86E-03	4.40E-95	3.01E-01	0.00E+00	5.02E-02	2.72E+01	2.91E+00	5.43E+02	0.00E+00	0.00E+00	1.00E+00	2.01E+00
i_soln	7	-1.454	-42.4709	4.61E+03	6.96E+02	2.01E+01	5.22E+02	1.89E+02	8.38E+02	2.31E+03	3.61E+01	3.28E-03	4.40E-95	3.01E-01	0.00E+00	8.04E-05	2.47E-02	3.14E-03	4.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	-1.4569	-40.811	4.80E+03	6.81E+02	2.21E+01	5.57E+02	1.89E+02	7.91E+02	2.47E+03	5.63E+01	8.78E-03	4.40E-95	3.01E-01	0.00E+00	5.02E-02	3.11E+01	3.15E+00	5.23E+02	0.00E+00	0.00E+00	4.02E+00	4.02E+00
i_soln	9	-1.3767	-41.411	4.65E+03	6.92E+02	2.11E+01	5.16E+02	1.82E+02	7.79E+02	2.40E+03	3.07E+01	2.33E-03	4.40E-95	2.01E-01	0.00E+00	1.11E-01	2.65E+01	3.13E+00	3.42E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	-1.5354	-41.7493	4.53E+03	6.48E+02	2.11E+01	5.23E+02	1.81E+02	7.46E+02	2.33E+03	5.51E+01	8.87E-03	4.40E-95	3.01E-01	0.00E+00	2.01E-02	1.83E+01	3.13E+00	4.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	-1.6875	-40.3224	4.74E+03	7.13E+02	2.21E+01	5.28E+02	1.86E+02	8.96E+02	2.30E+03	6.64E+01	1.93E-02	4.40E-95	3.01E-01	0.00E+00	6.03E-02	2.66E+01	3.19E+00	5.93E+02	0.00E+00	0.00E+00	0.00E+00	1.00E+00
i_soln	12	-1.763	-41.0535	4.48E+03	6.55E+02	2.11E+01	5.13E+02	1.69E+02	6.49E+02	2.39E+03	6.17E+01	1.80E-02	4.40E-95	2.01E-01	0.00E+00	2.01E-02	1.33E+01	3.15E+00	5.02E+02	0.00E+00	0.00E+00	6.03E+00	0.00E+00
i_soln	13	-2.1586	-38.8692	4.54E+03	6.49E+02	2.01E+01	5.23E+02	1.73E+02	6.25E+02	2.45E+03	7.23E+01	6.36E-02	4.40E-95	3.01E-01	0.00E+00	3.01E-02	2.36E+01	3.01E+00	5.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	-1.9159	-38.7276	4.88E+03	7.43E+02	2.51E+01	5.52E+02	1.95E+02	9.77E+02	2.30E+03	7.91E+01	4.84E-02	4.40E-95	3.01E-01	0.00E+00	4.02E-02	7.34E+00	3.12E+00	4.02E+02	0.00E+00	0.00E+00	0.00E+00	2.01E+00
i_soln	15	-1.4626	-41.6082	4.54E+03	6.74E+02	2.01E+01	5.25E+02	1.79E+02	7.84E+02	2.31E+03	4.15E+01	4.67E-03	4.40E-95	2.01E-01	0.00E+00	1.00E-02	1.00E-01	3.12E+00	4.82E+02	0.00E+00	0.00E+00	0.00E+00	1.31E+01
i_soln	16	-1.6803	-40.4951	4.57E+03	6.85E+02	2.01E+01	5.06E+02	1.77E+02	8.66E+02	2.21E+03	6.30E+01	1.69E-02	4.40E-95	3.01E-01	0.00E+00	4.02E-02	3.61E+01	3.27E+00	5.22E+02	0.00E+00	0.00E+00	3.01E+00	4.82E+01
i_soln	17	-1.7305	-39.8756	3.87E+03	5.44E+02	1.61E+01	4.01E+02	1.46E+02	2.17E+02	2.43E+03	5.81E+01	1.66E-02	4.40E-95	3.01E-01	0.00E+00	4.80E+00	4.51E+01	3.18E+00	3.82E+02	0.00E+00	0.00E+00	1.00E+01	8.64E+01
i_soln	18	-1.545	-41.5039	4.31E+03	6.21E+02	2.01E+01	4.77E+02	1.74E+02	6.73E+02	2.27E+03	4.26E+01	5.73E-03	4.40E-95	3.01E-01	0.00E+00	1.30E+00	3.14E+01	3.12E+00	4.52E+02	0.00E+00	0.00E+00	4.02E+00	8.94E+01
i_soln	19	-1.4444	-41.911	4.51E+03	6.43E+02	2.01E+01	5.06E+02	1.69E+02	5.81E+02	2.51E+03	3.69E+01	3.51E-03	4.40E-95	3.01E-01	0.00E+00	2.91E+00	3.72E+01	2.96E+00	6.23E+02	0.00E+00	0.00E+00	4.02E+00	7.84E+01
i_soln	20	-1.4692	-41.8257	4.39E+03	6.55E+02	1.81E+01	4.81E+02	1.70E+02	6.59E+02	2.33E+03	4.55E+01	5.42E-03	4.40E-95	3.01E-01	0.00E+00	7.03E-02	2.31E+01	2.81E+00	4.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	-1.877	-40.5707	4.46E+03	6.46E+02	1.91E+01	5.02E+02	1.75E+02	6.69E+02	2.35E+03	6.57E+01	2.63E-02	4.40E-95	2.01E-01	0.00E+00	1.31E-01	2.33E+01	2.95E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	-1.6196	-41.8993	4.28E+03	6.46E+02	2.01E+01	4.89E+02	1.79E+02	1.07E+03	1.81E+03	4.34E+01	6.61E-03	4.40E-95	3.01E-01	0.00E+00	1.20E-01	2.18E+01	3.09E+00	4.42E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	-1.4004	-41.6595	4.44E+03	6.41E+02	1.91E+01	5.10E+02	1.75E+02	7.99E+02	2.22E+03	4.46E+01	4.67E-03	4.40E-95	4.02E-01	0.00E+00	1.81E-01	2.51E+01	3.17E+00	4.62E+02	0.00E+00	0.00E+00	0.00E+00	3.01E+00
react	101	-999.999	-57.0673	3.90E+03	1.23E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.64E+03	6.10E-95	6.00E-95	4.40E-95	3.01E-01	0.00E+00	7.02E-02	2.49E+01	3.76E+00	4.41E+02	0.00E+00	0.00E+00	0.00E+00	2.01E+00
react	102	-1.3615	-66.3513	4.71E+03	6.91E+02	2.11E+01	5.45E+02	1.90E+02	9.29E+02	2.29E+03	2.17E+01	9.46E-04	4.40E-95	2.01E-01	0.00E+00	7.83E-03	1.73E+01	3.36E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	1.00E+00
react	103	-1.5494	-30.7307	4.85E+03	6.80E+02	2.11E+01	5.87E+02	1.96E+02	8.01E+02	2.52E+03	3.80E+01	4.66E-03	4.40E-95	4.02E-01	0.00E+00	3.10E-03	3.77E-07	3.90E+00	4.92E+02	0.00E+00	0.00E+00	0.00E+00	3.02E+00
react	104	-1.3204	-65.5145	4.63E+03	6.73E+02	2.11E+01	5.40E+02	1.79E+02	7.93E+02	2.38E+03	2.01E+01	7.31E-04	4.40E-95	3.01E-01	0.00E+00	1.80E-02	1.78E+01	3.17E+00	4.82E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	105	-1.2934	-65.5092	4.75E+03	6.79E+02	2.41E+01	5.53E+02	1.96E+02	8.84E+02	2.37E+03	2.13E+01	8.55E-04	4.40E-95	3.01E-01	0.00E+00	1.30E-02	1.67E+01	3.25E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	106	-1.4006	-67.5097	4.58E+03	6.82E+02	2.11E+01	4.98E+02	1.94E+02	8.16E+02	2.32E+03	2.67E+01	1.41E-03	4.40E-95	3.01E-01	0.00E+00	1.05E-02	1.61E+01	2.91E+00	5.43E+02	0.00E+00	0.00E+00	1.00E+00	2.01E+00
react	107	-1.454	-53.0693	4.61E+03	6.96E+02	2.01E+01	5.22E+02	1.89E+02	8.38E+02	2.31E+03	3.61E+01	3.28E-03	4.40E-95	3.01E-01	0.00E+00	3.59E-03	2.45E-02	3.14E-03	4.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	108	-1.2718	-65.6589	4.75E+03	6.81E+02	2.21E+01	5.57E+02	1.89E+02	7.91E+02	2.47E+03	2.55E+01	1.17E-03	4.40E-95	3.01E-01	0.00E+00	1.02E-02	1.38E+01	3.15E+00	5.23E+02	0.00E+00	0.00E+00	4.02E+00	4.02E+00
react	109	-1.292	-64.6399	4.63E+03	6.92E+02	2.11E+01	5.16E+02	1.82E+02	7.79E+02	2.40E+03	1.65E+01	5.50E-04	4.40E-95	2.01E-01	0.00E+00	9.98E-03	1.88E+01	3.13E+00	3.42E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	110	-1.395	-66.854	4.49E+03	6.48E+02	2.11E+01	5.23E+02	1.81E+02	7.46E+02	2.33E+03	3.47E+01	2.54E-03	4.40E-95	3.01E-01	0.00E+00	5.20E-03	7.01E+00	3.13E+00	4.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	111	-1.3961	-66.498	4.69E+03	7.13E+02	2.21E+01	5.28E+02	1.86E+02	8.96E+02	2.30E+03	3.18E+01	2.27E-03	4.40E-95	3.01E-01	0.00E+00	5.21E-03	7.09E+00	3.19E+00	5.93E+02	0.00E+00	0.00E+00	0.00E+00	1.00E+00
react	112	-1.5651	-67.4179	4.45E+03	6.55E+02	2.11E+01	5.13E+02	1.69E+02	6.49E+02	2.39E+03	4.27E+01	5.48E-03	4.40E-95	2.01E-01	0.00E+00	1.55E-03	2.71E+00	3.15E+00	5.02E+02	0.00E+00	0.00E+00	6.03E+00	0.00E+00
react	113	-1.6074	-66.9847	4.49E+03	6.49E+02	2.01E+01	5.23E+02	1.73E+02	6.25E+02	2.45E+03	3.96E+01	5.36E-03	4.40E-95	3.01E-01	0.00E+00	2.07E-03	2.17E+00	3.01E+00	5.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	114	-1.7119	-66.3452	4.86E+03	7.43E+02	2.53E+01	5.52E+02	1.95E+02	9.77E+02	2.30E+03	6.68E+01	2.15E-02	4.40E-95	3.01E-01	0.00E+00	9.02E-04	3.51E-01	3.12E+00	4.02E+02	0.00E+00	0.00E+00	0.00E+00	2.01E+00
react	115	-1.4684	-57.6633	4.54E+03	6.74E+02	1.99E+01	5.25E+02	1.79E+02	7.84E+02	2.31E+03	4.23E+01	4.91E-03	4.40E-95	2.01E-01	0.00E+00	1.57E-03	9.22E-02	3.12E+00	4.82E+02	0.00E+00	0.00E+00	0.00E+00	1.31E+01
react	116	-1.3646	-66.3549	4.50E+03	6.85E+02	2.01E+01	5.06E+02	1.77E+02	8.66E+02	2.21E+03	2.35E+01	1.13E-03	4.40E-95	3.01E-01	0.00E+00	1.09E-02	1.39E+01	3.27E+00	5.22E+02	0.00E+00	0.00E+00	3.01E+00	4.82E+01
react	117	-1.3812	-65.7519	3.78E+03	5.44E+02	1.38E+01	4.01E+02	1.46E+02	2.17E+02	2.42E+03	1.83E+01	7.34E-04	4.40E-95	3.01E-01	0.00E+00	1.42E-02	1.54E+01	3.18E+00	3.82E+02	0.00E+00	0.00E+00	1.00E+01	8.64E+01
react	118	-1.3724	-65.8866	4.27E+03	6.21E+02	1.95E+01	4.77E+02	1.74E+02	6.73E+02	2.27E+03	1.82E+01	7.01E-04	4.40E-95	3.01E-01	0.00E+00	1.54E-02	1.81E+01	3.12E+00	4.52E+02	0.00E+00	0.00E+00	4.02E+00	8.94E+01
react	119	-1.3179	-65.5739	4.47E+03	6.43E+02	1.87E+01	5.06E+02	1.69E+02	5.81E+02	2.50E+03	1.59E+01	4.90E-04	4.40E-95	3.01E-01	0.00E+00	2.23E-02	2.75E+01	2.96E+00	6.23E+02	0.00E+00	0.00E+00	4.02E+00	7.84E+01
react	120	-1.3437	-66.1727	4.35E+03	6.55E+02	1.81E+01	4.81E+02	1.70E+02	6.59E+02	2.33E+03	2.53E+01	1.26E-03	4.40E-95	3.01E-01	0.00E+00	1.02E-02	1.22E+01	2.81E+00	4.12E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	121	-1.5226	-67.3312	4.40E+03	6.46E+02	1.90E+01	5.02E+02	1.75E+02	6.69E+02	2.35E+03	3.37E+01	3.06E-03	4.40E-95	2.01E-01	0.00E+00	2.45E-03	5.12E+00	2.95E+00	4.52E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	122	-1.4568	-66.8437	4.25E+03	6.46E+02	2.00E+01	4.89E+02	1.79E+02	1.07E+03	1.81E+03	2.33E+01	1.31E-03	4.40E-95	3.01E-01	0.00E+00	9.59E-03	1.08E+01	3.09E+00	4.42E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	123	-1.2858	-65.7347	4.41E+03	6.41E+02	1.90E+01	5.10E+02	1.75E+02	7.99E+02	2.22E+03	2.41E+01	1.05E-03	4.40E-95	4.02E-01	0.00E+00	1.91E-02	1.41E+01	3.17E+00	4.62E+02	0.00E+00	0.00E+00	0.00E+00	3.01E+00

state	soln	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL	-start
i_soln	1	1.30E+01	6.82E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-02	4.51E+00	9.50E-95	
i_soln	2	2.01E+01	1.23E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	3	1.71E+01	5.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.79E-02	1.80E-95	9.50E-95	
i_soln	4	0.00E+00	9.04E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.76E-01	1.80E-95	9.50E-95	
i_soln	5	6.03E+00	8.91E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	6	7.03E+00	1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.80E-02	1.80E-95	9.50E-95	
i_soln	7	9.04E-03	9.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	8	1.71E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-01	1.80E-95	9.50E-95	
i_soln	9	4.02E+00	5.15E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	10	4.02E+00	2.11E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.79E-02	1.80E-95	9.50E-95	
i_soln	11	3.01E+00	1.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	12	1.11E+01	5.02E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	13	4.02E+00	3.76E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	14	5.02E+00	1.47E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	15	3.62E+01	6.58E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	16	1.81E+01	4.00E+02	1.81E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	17	4.82E+01	1.10E+03	1.10E+01	0.00E+00	0.00E+00	2.01E+00	2.01E+01	6.20E-95	1.80E-95	9.50E-95	
i_soln	18	2.31E+01	6.66E+02	2.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.40E-02	1.80E-95	9.50E-95	
i_soln	19	8.04E+00	4.67E+02	2.61E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	20	3.01E+00	3.64E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	21	4.02E+00	4.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	22	2.01E+00	1.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
i_soln	23	2.01E+00	2.53E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	4.18E+00	9.50E-95	
react	101	1.30E+01	6.82E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.54E+00	9.50E-95	
react	102	2.01E+01	1.23E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	103	1.71E+01	5.54E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-03	3.13E-01	9.50E-95	
react	104	0.00E+00	9.04E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.50E-02	9.50E-95	
react	105	6.03E+00	8.91E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	106	7.03E+00	1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.86E-02	9.50E-95	
react	107	9.04E-03	9.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	108	1.71E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-02	9.50E-95	
react	109	4.02E+00	5.15E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	110	4.02E+00	2.11E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.43E-02	9.50E-95	
react	111	3.01E+00	1.36E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	112	1.11E+01	5.02E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	113	4.02E+00	3.76E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	114	5.02E+00	1.47E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	115	3.62E+01	6.58E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	116	1.81E+01	4.00E+02	1.81E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-02	9.50E-95	
react	117	4.82E+01	1.10E+03	1.10E+01	0.00E+00	0.00E+00	2.01E+00	2.01E+01	6.20E-95	1.80E-95	9.50E-95	
react	118	2.31E+01	6.66E+02	2.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.72E-02	9.50E-95	
react	119	8.04E+00	4.67E+02	2.61E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	120	3.01E+00	3.64E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	121	4.02E+00	4.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	122	2.01E+00	1.70E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.20E-95	1.80E-95	9.50E-95	
react	123	2.01E+00	2.53E+02	2.01E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.18E+00	9.50E-95	

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li	Mg	Mn	Na	N(-3)	N(5)
i_soln	1	4.7	4	3.26E-05	0.001	1	1.10E-16	7.18E-12	1.30E-04	1.33E-08	3.52E-05	1.11E-07	2.50E-05	8.90E-10	7.03E-04	1.70E-08	5.77E-08	1.57E-08	3.00E-05	5.26E-06	3.21E-05	5.12E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	2	4.8	4	3.38E-05	0.001	1	-1.47E-19	-1.03E-14	1.05E-04	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	5.97E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	1.83E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.61E-04	0.00E+00	0.00E+00
i_soln	3	5	4	3.05E-05	6E-04	1	8.62E-14	9.59E-09	5.23E-05	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	4.11E-04	1.70E-08	3.85E-08	1.73E-07	2.00E-05	5.26E-06	1.74E-05	2.56E-05	1.44E-07	4.11E-05	3.09E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	4	5.1	4	7.63E-05	7E-04	1	3.99E-13	3.85E-08	8.90E-05	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	4.81E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	2.04E-05	2.56E-05	1.44E-07	4.11E-05	3.09E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	5	4.7	4	1.80E-05	0.001	1	5.02E-17	3.36E-12	9.78E-05	1.33E-08	4.26E-05	1.11E-07	2.50E-05	8.90E-10	6.65E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	6.43E-05	5.12E-05	1.44E-07	4.11E-05	5.46E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	6	4.5	4	-1.99E-05	9E-04	1	3.55E-17	2.79E-12	5.11E-05	1.33E-08	3.05E-05	1.11E-07	2.50E-05	8.90E-10	5.66E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	3.46E-05	5.12E-05	7.20E-07	4.11E-05	5.46E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	7	9.1	4	3.50E-04	8E-04	1	-1.08E-19	-9.23E-15	1.70E-05	1.33E-08	1.48E-05	1.11E-07	1.75E-04	8.90E-10	2.63E-04	1.70E-08	1.92E-08	1.57E-08	2.20E-04	1.05E-05	6.98E-06	2.56E-05	1.44E-07	4.11E-05	2.00E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	8	9.1	4	3.78E-04	9E-04	1	-1.36E-15	-1.07E-10	1.48E-05	1.33E-08	1.39E-05	1.11E-07	2.25E-04	8.90E-10	2.62E-04	1.70E-08	1.92E-08	1.57E-08	2.50E-04	1.58E-05	8.24E-06	2.56E-05	1.44E-07	4.11E-05	2.37E-07	8.70E-05	0.00E+00	0.00E+00
i_soln	9	8.8	4	2.33E-04	0.003	1	-2.47E-15	-7.31E-11	6.30E-06	1.33E-08	1.85E-05	1.11E-07	7.99E-04	8.90E-10	1.47E-04	1.70E-08	1.92E-08	1.57E-08	1.80E-04	2.63E-05	1.43E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.31E-04	0.00E+00	0.00E+00
i_soln	10	8.1	4	2.60E-04	0.003	1	-1.09E-17	-2.90E-13	2.00E-05	1.33E-08	1.20E-05	1.11E-07	7.74E-04	8.90E-10	3.28E-04	1.70E-08	1.92E-08	4.72E-08	1.60E-04	1.05E-05	6.63E-06	2.56E-05	1.44E-07	1.65E-04	3.64E-08	1.31E-04	0.00E+00	0.00E+00
i_soln	11	7.4	4	2.21E-04	0.005	1	2.83E-15	5.18E-11	3.34E-05	1.34E-08	1.85E-05	1.11E-07	1.75E-04	8.90E-10	2.62E-04	1.70E-08	1.92E-08	1.57E-08	6.00E-05	1.58E-05	1.59E-05	2.56E-05	1.44E-07	1.11E-03	7.28E-08	3.92E-04	0.00E+00	0.00E+00
i_soln	12	4	4	-1.76E-04	0.049	1	1.28E-15	2.48E-12	2.49E-05	1.34E-08	4.82E-05	1.11E-07	1.48E-02	1.78E-09	5.55E-03	1.19E-07	1.93E-08	3.15E-08	1.00E-05	5.28E-06	8.97E-07	7.69E-05	5.78E-07	3.51E-03	2.01E-06	6.54E-04	0.00E+00	0.00E+00
i_soln	13	7.8	4	4.27E-04	0.046	1	-3.08E-18	-6.33E-15	7.43E-07	1.34E-08	1.76E-05	1.11E-07	1.43E-02	8.92E-10	3.68E-03	1.70E-08	1.93E-08	1.58E-08	4.21E-04	3.17E-05	8.97E-07	2.56E-05	5.78E-07	3.38E-03	1.82E-08	3.92E-04	0.00E+00	0.00E+00
i_soln	14	7.2	4	7.29E-04	5E-04	1	1.24E-15	1.56E-10	1.43E-04	2.67E-08	3.33E-05	1.11E-07	2.50E-05	8.90E-10	1.81E-04	1.70E-08	5.77E-08	3.15E-08	4.00E-05	5.26E-06	7.14E-05	5.12E-05	1.44E-07	4.11E-05	1.27E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	15	8.3	4	8.81E-04	0.002	1	5.60E-13	1.80E-08	5.75E-05	1.33E-08	1.30E-05	1.11E-07	6.99E-04	8.90E-10	5.94E-04	1.70E-08	1.92E-08	1.57E-08	6.30E-04	3.68E-05	4.48E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	16	6.3	4	2.27E-04	5E-04	1	8.73E-15	1.16E-09	7.19E-05	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	2.66E-04	1.70E-08	1.92E-08	1.57E-08	4.00E-05	5.26E-06	2.40E-05	2.56E-05	1.44E-07	4.11E-05	9.10E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	17	4.9	4	2.37E-05	7E-04	1	3.42E-13	3.52E-08	5.78E-05	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	4.31E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	2.51E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	18	4.9	4	2.43E-05	8E-04	1	2.83E-14	2.44E-09	5.86E-05	1.33E-08	3.33E-05	1.11E-07	2.50E-05	8.90E-10	5.25E-04	1.70E-08	1.92E-08	1.57E-08	3.00E-05	5.26E-06	2.70E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	19	4.45	4	-3.38E-05	6E-04	1	6.77E-18	7.72E-13	1.39E-05	1.33E-08	1.80E-05	1.11E-07	2.50E-05	8.90E-10	3.68E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	4.30E-06	2.56E-05	2.88E-07	4.11E-05	2.18E-07	1.96E-04	0.00E+00	0.00E+00
i_soln	20	5.2	4	6.42E-05	5E-04	1	1.81E-15	2.33E-10	6.37E-05	1.33E-08	1.94E-05	1.11E-07	2.50E-05	8.90E-10	3.68E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	8.60E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	21	5.3	4	3.74E-05	5E-04	1	3.08E-13	4.50E-08	3.52E-05	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	3.21E-04	1.70E-08	5.77E-08	1.57E-08	2.00E-05	5.26E-06	1.54E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	22	5.6	4	7.04E-05	5E-04	1	8.85E-14	1.30E-08	4.41E-05	1.33E-08	2.04E-05	1.11E-07	2.50E-05	8.90E-10	3.15E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.45E-05	2.56E-05	1.44E-07	4.11E-05	7.28E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	23	4.9	4	3.46E-05	8E-04	1	-1.45E-19	-1.20E-14	7.45E-05	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	5.53E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	2.29E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	24	4.6	4	-2.04E-05	7E-04	1	6.88E-17	6.32E-12	1.96E-05	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	4.66E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	3.40E-06	2.56E-05	4.32E-07	4.11E-05	5.46E-08	3.04E-04	0.00E+00	0.00E+00
i_soln	25	4.6	4	-2.15E-05	0.001	1	3.52E-15	1.45E-10	1.96E-05	1.33E-08	1.99E-05	1.11E-07	2.50E-05	8.90E-10	1.05E-03	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.87E-06	2.56E-05	1.08E-06	4.11E-05	1.82E-08	9.79E-04	0.00E+00	0.00E+00
i_soln	26	4.4	4	-4.20E-05	0.002	1	8.89E-16	2.49E-11	3.71E-07	1.33E-08	2.59E-05	1.11E-07	2.50E-05	8.90E-10	1.43E-03	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	1.44E-06	8.23E-05	5.46E-08	1.48E-03	0.00E+00	0.00E+00
i_soln	27	4.7	4	-1.68E-05	5E-04	1	6.01E-19	8.72E-14	1.11E-05	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	2.63E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	4.83E-06	2.56E-05	4.32E-07	4.11E-05	1.82E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	28	4.2	4	-6.55E-05	0.001	1	6.96E-15	3.38E-10	8.90E-06	1.33E-08	1.67E-05	1.11E-07	2.50E-05	8.90E-10	7.47E-04	1.36E-07	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	1.01E-06	1.23E-04	1.09E-07	6.09E-04	0.00E+00	0.00E+00
i_soln	29	4.3	4	-5.17E-05	0.001	1	1.61E-15	1.02E-10	4.45E-06	1.33E-08	1.02E-05	1.11E-07	2.50E-05	8.90E-10	5.86E-04	8.48E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	7.20E-07	8.23E-05	7.28E-08	4.78E-04	0.00E+00	0.00E+00
i_soln	30	5.5	4	1.38E-04	7E-04	1	-1.66E-19	-1.66E-14	9.04E-05	1.33E-08	3.33E-05	1.11E-07	2.50E-05	8.90E-10	4.57E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	3.67E-05	2.56E-05	1.44E-07	4.11E-05	7.28E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	31	5	4	1.01E-04	0.001	1	3.01E-20	1.94E-15	1.43E-04	1.33E-08	4.16E-05	1.11E-07	2.50E-05	8.90E-10	7.08E-04	1.70E-08	5.77E-08	1.57E-08	3.00E-05	5.26E-06	4.80E-05	5.12E-05	2.88E-07	4.11E-05	7.28E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	32	5.8	4	1.50E-04	8E-04	1	5.68E-19	4.82E-14	7.60E-05	2.67E-08	3.42E-05	1.11E-07	2.50E-05	8.90E-10	4.97E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	6.11E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	33	5.1	4	9.90E-05	8E-04	1	1.56E-18	1.32E-13	1.11E-04	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	5.70E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.38E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	34	5.3	4	1.79E-04	9E-04	1	-1.39E-18	-1.14E-13	1.43E-04	1.33E-08	2.04E-05	1.11E-07	2.50E-05	8.90E-10	5.87E-04	1.70E-08	5.77E-08	3.15E-08	3.00E-05	5.26E-06	5.62E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	35	4.7	4	2.06E-05	0.001	1	2.15E-13	1.61E-08	9.90E-05	1.33E-08	3.05E-05	1.11E-07	2.50E-05	8.90E-10	6.19E-04	1.70E-08	5.77E-08	3.15E-08	2.00E-05	5.26E-06	5.73E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.31E-04	0.00E+00	0.00E+00
i_soln	36	4.9	4	1.29E-04	0.002	1	7.51E-15	3.61E-10	2.18E-04	2.67E-08	4.90E-05	1.11E-07	2.50E-05	8.90E-10	1.01E-03	1.70E-08	9.62E-08	4.72E-08	2.00E-05	5.26E-06	6.61E-05	7.67E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	37	4.9	4	6.39E-05	0.001	1	8.97E-19	6.01E-14	1.17E-04	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	7.12E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	2.88E-05	5.12E-05	4.32E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	38	6.5	4	1.39E-03	0.001	1	2.89E-15	1.62E-10	3.93E-04	1.33E-08	5.27E-05	1.11E-07	7.49E-05	8.90E-10	5.25E-04	5.09E-08	2.12E-07	7.87E-08	7.99E-05	1.05E-05	1.16E-04	5.12E-05	8.64E-07	4.11E-05	7.46E-07	2.61E-04	0.00E+00	0.00E+00
i_soln	39	5.9	4	1.10E-03	0.002	1	1.61E-15	4.97E-11	5.15E-04	1.33E-08	7.68E-05	1.11E-07	7.49E-05	8.90E-10	1.44E-03	6.79E-08	2.89E-07	1.42E-07	5.00E-05	1.05E-05	1.90E-04	7.67E-05	1.15E-06	4.11E-05	4.91E-07	3.92E-04	0.00E+00	0.00E+00
i_soln	40	5.3	4	1.78E-04	0.002	1	1.01E-14	4.31E-10	1.66E-04	2.67E-08	5.46E-05	1.11E-07	2.50E-05	8.90E-10	8.80E-04	1.70E-08	5.77E-08	6.30E-08	4.00E-05	1.05E-05	6.72E-05	5.12E-05	4.32E-07	4.11E-05	3.64E-08	5.66E-04	0.00E+00	0.00E+00
i_soln	41	6	4	1.96E-04	6E-04	1	5.43E-16	6.05E-11	8.19E-05	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	4.03E-04	1.70E-08	3.85E-08	1.57E-08	4.00E-05	5.26E-06	4.12E-05	2.56E-05	1.44E-07	4.11E-05	6.55E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	42	6.8	4	4.24E-04	5E-04	1	6.66E-14	8.43E-09	8.93E-05	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	2.67E-04	1.70E-08	3.85E-08	3.15E-08	4.00E-05	5.26E-06	6.20E-05	2.56E-05	1.44E-07	4.11E-05	5.10E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	43	4.9	4	-5.49E-06	5E-04	1	6.31E-15	1.03E-09	1.52E-05	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	1.45E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.88E-06	2.56E-05	1.44E-07	4.11E-05	7.28E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	44	4.6	4	-2.51E-05	5E-04	1	1.32E-19	2.04E-14	1.48E-06	1.33E-08	1.02E-05	1.11E-07	2.50E-05	8.90E-10	1.75E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	8.95E-07	2.56E-05	1.44E-07	4.11E-05	1.27E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	45	4.6	4	-2.50E-05	4E-04	1	9.12E-21	1.42E-15	1.11E-06	1.33E-08	1.39E-05	1.11E-07	2.50E-05	8.90E-10	2.15E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	8.95E-07	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	46	5.5	4	8.53E-05	5E-04	1	6.64E-14	8.82E-09	5.71E-05	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	3.32E-04	3.39E-08	1.92E-08	1.57E-08	3.00E-05	5.26E-06	2.08E-05	2.56E-05	1.44E-07	4.11E-05	4.37E-07	8.70E-05	0.00E+00	0.00E+00
i_soln	47	6.8	4	4.66E-04	6E-04	1	3.67E-14	3.85E-09	1.08E-04	1.33E-08	3.42E-05	1.11E-07	2.50E-05	8.90E-10	1.68E-04	1.70E-08	3.85E-08	1.57E-08	5.99E-05	1.58E-05	2.63E-05	2.56E-05	2.88E-07	4.11E-05	1.09E-07	2.61E-04	0.00E+00	0.00E+00
i_soln	48	7.7	4	2.56E-04	7E-04	1	3.93E-15	3.75E-10	2.74E-05	1.33E-08	2.13E-05	1.11E-07	4.99E-05	8.90E-10	2.57E-04	1.70E-08	1.92E-08	1.57E-08	1.20E-04	2.11E-05	1.29E-05	2.56E-05	1.44E-07	4.11E-05	5.46E-08	3.04E-04	0.00E+00	0.00E+00
i_soln	49	5.5	4	2.24E-04	9E-04	1	2.54E-20	1.95E-15	1.45E-04	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	6.28E-04	5.09E-08	7.69E-08	6.29E-08	2.00E-05	5.26E-06	7.34E-05	2.56E-05	2.88E-07	4.11E-05	1.18E-06	1.31E-04	0.00E+00	0.00E+00
i_soln	50	6.4	4	1.30E-03	0.002	1	4.06E-19	1.61E-14	3.93E-04	2.67E-08	4.16E-05	1.11E-07	4.99E-05	8.90E-10	7.87E-04	2.55E-07	2.89E-07	1.57E-07	4.00E-05	1.05E-05	2.65E-04	7.67E-05	1.15E-06	4.11E-05	4.19E-07	3.48E-04	0.00E+00	0.00E+00

state	soln	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite
i_soln	1	1.70E-08	0.00E+00	1.45E-08	4.16E-05	0.00E+00	1.96E-07	4.05E-06	3.56E-14	9.57E-12	1.68E-09	8.75E-13	7.65E-15	4.26E-18	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	1.70E-08	0.00E+00	1.45E-08	7.29E-05	0.00E+00	1.96E-07	3.44E-06	2.00E-14	6.83E-12	1.52E-09	9.98E-13	8.40E-15	9.01E-18	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	2.32E-06	1.85E-14	1.04E-11	3.74E-09	3.93E-12	2.75E-15	9.80E-19	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	1.85E-06	2.19E-14	1.54E-11	6.92E-09	9.14E-12	3.06E-15	1.04E-18	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	1.70E-08	0.00E+00	1.45E-08	5.20E-05	0.00E+00	1.96E-07	3.98E-06	7.10E-14	1.92E-11	3.37E-09	1.76E-12	2.06E-14	1.54E-17	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	2.98E-06	3.75E-14	6.51E-12	7.30E-10	2.42E-13	9.94E-15	6.57E-18	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	4.13E-07	7.43E-21	5.16E-14	2.31E-07	3.04E-06	1.13E-21	4.27E-25	-2.03E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	3.21E-07	8.91E-21	6.13E-14	2.73E-07	3.59E-06	1.97E-21	1.10E-24	-2.02E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	1.70E-08	0.00E+00	4.83E-09	7.29E-04	0.00E+00	1.96E-07	3.06E-07	2.01E-20	6.06E-14	1.25E-07	8.03E-07	7.14E-20	7.91E-22	-1.99E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	1.70E-08	0.00E+00	4.83E-09	7.60E-04	0.00E+00	1.96E-07	3.06E-07	1.12E-17	6.64E-12	2.71E-06	3.47E-06	3.99E-17	4.53E-19	-1.72E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	5.11E-08	0.00E+00	4.83E-09	1.32E-03	0.00E+00	1.96E-07	7.34E-07	1.35E-15	1.49E-10	1.17E-05	2.96E-06	7.13E-15	1.34E-16	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	4.10E-07	0.00E+00	4.84E-09	1.61E-02	0.00E+00	1.97E-07	1.28E-05	1.22E-15	2.93E-14	6.46E-13	5.80E-17	1.33E-14	1.41E-15	-1.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	5.12E-08	0.00E+00	4.84E-09	1.59E-02	0.00E+00	1.97E-07	2.85E-06	2.52E-17	3.89E-12	5.46E-07	3.10E-07	2.85E-16	3.06E-17	-1.73E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	3.41E-08	0.00E+00	1.93E-08	2.08E-05	0.00E+00	1.96E-07	2.89E-06	1.01E-14	9.17E-10	5.28E-05	8.82E-06	1.72E-15	6.81E-19	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	1.70E-08	0.00E+00	4.83E-09	1.35E-04	0.00E+00	1.96E-07	6.58E-07	1.97E-18	1.95E-12	1.30E-06	2.65E-06	1.42E-18	3.00E-21	-1.79E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	1.67E-06	2.30E-14	2.63E-10	1.90E-06	4.01E-08	5.84E-15	3.47E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	2.88E-06	2.68E-14	1.19E-11	3.39E-09	2.82E-12	5.72E-15	2.96E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	3.30E-06	2.92E-14	1.28E-11	3.63E-09	3.02E-12	6.08E-15	3.12E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	2.56E-08	0.00E+00	4.83E-09	3.64E-05	0.00E+00	1.96E-07	1.13E-06	4.53E-15	7.23E-13	7.37E-11	2.19E-14	1.27E-15	8.48E-19	-1.45E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	1.36E-06	9.06E-15	8.17E-12	4.69E-09	7.83E-12	7.04E-16	1.29E-19	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	5.81E-07	1.61E-14	1.84E-11	1.34E-08	2.82E-11	1.34E-15	2.58E-19	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	1.18E-06	1.51E-14	3.46E-11	5.01E-08	2.11E-10	1.28E-15	2.51E-19	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	2.65E-06	2.48E-14	1.09E-11	3.07E-09	2.55E-12	4.97E-15	2.46E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	3.41E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	7.34E-07	3.63E-15	8.08E-13	1.15E-10	4.82E-14	1.11E-15	8.30E-19	-1.46E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	3.41E-08	0.00E+00	4.83E-09	8.85E-05	0.00E+00	1.96E-07	1.68E-06	3.21E-15	6.72E-13	9.25E-11	3.82E-14	1.82E-15	2.77E-18	-1.47E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	5.11E-08	0.00E+00	4.83E-09	1.77E-04	0.00E+00	1.96E-07	8.78E-06	1.03E-15	1.30E-13	1.10E-11	2.85E-15	1.09E-15	3.29E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	3.41E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	7.03E-07	5.03E-15	1.45E-12	2.64E-10	1.39E-13	1.69E-15	1.32E-18	-1.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	2.39E-07	0.00E+00	4.83E-09	1.46E-04	0.00E+00	1.96E-07	5.23E-06	9.88E-16	8.28E-14	4.55E-12	7.50E-16	9.50E-16	2.42E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	1.53E-07	0.00E+00	4.83E-09	1.04E-04	0.00E+00	1.96E-07	3.44E-06	9.71E-16	1.05E-13	7.39E-12	1.54E-15	7.19E-16	1.36E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	2.84E-06	3.91E-14	6.93E-11	7.86E-08	2.61E-10	6.03E-15	2.25E-18	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	4.63E-06	5.32E-14	2.86E-11	1.00E-08	1.04E-11	1.23E-14	7.35E-18	-1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	1.70E-08	0.00E+00	2.41E-08	4.16E-05	0.00E+00	1.96E-07	2.77E-06	6.51E-14	2.28E-10	5.12E-07	3.39E-09	2.01E-14	1.53E-17	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.58E-06	3.68E-14	2.55E-11	1.14E-08	1.50E-11	2.42E-15	3.97E-19	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	1.70E-08	0.00E+00	1.45E-08	1.04E-05	0.00E+00	1.96E-07	1.56E-06	6.12E-14	6.71E-11	4.75E-08	9.92E-11	4.14E-15	6.99E-19	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	1.97E-06	6.30E-14	1.71E-11	3.02E-09	1.58E-12	1.10E-14	4.91E-18	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	1.70E-08	0.00E+00	3.38E-08	2.08E-05	0.00E+00	1.96E-07	6.45E-06	7.57E-14	3.13E-11	8.53E-09	7.01E-12	6.95E-15	1.74E-18	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	3.96E-06	3.19E-14	1.37E-11	3.82E-09	3.16E-12	3.74E-15	1.13E-18	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	1.53E-07	0.00E+00	4.34E-08	4.16E-05	0.00E+00	3.93E-07	6.26E-06	1.06E-13	1.79E-09	1.98E-05	6.53E-07	3.01E-14	2.22E-17	-1.31E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	2.22E-07	0.00E+00	5.79E-08	6.25E-05	0.00E+00	3.93E-07	1.01E-05	2.19E-13	8.77E-10	2.35E-06	1.92E-08	7.67E-14	7.69E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	1.70E-08	0.00E+00	3.86E-08	1.67E-04	0.00E+00	1.96E-07	5.31E-06	7.53E-14	7.80E-11	5.34E-08	1.10E-10	7.16E-14	1.86E-16	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	3.41E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.41E-06	4.27E-14	2.42E-10	8.73E-07	9.18E-09	3.50E-15	6.83E-19	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	5.11E-08	0.00E+00	1.45E-08	1.04E-05	0.00E+00	1.96E-07	1.22E-06	3.38E-14	1.22E-09	2.79E-05	1.85E-06	2.85E-15	5.62E-19	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	1.70E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	6.88E-07	8.14E-15	3.71E-12	1.07E-09	8.97E-13	5.43E-15	8.44E-18	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	3.41E-08	0.00E+00	4.83E-09	7.29E-05	0.00E+00	1.96E-07	1.12E-06	9.24E-16	2.11E-13	3.06E-11	1.29E-14	5.55E-16	7.73E-19	-1.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	3.41E-08	0.00E+00	4.83E-09	5.20E-05	0.00E+00	1.96E-07	1.16E-06	9.26E-16	2.12E-13	3.08E-11	1.30E-14	3.99E-16	3.98E-19	-1.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	5.11E-08	0.00E+00	9.65E-09	2.08E-05	0.00E+00	1.96E-07	1.33E-06	2.18E-14	3.93E-11	4.50E-08	1.50E-10	3.57E-15	1.37E-18	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	5.11E-08	0.00E+00	2.41E-08	8.33E-05	0.00E+00	1.96E-07	1.41E-06	1.45E-14	5.15E-10	1.17E-05	7.76E-07	9.47E-15	1.48E-17	-1.40E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	1.70E-08	0.00E+00	9.65E-09	5.20E-05	0.00E+00	1.96E-07	5.51E-07	1.62E-16	4.56E-11	8.21E-06	4.32E-06	6.55E-17	6.39E-20	-1.59E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	6.82E-08	0.00E+00	1.93E-08	1.04E-05	0.00E+00	1.96E-07	1.76E-06	7.99E-14	1.39E-10	1.55E-07	5.14E-10	5.70E-15	1.01E-18	-1.32E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	4.09E-07	0.00E+00	6.76E-08	1.35E-04	0.00E+00	3.93E-07	4.96E-06	2.66E-13	3.44E-09	2.95E-05	7.65E-07	2.19E-13	5.01E-16	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	Fe(VO3)2	d_Fe(VO3)2	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Al2O3	d_Al2O3	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Celestite	Anglesite	d_Anglesite	Ba3(AsO4)2	d_Ba3(AsO4)2	Halite	d_Halite	Fluorite	d_Fluorite	Cu(OH)2	d_Cu(OH)2	Tenorite	d_Tenorite	Brochantite	d_Brochantite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	CoFe2O4	d_CoFe2O4	Hercynite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hercynite	Spinel	d_Spinel	Magnesioferrite	d_Magnesioferrite	Minium	d_Minium	Zn(OH)2	d_Zn(OH)2	Zn(OH)2(am)	d_Zn(OH)2 (am)	Zn(OH)2(beta)	d_Zn(OH)2 (beta)	Zn(OH)2(epsilon)	d_Zn(OH)2 (epsilon)	Zn(OH)2(gamma)	d_Zn(OH)2 (gamma)	Zincite	d_Zincite	ZnO(active)	d_ZnO(active)	Be(OH)2(beta)
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Be(OH)2 (beta)	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite
i_soln	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.0056	-8.1856	-15.6635	-16.2135	-8.8079	-35.3212	-11.5979	-20.9216	-51.3593	0.0112	-5.3815	2.4225	-0.8688	2.4359	-8.7298	-14.3833	-2.6888
i_soln	2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.983	-8.163	-15.6179	-16.1679	-8.7849	-35.2297	-11.5749	-20.697	-51.0657	0.0683	-5.2674	2.5366	-0.8117	2.5071	-8.7727	-14.3121	-2.6317
i_soln	3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5738	-7.7538	-14.8	-15.35	-8.3762	-33.5945	-11.1663	-19.8727	-49.0154	0.6639	-4.0763	3.7277	-0.2161	4.0938	-8.3771	-12.7254	-2.0361
i_soln	4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.3825	-7.5625	-14.4176	-14.9676	-8.185	-32.8296	-10.9751	-19.4854	-48.0545	1.0298	-3.3443	4.4597	0.1498	5.0917	-8.1112	-11.7275	-1.6702
i_soln	5	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1812	-8.3612	-16.0145	-16.5645	-8.9833	-36.0232	-11.7734	-21.0964	-52.0604	0.314	-4.7759	3.0281	-0.566	3.3443	-8.427	-13.4749	-2.386
i_soln	6	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3944	-8.5744	-16.441	-16.991	-9.1966	-36.8763	-11.9867	-21.7028	-53.3067	-0.5479	-6.4998	1.3042	-1.4279	0.9585	-9.0889	-15.8607	-3.2479
i_soln	7	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.2812	-0.4612	-1.0583	-1.6083	-1.9271	-6.9545	-4.7171	-5.2375	-15.0328	6.5524	7.7007	15.5047	5.6724	17.6593	-6.5886	0.84	3.8523
i_soln	8	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.1245	-0.3045	-0.8536	-1.4036	-1.8791	-6.6538	-4.6691	-5.1944	-14.8457	6.6236	7.8431	15.6471	5.7436	17.8729	-6.5174	1.0537	3.9236
i_soln	9	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0974	-0.2774	-1.3452	-1.8952	-2.3978	-8.1828	-5.1879	-6.3839	-17.5913	5.9739	6.5438	14.3478	5.0939	16.2239	-6.8671	-0.5954	3.2739
i_soln	10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.8522	-1.0322	-2.2386	-2.7886	-2.5364	-9.3535	-5.3265	-7.3233	-18.9466	6.6092	7.8144	15.6184	5.7292	18.8298	-5.5318	2.0105	3.9092
i_soln	11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.693	-2.873	-4.4413	-4.9913	-2.8983	-12.2799	-5.6884	-8.2937	-21.0026	6.5398	7.6756	15.4796	5.6598	19.3217	-4.9012	2.5024	3.8398
i_soln	12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.543	-7.723	-15.5521	-16.1021	-9.1591	-35.9123	-11.9499	-21.1565	-52.6481	-4.1677	-13.7391	-5.9351	-5.0477	-9.4003	-12.2087	-26.2206	-6.8679
i_soln	13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.081	-0.099	-0.3043	-0.8543	-1.5353	-5.4168	-4.326	-5.947	-14.567	5.5607	5.7176	13.5216	4.6807	15.9848	-6.2803	-0.8354	2.8605
i_soln	14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.7645	-3.9445	-7.1815	-7.7315	-4.567	-18.3575	-7.357	-11.6587	-29.3737	7.0145	8.625	16.429	6.1345	20.9456	-4.2265	4.1264	4.3145
i_soln	15	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0545	-0.2345	-1.2057	-1.7557	-2.3013	-7.8503	-5.0913	-7.2524	-18.1702	6.493	7.582	15.386	5.613	18.2812	-5.848	1.462	3.793
i_soln	16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.9305	-5.1105	-9.5133	-10.0633	-5.7328	-23.021	-8.5228	-14.6251	-35.8375	4.6716	3.9393	11.7433	3.7916	14.8171	-5.6694	-2.0021	1.9716
i_soln	17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.7731	-7.9531	-15.1985	-15.7485	-8.5754	-34.3914	-11.3655	-20.275	-50.0154	0.5198	-4.3644	3.4396	-0.3602	3.7615	-8.4212	-13.0577	-2.1802
i_soln	18	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.6004	-7.7804	-14.8532	-15.4032	-8.4028	-33.7008	-11.1928	-20.1058	-49.3282	0.549	-4.306	3.498	-0.331	3.8491	-8.392	-12.9701	-2.151
i_soln	19	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.9599	-9.1399	-17.572	-18.122	-9.7621	-39.1381	-12.5521	-22.3573	-55.6575	-1.5915	-8.587	-0.783	-2.4715	-2.1223	-10.0825	-18.9415	-4.2915
i_soln	20	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.1805	-7.3605	-14.0136	-14.5636	-7.9831	-32.0218	-10.7731	-19.0755	-47.0389	0.9626	-3.4787	4.3253	0.0826	4.7902	-8.2784	-12.0291	-1.7374
i_soln	21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.9847	-7.1647	-13.6221	-14.1721	-7.7873	-31.2387	-10.5774	-18.6765	-46.0525	1.5192	-2.3656	5.4384	0.6392	6.3597	-7.8218	-10.4595	-1.1808
i_soln	22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4187	-6.5987	-12.4901	-13.0401	-7.2214	-28.9748	-10.0114	-17.51	-43.1881	2.3926	-0.6187	7.1853	1.5126	8.6801	-7.2484	-8.1391	-0.3074
i_soln	23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.778	-7.958	-15.2084	-15.7584	-8.5804	-34.4111	-11.3704	-20.2849	-50.04	0.4756	-4.4527	3.3513	-0.4044	3.6291	-8.4654	-13.1901	-2.2244
i_soln	24	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.667	-8.847	-16.9861	-17.5361	-9.4691	-37.9664	-12.2592	-21.7691	-54.1905	-1.2481	-7.9002	-0.0962	-2.1281	-1.2422	-9.8891	-18.0614	-3.9481
i_soln	25	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.691	-8.871	-17.0336	-17.5836	-9.4926	-38.0607	-12.2826	-21.8159	-54.3077	-1.3487	-8.1014	-0.2974	-2.2287	-1.5439	-9.9897	-18.3632	-4.0487
i_soln	26	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.1082	-9.2882	-17.5661	-18.1161	-9.6078	-38.8238	-12.3979	-22.0494	-54.8869	-2.476	-10.3559	-2.5519	-3.356	-4.7256	-10.917	-21.5449	-5.176
i_soln	27	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1595	-8.3395	-15.9711	-16.5211	-8.9616	-35.9363	-11.7516	-21.0531	-51.9519	-0.7865	-6.9771	0.8269	-1.6665	0.0426	-9.5275	-16.7766	-3.4865
i_soln	28	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4885	-9.6685	-18.1506	-18.7006	-9.8121	-39.8168	-12.6021	-22.4597	-55.9101	-3.0561	-11.5162	-3.7122	-3.9361	-6.2662	-11.2971	-23.0854	-5.7561
i_soln	29	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.2779	-9.4579	-17.9062	-18.4562	-9.7782	-39.5046	-12.5682	-22.3911	-55.7397	-2.7438	-10.8917	-3.0877	-3.6238	-5.4293	-11.0848	-22.2486	-5.4439
i_soln	30	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4389	-6.6189	-12.5302	-13.0802	-7.2413	-29.0549	-10.0314	-17.7397	-43.4777	2.486	-0.432	7.372	1.606	9.0602	-7.055	-7.7591	-0.214
i_soln	31	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.415	-7.595	-14.4822	-15.0322	-8.2173	-32.9588	-11.0073	-19.7307	-48.3965	1.0867	-3.2305	4.5735	0.2067	5.3625	-7.9543	-11.4568	-1.6133
i_soln	32	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.8959	-6.0759	-11.4438	-11.9938	-6.698	-26.8818	-9.488	-16.6012	-40.7092	3.5986	1.7933	9.5973	2.7186	12.0981	-6.2424	-4.7211	0.8986
i_soln	33	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.3854	-7.5654	-14.4234	-14.9734	-8.188	-32.8415	-10.9781	-19.4913	-48.0694	1.2464	-2.9113	4.8927	0.3664	5.7413	-7.8946	-11.0779	-1.4536
i_soln	34	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.8239	-7.0039	-13.3004	-13.8504	-7.6265	-30.5955	-10.4166	-18.5307	-45.4243	2.0656	-1.2727	6.5313	1.1856	7.9991	-7.2754	-8.8201	-0.6344
i_soln	35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1772	-8.3572	-16.0069	-16.5569	-8.9797	-36.0082	-11.7697	-21.0891	-52.042	0.2683	-4.8674	2.9366	-0.6117	3.2072	-8.4727	-13.6121	-2.4317
i_soln	36	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.7969	-7.9769	-15.2464	-15.7964	-8.5995	-34.4874	-11.3895	-20.3229	-50.1354	0.9149	-3.5741	4.2299	0.0349	4.947	-8.0261	-11.8723	-1.7851
i_soln	37	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.7838	-7.9638	-15.2201	-15.7701	-8.5863	-34.4347	-11.3763	-20.2967	-50.0697	0.569	-4.2659	3.5381	-0.311	3.9093	-8.372	-12.9099	-2.131
i_soln	38	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.8856	-4.0656	-7.9005	-8.4505	-5.1649	-20.2723	-7.9549	-13.6798	-33.1885	5.8839	6.3638	14.1678	5.0039	18.2538	-4.6571	1.4346	3.1839
i_soln	39	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.0576	-5.2376	-10.2443	-10.7943	-6.3367	-24.9597	-9.1268	-16.0735	-39.0977	4.3523	3.3006	11.1046	3.4723	14.2591	-5.5887	-2.5602	1.6523
i_soln	40	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.7282	-6.9082	-13.1071	-13.6571	-7.5289	-30.2069	-10.319	-18.46	-45.0607	2.1115	-1.1809	6.6231	1.2315	8.1369	-7.2295	-8.6824	-0.5885
i_soln	41	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.4144	-5.5944	-10.4814	-11.0314	-6.217	-24.9574	-9.007	-15.7111	-38.3761	4.0321	2.6601	10.4641	3.1521	13.1984	-6.0089	-3.6208	1.3321
i_soln	42	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.237	-4.417	-8.1268	-8.6768	-5.0397	-20.2483	-7.8298	-12.9311	-32.0643	6.3371	7.2702	15.0742	5.4571	19.3136	-4.5039	2.4943	3.6371
i_soln	43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.7687	-7.9487	-15.1889	-15.7389	-8.5702	-34.3712	-11.3602	-20.2645	-49.989	0.0217	-5.3606	2.4434	-0.8583	2.2673	-8.9193	-14.5519	-2.6783
i_soln	44	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3596	-8.5396	-16.3709	-16.9209	-9.1613	-36.7356	-11.9513	-21.4545	-52.9525	-1.8212	-9.0464	-1.2424	-2.7012	-2.9614	-10.4622	-19.7806	-4.5212
i_soln	45	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.357	-8.537	-16.3661	-16.9161	-9.1591	-36.7263	-11.9491	-21.4501	-52.9414	-1.8185	-9.0409	-1.2369	-2.6985	-2.9532	-10.4595	-19.7724	-4.5185
i_soln	46	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4325	-6.6125	-12.5174	-13.0674	-7.2349	-29.0293	-10.0249	-17.727	-43.4458	2.2453	-0.9134	6.8906	1.3653	8.3381	-7.2957	-8.4812	-0.4547
i_soln	47	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.073	-4.253	-7.7978	-8.3478	-4.8748	-19.5894	-7.6648	-12.7763	-31.4147	5.9586	6.5132	14.3172	5.0786	18.178	-4.8824	1.3588	3.2586
i_soln	48	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.4611	-2.6411	-4.8755	-5.4255	-3.5645	-14.0465	-6.3545	-9.6659	-24.3734	6.7046	8.0052	15.8092	5.8246	19.5159	-5.0364	2.6967	4.0046
i_soln	49	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.6215	-6.8015	-12.8956	-13.4456	-7.4241	-29.7857	-10.2141	-17.9288	-44.2151	2.7803	0.1566	7.9606	1.9003	9.9431	-6.7607	-6.8762	0.0803
i_soln	50	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.5277	-4.7077	-9.0075	-9.5575	-5.6298	-22.309	-8.4198	-14.3631	-35.2664	5.9529	6.5019	14.3059	5.0729	18.561	-4.4881	1.7418	3.2529

state	soln	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Al2O3	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite
i_soln	1	1.1813	-9.0898	-14.3637	-14.3398	-11.2715	3.2568	-0.9435	2.5615	-0.9883	1.5207	1.2337	2.9387	-0.029	-22.0901	-14.7501	-37.9603	-13.3041	-28.8757	-8.7443	-4.6466	-4.8966	-6.9125
i_soln	2	1.1874	-8.7327	-14.0233	-13.7226	-11.1314	3.6178	-0.7282	3.1688	-0.8576	1.6514	1.3644	3.0694	0.2323	-21.9892	-14.7492	-38.0574	-13.4032	-28.8738	-9.0219	-4.3608	-4.6108	-6.6263
i_soln	3	1.6754	-7.5371	-13.992	-13.7888	-10.8966	2.6632	-1.4068	3.0876	-0.6585	1.8505	1.5635	3.2685	0.6305	-19.942	-12.902	-32.716	-11.756	-25.1795	-7.3818	-4.8223	-5.0722	-7.0883
i_soln	4	2.0313	-6.8712	-13.3336	-13.0314	-10.1391	3.6878	-1.1716	4.6878	-0.2035	2.3055	2.0185	3.7235	1.5405	-19.5462	-12.6062	-31.9284	-11.5602	-24.5878	-7.1909	-4.8458	-5.0958	-7.1119
i_soln	5	1.4769	-8.787	-13.1994	-13.1751	-10.1068	3.0955	-0.9547	2.1327	-1.1275	1.3815	1.0945	2.7995	-0.3074	-21.9132	-14.5732	-37.4297	-13.1272	-28.5219	-8.7435	-4.5181	-4.7681	-6.7838
i_soln	6	0.6545	-10.2492	-15.0911	-15.1683	-12.1968	1.1266	-1.4293	-0.8066	-1.9491	0.5599	0.2729	1.9779	-1.9506	-22.7057	-15.1657	-39.007	-13.5197	-29.7068	-8.9562	-4.5641	-4.8141	-6.8299
i_soln	7	6.2752	-7.6545	-12.6774	-8.3762	-5.4838	-13.5977	-10.9184	-10.4323	-1.9946	0.5144	0.2274	1.9324	-2.0417	-3.7525	-0.8125	-0.5473	-3.7665	-1.0004	-1.1291	-3.9683	-4.2183	-7.0777
i_soln	8	6.3457	-7.5897	-12.125	-8.0008	-4.9323	-13.4446	-10.8105	-10.5092	-2.0562	0.4528	0.1658	1.8708	-2.1648	-3.6844	-0.7444	-0.3433	-3.6984	-0.8644	-1.0083	-3.695	-3.945	-6.9131
i_soln	9	5.7072	-6.9876	-10.2804	-6.2925	-3.4005	-10.2133	-8.9969	-8.945	-2.1394	0.3696	0.0826	1.7876	-2.3311	-6.07	-2.83	-6.3001	-5.484	-5.0356	-2.6418	-1.9232	-2.1731	-5.6871
i_soln	10	6.6565	-3.6068	-5.5533	-2.2666	0.6253	-4.4974	-6.3876	-2.7398	-0.9407	1.5683	1.2813	2.9863	0.0662	-8.5704	-4.6304	-11.0011	-6.5844	-8.6363	-3.08	-1.9294	-2.1794	-5.0773
i_soln	11	6.7664	-1.3726	-2.5275	0.5302	2.9447	0.7422	-3.8666	2.4933	-0.0367	2.4723	2.1853	3.8903	1.8743	-11.1093	-6.4693	-15.818	-7.7233	-12.3142	-3.9722	-2.4001	-2.6501	-4.069
i_soln	12	-2.5389	-15.3745	-19.5965	-19.776	-17.1089	-2.6792	-1.503	-10.6341	-5.2004	-2.6914	-2.9781	-1.2731	-8.4524	-23.64	-15.6	-39.8095	-13.454	-30.5753	-9.3625	-0.0637	-0.3131	-3.1446
i_soln	13	5.9963	-3.8809	-5.6008	-2.201	0.2108	-5.3307	-6.0264	-5.9436	-2.1291	0.3799	0.0932	1.7982	-2.3098	-10.4759	-6.2359	-15.5173	-7.8899	-11.8471	-3.7602	-0.0725	-0.3221	-3.1535
i_soln	14	7.2595	-0.2191	-3.6473	-1.2428	1.9505	0.8469	-4.2976	4.5853	0.8043	3.3133	3.0263	4.7313	3.5562	-11.5222	-6.6822	-16.2566	-7.7362	-12.7399	-3.9576	-4.771	-5.021	-7.0371
i_soln	15	6.5591	-4.4339	-8.1602	-4.8445	-1.776	-5.7609	-7.2537	-2.8166	-0.6776	1.8314	1.5444	3.2494	0.5924	-8.0325	-4.2925	-10.1874	-6.4465	-7.9604	-2.5426	-2.6604	-2.9104	-6.3708
i_soln	16	5.2367	-0.3413	-6.7263	-5.2219	-2.3296	4.273	-2.0969	7.4636	1.0302	3.5392	3.2522	4.9572	4.0079	-15.2689	-9.5289	-23.8966	-9.6829	-18.4332	-5.2694	-4.597	-4.847	-6.8628
i_soln	17	1.5671	-7.9811	-13.7003	-13.5978	-10.7056	2.722	-1.233	2.6969	-0.8467	1.6623	1.3753	3.0803	0.2542	-21.2747	-14.1347	-36.3141	-12.8887	-27.6449	-8.5106	-4.6635	-4.9135	-6.9294
i_soln	18	1.6218	-7.9519	-13.6198	-13.2963	-10.6259	2.7189	-1.2349	2.6998	-0.8451	1.6639	1.3769	3.0819	0.2574	-21.5794	-14.4394	-37.2283	-13.1934	-28.2544	-8.6393	-4.6705	-4.9205	-6.9364
i_soln	19	-0.4292	-11.4429	-18.0149	-18.1851	-15.4689	-1.5106	-2.1577	-4.031	-2.7811	-0.2721	-0.5591	1.1459	-3.6145	-22.2918	-14.7018	-37.5653	-13.0058	-28.779	-8.9187	-4.5496	-4.7996	-6.8154
i_soln	20	1.9	-6.6386	-14.4741	-14.2461	-11.1778	3.0008	-1.591	4.4185	-0.1535	2.3555	2.0685	3.7735	1.6406	-20.3682	-13.5282	-34.7945	-12.5822	-26.4318	-8.2189	-5.1073	-5.3573	-7.3734
i_soln	21	2.4088	-5.7826	-13.1595	-12.8308	-9.7624	2.4163	-1.8786	3.8007	-0.2636	2.2454	1.9584	3.6634	1.4205	-19.9647	-13.2247	-33.9841	-12.3787	-25.8249	-8.0229	-5.0816	-5.3316	-7.3477
i_soln	22	3.1899	-4.0168	-11.7233	-11.0944	-8.026	3.1832	-1.9204	5.4097	0.2867	2.7957	2.5087	4.2137	2.521	-18.162	-11.722	-29.7761	-11.176	-22.8195	-6.8548	-5.0731	-5.323	-7.3392
i_soln	23	1.5551	-8.0253	-13.8698	-13.5467	-10.8763	3.0252	-1.1377	3.1336	-0.7329	1.7761	1.4891	3.1941	0.4819	-21.5811	-14.4411	-37.2332	-13.1951	-28.2576	-8.817	-4.6869	-4.9369	-6.9529
i_soln	24	-0.1005	-10.6493	-17.4888	-17.3182	-14.794	-0.0414	-1.8016	-1.8504	-2.1729	0.3361	0.0491	1.7541	-2.3982	-22.2989	-14.8589	-38.1868	-13.3129	-29.0934	-9.2282	-4.5065	-4.7565	-6.7722
i_soln	25	-0.0968	-10.7498	-17.1715	-16.4992	-14.482	0.3186	-1.5766	-1.8792	-2.2575	0.2515	-0.0355	1.6695	-2.5674	-22.8014	-15.3614	-39.6943	-13.8154	-30.0984	-9.7307	-4.2209	-4.4708	-6.486
i_soln	26	-1.1247	-12.4775	-19.1556	-18.5079	-16.6701	-10.1367	-4.7608	-16.7124	-6.1405	-3.6315	-3.9185	-2.2135	-10.3334	-23.1451	-15.5051	-39.9252	-13.7591	-30.3856	-9.6714	-3.9422	-4.1922	-5.9055
i_soln	27	0.2574	-9.8876	-16.463	-16.5583	-13.6661	-0.575	-2.0734	-2.3989	-2.2652	0.2438	-0.0432	1.6618	-2.5828	-22.3669	-15.0269	-38.7907	-13.5809	-29.4293	-9.1971	-4.4775	-4.7275	-6.7432
i_soln	28	-1.7285	-13.6583	-20.2449	-20.1783	-17.9552	-3.2307	-2.285	-7.786	-3.9903	-1.4813	-1.7683	-0.0633	-6.033	-23.6243	-15.7843	-40.5628	-13.8383	-30.944	-9.7488	-3.9987	-4.2487	-5.7859
i_soln	29	-1.4772	-13.0456	-19.9697	-19.9056	-17.5776	-4.9292	-2.9956	-9.6358	-4.3701	-1.8611	-2.148	-0.443	-6.7925	-23.3887	-15.6487	-40.2561	-13.8027	-30.6729	-9.714	-4.1182	-4.3682	-6.082
i_soln	30	3.3611	-4.2191	-10.4873	-9.7846	-6.8923	4.6287	-1.2451	6.6769	0.484	2.993	2.706	4.411	2.9156	-18.5724	-12.0324	-30.6071	-11.3864	-23.4403	-6.8754	-4.805	-5.0549	-7.071
i_soln	31	2.1677	-7.1142	-12.2755	-11.9515	-8.8831	4.7131	-0.7478	5.0516	-0.2235	2.2855	1.9985	3.7035	1.5006	-20.5887	-13.5487	-34.6562	-12.4027	-26.473	-7.8526	-4.6155	-4.8654	-6.8813
i_soln	32	4.3945	-2.2364	-7.7308	-6.5072	-3.8368	5.1761	-1.2592	7.4925	0.7606	3.2696	2.9826	4.6876	3.4688	-17.9796	-11.7396	-30.0287	-11.3936	-22.8547	-6.9344	-4.5009	-4.7509	-6.7666
i_soln	33	2.2697	-6.6547	-13.3218	-13.0205	-10.1282	3.3597	-1.3869	4.7831	-0.1	2.409	2.122	3.827	1.7476	-20.4788	-13.5388	-34.7265	-12.4928	-26.4532	-8.1236	-5.1675	-5.4175	-7.4337
i_soln	34	3.0329	-5.2362	-11.6375	-11.3125	-8.2441	4.2359	-1.2904	6.3296	0.3833	2.8923	2.6053	4.3103	2.7142	-19.6798	-12.9398	-33.1294	-12.0938	-25.2551	-7.5622	-5.1552	-5.4052	-7.4214
i_soln	35	1.4221	-8.8327	-13.7869	-13.887	-10.9947	2.4347	-1.15	2.0274	-1.0975	1.4115	1.1245	2.8295	-0.2475	-22.3864	-15.0464	-38.8493	-13.6004	-29.4684	-9.2167	-4.7394	-4.9894	-7.0054
i_soln	36	2.0717	-7.586	-13.1477	-12.9264	-9.682	4.3194	-0.963	4.7261	-0.2603	2.2487	1.9617	3.6667	1.427	-21.3011	-14.1611	-36.3931	-12.9151	-27.6976	-8.5371	-5.0036	-5.2535	-7.2697
i_soln	37	1.681	-7.9319	-14.0252	-13.7037	-10.7323	3.5183	-1.1458	3.7549	-0.5231	1.9859	1.6989	3.4039	0.9014	-21.5876	-14.4476	-37.2527	-13.2016	-28.2707	-8.8235	-4.9105	-5.1605	-7.1766
i_soln	38	6.4759	1.2053	-3.7022	-1.7023	1.1899	6.291	-1.6915	10.0042	1.7419	4.2509	3.9639	5.6689	5.4314	-13.5795	-8.0395	-19.6286	-8.3935	-15.4546	-3.7896	-4.049	-4.299	-6.7918
i_soln	39	5.2538	-0.615	-5.6309	-4.0603	-1.1681	8.374	-0.4097	11.1321	1.6906	4.1996	3.9126	5.6176	5.3289	-16.1855	-10.0455	-25.0465	-9.7995	-19.4665	-5.1455	-3.9381	-4.188	-6.6808
i_soln	40	3.1301	-5.1902	-9.1263	-7.9935	-5.4371	6.8652	-0.117	7.4629	0.37	2.879	2.592	4.297	2.6876	-19.7085	-12.9685	-33.2154	-12.1225	-25.3124	-7.4663	-3.9973	-4.2472	-6.2616
i_soln	41	4.7411	-1.2975	-8.4118	-7.2082	-4.3159	4.0211	-2.0418	7.3344	0.9687	3.4777	3.1907	4.8957	3.885	-15.6137	-9.5737	-23.7311	-9.4277	-18.5229	-4.8966	-5.082	-5.332	-7.3481
i_soln	42	6.7528	0.3026	-4.6857	-2.6813	0.2109	1.5437	-3.666	5.6211	0.939	3.448	3.161	4.866	3.8257	-12.5198	-7.2798	-17.6494	-7.9338	-13.9351	-3.8282	-5.0736	-5.3236	-7.3399
i_soln	43	0.9276	-8.4792	-14.2394	-14.3109	-11.2426	1.4247	-1.5069	0.1686	-1.5982	0.9108	0.6238	2.3288	-1.2487	-20.9677	-13.8277	-35.393	-12.5817	-27.0308	-8.2035	-4.1816	-4.4316	-6.4466
i_soln	44	-0.8007	-11.2224	-18.6633	-18.8585	-15.9663	-6.9535	-4.0156	-11.5234	-4.6593	-2.1503	-2.4373	-0.7323	-7.3709	-21.9233	-14.4833	-37.06	-12.9373	-28.3422	-8.5515	-4.2278	-4.4778	-6.4931
i_soln	45	-0.7707	-11.2196	-18.9455	-19.1405	-16.2483	-7.9081	-4.3823	-12.5546	-4.8807	-2.3717	-2.6587	-0.9537	-7.8139	-22.7662	-15.3262	-39.5886	-13.7802	-30.0279	-9.3944	-4.3705	-4.6204	-6.636
i_soln	46	3.0792	-4.4598	-11.1809	-10.6527	-7.5844	4.0271	-1.4414	5.8489	0.2734	2.7824	2.4954	4.2004	2.4945	-17.7875	-11.2475	-28.2526	-10.6015	-21.8706	-6.0904	-4.7845	-5.0345	-7.0505
i_soln	47	6.3137	-0.0789	-4.0228	-1.7189	0.8723	3.5632	-2.6926	6.8171	1.0132	3.5222	3.2352	4.9402	3.9741	-13.1991	-7.9591	-19.6871	-8.6131	-15.2936	-4.3323	-4.1855	-4.4355	-6.4509
i_soln	48	6.8446	-2.1056	-5.7967	-2.526	-0.0017	-3.7697	-6.1055	-0.8168	-0.3938	2.1152	1.8282	3.5332	1.1601	-9.9004	-5.5604	-13.3911	-7.1144	-10.4963	-3.3235	-4.0896	-4.3396	-6.6566
i_soln	49	3.6964	-3.9248	-10.2467	-9.5457	-6.6535	4.6173	-1.3554	7.1992	0.6949	3.2039	2.9169	4.6219	3.3374	-17.3686	-10.8286	-26.9957	-10.1826	-21.0327	-5.8479	-5.1324	-5.3823	-7.3985
i_soln	50	6.6266	1.4389	-2.1137	-0.0924	2.8509	7.8071	-0.98	10.778	1.7627	4.2717	3.9847	5.6897	5.473	-14.2504	-8.6104	-21.241	-8.8644	-16.5962	-4.5068	-3.754	-4.0039	-6.3196

state	soln	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite
i_soln	1	-11.0235	-6.942	-37.2169	-10.3827	-10.2778	-15.23	-14.6784	-13.9762	-9.853	-6.1399	-7.2755	-6.6042	-12.9236	-21.0455	-8.9578	-12.7816	-9.6766	-999.999	-999.999	-0.4027	-999.999	-4.7152
i_soln	2	-10.3852	-6.9004	-36.8489	-10.0966	-9.9917	-14.9435	-14.6929	-13.7613	-9.5646	-6.3615	-7.3238	-6.5827	-12.6947	-20.7915	-8.9318	-12.7587	-9.6533	-999.999	-999.999	-0.0981	-999.999	-4.4305
i_soln	3	-11.458	-7.3824	-38.2908	-10.5582	-10.4533	-15.4041	-13.9234	-14.3931	-8.9813	-5.9729	-7.0849	-6.6457	-9.7798	-16.4227	-8.5166	-12.3497	-9.2432	-999.999	-999.999	-0.7761	-999.999	-5.3642
i_soln	4	-11.4797	-7.3362	-38.2181	-10.5819	-10.477	-15.4281	-13.9473	-14.5158	-9.7472	-5.7119	-6.9928	-6.4556	-10.8769	-18.0708	-8.3277	-12.1585	-9.0524	-999.999	-999.999	-0.8025	-999.999	-5.3889
i_soln	5	-10.8949	-6.5112	-36.2273	-10.2541	-10.1492	-15.1013	-14.3735	-13.8559	-9.7235	-6.0132	-7.4593	-6.7801	-13.0967	-21.3932	-9.1322	-12.9571	-9.8519	-999.999	-999.999	-0.3145	-999.999	-4.5871
i_soln	6	-10.7507	-6.8261	-36.91	-10.3	-10.1951	-15.1466	-14.4189	-14.0268	-9.7671	-6.4954	-7.7974	-6.8668	-13.6983	-22.2058	-9.3424	-13.1703	-10.0645	-999.999	-999.999	-0.3741	-999.999	-4.5064
i_soln	7	-11.4373	-13.7694	-51.0402	-10.7675	-10.6626	-15.6	-14.1093	-15.8349	-12.2539	-5.9213	-2.0881	-2.0436	-1.711	-5.1879	-2.1807	-6.1204	-3.0006	-999.999	-999.999	-0.6288	-999.999	-7.2007
i_soln	8	-11.6219	-13.5288	-50.3896	-10.6137	-10.5088	-15.4398	-13.8719	-15.7821	-12.1033	-5.7973	-2.1519	-2.0161	-1.6958	-5.1386	-2.1406	-6.0832	-2.9569	-999.999	-999.999	-0.4613	-999.999	-7.0565
i_soln	9	-9.9979	-11.9817	-45.9984	-9.2468	-9.1419	-14.0895	-13.7606	-14.2098	-10.3344	-5.9949	-2.3243	-2.0765	-1.7995	-5.2181	-2.581	-6.461	-3.3513	-999.999	-999.999	0.8418	-999.999	-5.3723
i_soln	10	-9.9897	-9.2358	-40.4961	-9.1718	-9.0669	-14.0197	-13.4504	-13.9317	-9.0355	-3.9975	-2.7948	-2.1473	-1.3607	-4.2289	-3.2905	-7.1344	-4.0301	-999.999	-999.999	0.8981	-999.999	-4.6945
i_soln	11	-8.8309	-6.9883	-35.7839	-8.5001	-8.3952	-13.8321	-12.9724	-13.3236	-8.6834	-3.1201	-3.5569	-2.8428	-3.6437	-7.53	-4.476	-7.8329	-5.2127	-999.999	-999.999	1.2668	-999.999	-4.0198
i_soln	12	-7.7811	-6.7701	-34.6174	-7.1766	-7.0719	-12.6352	-11.1757	-11.6792	-7.7897	-10.0871	-9.0994	-9.5539	-16.5681	-26.7464	-11.0376	-13.6949	-11.2026	-999.999	-999.999	1.9424	-999.999	-3.5441
i_soln	13	-8.2171	-8.4363	-37.9449	-8.0843	-7.9796	-13.4755	-13.2064	-12.3425	-8.5596	-4.1206	-2.1297	-2.2253	-2.8804	-6.1957	-3.6813	-6.9698	-4.4101	-999.999	-999.999	1.6347	-999.999	-3.8483
i_soln	14	-11.409	-7.5854	-38.6503	-10.2082	-10.1033	-15.3544	-14.2572	-14.2542	-9.8633	-2.4179	-3.188	-2.3943	-3.4322	-7.199	-4.6996	-8.2417	-5.4355	-999.999	-999.999	-0.5799	-999.999	-4.8708
i_soln	15	-11.0609	-10.6812	-44.1159	-9.9304	-9.8255	-14.7457	-14.4416	-14.3906	-10.8011	-3.9141	-1.725	-1.8346	-2.2341	-5.3392	-2.4876	-6.3644	-3.2274	-999.999	-999.999	0.0249	-999.999	-5.9105
i_soln	16	-11.2343	-7.0535	-37.4117	-10.3336	-10.2287	-15.1788	-14.229	-14.313	-9.8201	-3.226	-4.5868	-3.7259	-6.6605	-11.724	-5.8683	-9.707	-6.5999	-999.999	-999.999	-0.4875	-999.999	-4.8624
i_soln	17	-11.2974	-7.0646	-37.4931	-10.3994	-10.2945	-15.2455	-14.6941	-14.142	-9.8641	-6.0131	-7.1919	-6.5447	-12.2653	-20.1489	-8.7166	-12.5489	-9.4427	-999.999	-999.999	-0.4645	-999.999	-4.9052
i_soln	18	-10.859	-7.0389	-37.4453	-10.4065	-10.3016	-15.2528	-15.0024	-14.0888	-9.8733	-5.8078	-6.959	-6.1972	-12.1006	-19.8137	-8.5471	-12.3764	-9.2704	-999.999	-999.999	-0.3892	-999.999	-4.7373
i_soln	19	-10.8331	-7.7162	-38.6867	-10.1092	-10.0043	-15.1311	-13.8015	-14.4329	-9.7482	-7.9654	-8.7835	-8.0318	-14.3439	-23.4123	-9.9013	-13.5594	-10.6289	-999.999	-999.999	-0.1906	-999.999	-5.0915
i_soln	20	-12.0976	-7.9729	-39.7609	-10.8433	-10.7384	-15.689	-15.4388	-14.9106	-10.3076	-5.8851	-6.9241	-6.2519	-11.0649	-18.3557	-8.1219	-11.9565	-8.8498	-999.999	-999.999	-1.322	-999.999	-5.6487
i_soln	21	-12.0735	-7.6939	-39.1804	-10.8176	-10.7127	-15.663	-15.4128	-15.2545	-10.2814	-5.436	-7.0979	-6.0561	-10.6649	-17.7594	-7.9245	-11.7607	-8.6538	-999.999	-999.999	-1.4897	-999.999	-5.6229
i_soln	22	-12.0653	-7.7125	-39.2097	-10.8091	-10.7042	-15.6545	-14.8022	-14.9393	-10.2752	-4.8972	-6.2253	-5.4925	-9.503	-16.0339	-7.3583	-11.1948	-8.0878	-999.999	-999.999	-1.2077	-999.999	-5.6168
i_soln	23	-10.8747	-7.1273	-37.637	-10.4229	-10.318	-15.2695	-15.019	-14.2017	-9.5893	-6.0573	-7.233	-6.375	-11.6788	-19.2691	-8.7256	-12.554	-9.4481	-999.999	-999.999	-0.4466	-999.999	-4.7539
i_soln	24	-10.4037	-7.7749	-38.756	-9.9412	-9.8363	-15.0883	-14.3607	-14.5778	-9.7074	-7.7743	-8.6787	-7.7406	-13.7606	-22.5384	-9.6117	-13.1417	-10.3364	-999.999	-999.999	-0.3278	-999.999	-5.0501
i_soln	25	-9.0907	-7.566	-38.0285	-9.6558	-9.5509	-14.8048	-14.5537	-13.9325	-9.4358	-7.875	-8.3429	-7.7747	-13.8364	-22.6523	-9.6541	-13.1658	-10.3626	-999.999	-999.999	0.0834	-999.999	-4.7746
i_soln	26	-8.4411	-7.7945	-38.1867	-9.2007	-9.0959	-14.5275	-13.7985	-12.9364	-9.1658	-8.7993	-8.0427	-8.2015	-14.6911	-23.9329	-10.0817	-13.4066	-10.7812	-999.999	-999.999	0.6067	-999.999	-4.5055
i_soln	27	-11.1148	-7.5928	-38.3714	-9.912	-9.8071	-15.0585	-14.8082	-14.5672	-9.6739	-7.1137	-8.1895	-7.2309	-13.0354	-21.3012	-9.0972	-12.634	-9.8281	-999.999	-999.999	-0.8467	-999.999	-5.0189
i_soln	28	-9.2778	-7.849	-38.3702	-8.5877	-8.4828	-13.6785	-13.5521	-13.2172	-9.2049	-9.1776	-8.6473	-8.5724	-15.4186	-25.0232	-10.4417	-13.1174	-10.2559	-999.999	-999.999	0.388	-999.999	-4.5526
i_soln	29	-9.6134	-7.9675	-38.7381	-8.8992	-8.7944	-14.0014	-13.8474	-13.5185	-9.321	-8.9662	-8.6186	-8.3576	-14.9902	-24.3809	-10.2263	-13.099	-10.2488	-999.999	-999.999	0.2364	-999.999	-4.6678
i_soln	30	-11.4398	-7.0412	-37.5891	-10.5411	-10.4362	-15.3871	-14.5346	-14.2883	-10.0092	-4.5141	-5.8625	-5.0374	-9.7371	-16.2902	-7.3833	-11.215	-8.1086	-999.999	-999.999	-0.7614	-999.999	-4.8734
i_soln	31	-10.9924	-6.7357	-36.7732	-10.3516	-10.2467	-15.1989	-14.3462	-13.8869	-9.8226	-5.3741	-6.6267	-5.8896	-11.7342	-19.2662	-8.3674	-12.191	-9.086	-999.999	-999.999	-0.3629	-999.999	-4.5601
i_soln	32	-10.6887	-6.5193	-36.236	-10.237	-10.1321	-15.0832	-14.8325	-13.9961	-9.7097	-3.7532	-5.3314	-4.2786	-8.6086	-14.6232	-6.8415	-10.6719	-7.5658	-999.999	-999.999	-0.3009	-999.999	-4.3536
i_soln	33	-11.8004	-7.4386	-38.7418	-10.9038	-10.7989	-15.7503	-15.1989	-14.9076	-10.071	-5.4954	-7.0657	-6.1578	-10.8869	-18.0857	-8.3336	-12.1616	-9.0557	-999.999	-999.999	-1.2348	-999.999	-5.4099
i_soln	34	-12.1397	-7.2061	-38.2635	-10.8915	-10.7866	-15.738	-15.1866	-14.8995	-10.06	-4.7138	-6.5085	-5.4215	-9.9289	-16.5676	-7.7727	-11.6001	-8.4944	-999.999	-999.999	-1.2475	-999.999	-5.2228
i_soln	35	-11.3686	-6.7822	-36.9944	-10.4755	-10.3706	-15.3224	-15.072	-14.3816	-9.6428	-6.0589	-7.7598	-6.9505	-12.485	-20.4756	-9.1268	-12.9533	-9.8479	-999.999	-999.999	-0.7533	-999.999	-4.9826
i_soln	36	-11.3763	-6.9859	-37.652	-10.7401	-10.6352	-15.5886	-15.0369	-14.1315	-9.7408	-5.6182	-6.8651	-6.0302	-11.3861	-18.8302	-8.7588	-12.5734	-9.4696	-999.999	-999.999	-0.6424	-999.999	-4.7069
i_soln	37	-11.0958	-7.2517	-38.1036	-10.6467	-10.5418	-15.4938	-15.2433	-14.2501	-10.1177	-5.9639	-7.0637	-6.3818	-12.3	-20.201	-8.7365	-12.56	-9.4548	-999.999	-999.999	-0.646	-999.999	-4.9785
i_soln	38	-10.5497	-6.3476	-35.9062	-9.3098	-9.2049	-14.6334	-13.246	-13.6687	-9.0762	-2.0232	-3.4456	-2.5294	-4.3695	-8.1923	-5.3088	-8.1864	-5.5577	-999.999	-999.999	0.2596	-999.999	-4.1627
i_soln	39	-10.0754	-5.9462	-34.9702	-9.0383	-8.9335	-14.3998	-13.319	-13.3494	-8.6944	-2.9046	-4.4093	-3.5515	-6.2217	-10.9456	-6.5087	-9.1978	-6.607	-999.999	-999.999	0.5344	-999.999	-3.902
i_soln	40	-9.3375	-5.9735	-34.6114	-9.7326	-9.6278	-14.581	-14.0285	-13.2096	-8.6065	-4.5433	-5.8809	-4.913	-9.2708	-15.5181	-7.6853	-11.5035	-8.3995	-999.999	-999.999	0.546	-999.999	-3.6521
i_soln	41	-11.7192	-7.2765	-38.341	-10.5175	-10.4126	-15.6641	-13.8573	-14.8713	-10.2943	-3.4479	-5.1441	-4.1972	-7.7246	-13.2613	-6.357	-9.8899	-7.0842	-999.999	-999.999	-1.0079	-999.999	-5.3347
i_soln	42	-11.7123	-7.366	-38.5146	-10.334	-10.2291	-15.6563	-13.9579	-14.926	-10.0552	-2.3683	-4.0297	-2.903	-4.4828	-8.6114	-5.1749	-8.5374	-5.9073	-999.999	-999.999	-0.9195	-999.999	-5.2096
i_soln	43	-11.1679	-7.0851	-37.0565	-9.9167	-9.8118	-14.7621	-13.9095	-14.2806	-9.3752	-6.5111	-7.808	-6.8424	-12.2427	-20.115	-8.7021	-12.5437	-9.4368	-999.999	-999.999	-0.1359	-999.999	-4.7253
i_soln	44	-10.8629	-8.0756	-39.0852	-9.6619	-9.557	-14.8084	-13.7128	-14.1167	-9.4218	-8.0463	-8.1888	-7.4326	-13.4329	-21.8965	-9.2941	-12.8337	-10.0278	-999.999	-999.999	-0.1513	-999.999	-4.7708
i_soln	45	-11.0075	-8.218	-39.5153	-9.8048	-9.6999	-14.9512	-14.7009	-14.242	-9.5655	-8.0436	-8.1689	-7.4288	-13.4301	-21.8922	-9.293	-12.8314	-10.0254	-999.999	-999.999	-0.2593	-999.999	-4.9122
i_soln	46	-11.7745	-7.2676	-38.0277	-10.0433	-9.9385	-15.065	-13.7355	-14.5977	-9.9859	-4.7546	-6.186	-5.2056	-9.7189	-16.2628	-7.3726	-10.7313	-7.8006	-999.999	-999.999	-0.8439	-999.999	-5.0276
i_soln	47	-10.214	-6.8452	-36.5739	-9.4458	-9.3409	-14.7681	-13.738	-13.977	-9.4716	-2.5717	-3.8047	-2.5271	-4.9387	-9.2077	-5.0072	-8.3732	-5.7432	-999.999	-999.999	0.2303	-999.999	-4.1097
i_soln	48	-10.2864	-9.0052	-41.0996	-10.1368	-10.0319	-14.9803	-14.2452	-14.6136	-10.1632	-3.2155	-2.9254	-1.9942	-2.8001	-6.2448	-3.7025	-7.5482	-4.4394	-999.999	-999.999	-0.1762	-999.999	-5.0928
i_soln	49	-11.7644	-7.068	-37.9639	-10.2666	-10.1617	-15.2382	-13.6519	-14.8247	-9.7385	-4.3961	-6.2541	-5.0959	-8.7298	-14.8674	-7.5716	-10.7957	-7.8149	-999.999	-999.999	-1.0896	-999.999	-5.0767
i_soln	50	-9.8165	-5.4879	-33.6959	-8.4111	-8.3062	-13.4636	-13.0261	-13.2982	-8.2926	-2.1006	-4.0123	-2.7948	-4.4301	-8.4064	-5.7828	-8.2248	-5.325	-999.999	-999.999	0.5778	-999.999	-3.491

state	soln	si_Ba3(AsO4)2	si_Halite	si_Fluorite	si_Cu(OH)2	si_Tenorite	si_Brochantite	si_Cupricferrite	si_Cuprousferrite	si_CoFe2O4	si_Hercynite	si_Spinel	si_Magnesioferrite	si_Minium	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zincite	si_ZnO(active)	si_Be(OH)2(beta)	si_CO2(g)
i_soln	1	-1.0803	-8.5484	-10.2897	-7.1817	-6.1517	-23.238	-3.4914	4.9017	6.0902	1.5646	-12.2779	-10.9089	-51.682	-8.2613	-8.5353	-7.8153	-7.5953	-7.7953	-7.3953	-7.2497	-4.1888	-3.0672
i_soln	2	-0.5777	-8.4414	-9.9469	-6.978	-5.948	-22.3385	-3.1735	5.0625	6.4062	1.783	-11.815	-10.5932	-50.8816	-8.131	-8.405	-7.685	-7.465	-7.665	-7.265	-7.1194	-4.004	-3.2458
i_soln	3	-0.3414	-8.8975	-9.1189	-5.517	-4.487	-17.3724	-0.5215	6.9189	8.0144	2.5768	-11.0011	-8.9864	-50.6497	-7.8851	-8.1591	-7.4391	-7.2191	-7.4191	-7.0191	-6.8735	-3.6371	-3.2528
i_soln	4	0.0399	-8.8319	-9.4324	-6.0631	-5.0331	-19.7764	-0.3356	6.6388	8.9421	3.7528	-9.895	-8.0583	-49.8645	-7.7881	-8.0621	-7.3421	-7.1221	-7.3221	-6.9221	-6.7765	-3.4687	-3.2577
i_soln	5	-1.199	-8.572	-10.011	-7.1802	-6.1502	-23.1041	-2.8844	5.2059	6.6965	1.589	-12.5557	-10.3027	-51.6814	-8.269	-8.543	-7.823	-7.603	-7.803	-7.403	-7.2574	-4.1883	-3.2433
i_soln	6	-2.231	-8.5416	-9.5544	-7.5709	-6.5409	-24.3198	-4.9989	4.1533	4.5803	-0.7161	-14.5919	-12.4196	-52.8806	-8.7869	-9.0609	-8.3409	-8.1209	-8.3209	-7.9209	-7.7753	-4.5574	-3.0635
i_soln	7	12.0685	-9.0951	-3.3131	-0.6142	0.4158	-5.9364	16.1583	13.6103	27.7709	1.6931	-5.4873	10.9766	-23.4328	-1.1515	-1.4255	-0.7055	-0.4855	-0.6855	-0.2855	-0.1399	-0.0187	-4.9897
i_soln	8	12.055	-9.2743	-2.8591	-0.633	0.397	-5.8422	16.282	13.6627	27.9042	1.6412	-5.6153	11.1142	-23.5085	-1.2681	-1.5421	-0.8221	-0.6021	-0.8021	-0.4021	-0.2565	-0.019	-4.9369
i_soln	9	11.3685	-9.3736	-1.9663	-0.7609	0.2691	-4.457	14.8547	13.1851	26.0583	1.1252	-6.4523	9.144	-24.7463	-1.5926	-1.8666	-1.1466	-0.9266	-1.1266	-0.7266	-0.581	-0.0117	-4.7848
i_soln	10	10.0569	-9.0282	-2.7897	-0.8725	0.1575	-3.493	16.0137	14.4088	25.9881	4.8578	-4.8557	9.6139	-28.3447	-2.7251	-2.9991	-2.2791	-2.0591	-2.2591	-1.8591	-1.7135	-0.2304	-4.1227
i_soln	11	8.8946	-8.6595	-3.1897	-2.1374	-1.1074	-6.9355	14.6101	13.7746	24.42	7.2965	-3.6563	8.8666	-32.5715	-3.734	-4.008	-3.288	-3.068	-3.268	-2.8679	-2.7223	-0.759	-3.8759
i_soln	12	-5.8268	-7.2222	-4.5326	-8.7698	-7.7396	-25.9379	-13.4369	-0.1649	-3.3249	-10.3374	-20.584	-19.1492	-60.5259	-9.6169	-9.8909	-9.1709	-8.9509	-9.1509	-8.7507	-8.6051	-5.9375	-3.5357
i_soln	13	8.1739	-7.6203	-1.1594	-1.945	-0.9148	-6.2335	12.8446	12.5882	22.8862	1.7335	-6.8557	7.8932	-31.0543	-2.6854	-2.9594	-2.2394	-2.0194	-2.2194	-1.8192	-1.6736	-0.4655	-3.4975
i_soln	14	8.6172	-9.2513	-4.7377	-2.0454	-1.0154	-7.8395	15.6513	14.5412	25.1189	9.6531	-3.6707	8.1196	-31.7086	-3.3926	-3.6666	-2.9466	-2.7266	-2.9266	-2.5266	-2.381	-0.9162	-3.8484
i_soln	15	10.0804	-8.9364	-1.6867	-1.509	-0.479	-7.168	15.1448	13.4561	26.1589	5.0678	-4.4939	9.2172	-28.2053	-2.0549	-2.3289	-1.6089	-1.3889	-1.5889	-1.1889	-1.0433	-0.1342	-3.7232
i_soln	16	4.9022	-9.0845	-5.7086	-3.977	-2.9469	-13.5909	9.0341	11.1668	18.634	8.662	-5.0195	1.6333	-39.4077	-5.4262	-5.7002	-4.9802	-4.7602	-4.9602	-4.5602	-4.4146	-1.8367	-3.2136
i_soln	17	-0.3034	-8.8789	-9.3449	-6.7617	-5.7317	-21.9892	-2.0544	5.6302	7.5229	2.1564	-11.5805	-9.4777	-50.5585	-7.996	-8.27	-7.55	-7.33	-7.53	-7.13	-6.9844	-3.8146	-3.2489
i_soln	18	-0.0686	-8.5728	-9.3579	-6.7674	-5.7374	-22.0153	-2.0016	5.6537	7.5775	2.1888	-11.5807	-9.4227	-50.0442	-7.9392	-8.2132	-7.4932	-7.2732	-7.4732	-7.0732	-6.9276	-3.8175	-3.0728
i_soln	19	-1.9868	-8.7684	-8.2163	-7.6555	-6.6255	-24.5545	-7.1707	3.0751	2.4051	-3.3736	-16.3449	-14.5959	-55.0465	-9.2966	-9.5706	-8.8506	-8.6306	-8.8306	-8.4306	-8.285	-4.6469	-3.5399
i_soln	20	-0.3063	-9.1201	-8.9245	-6.1541	-5.1241	-20.6098	-0.561	6.3807	9.0163	3.6857	-9.587	-7.9848	-49.0354	-7.7134	-7.9874	-7.2674	-7.0474	-7.2474	-6.8474	-6.7018	-3.2978	-3.2637
i_soln	21	-0.4777	-9.1782	-8.1417	-5.9503	-4.9203	-19.9724	0.7558	7.0409	10.3329	3.922	-9.6039	-6.6685	-48.2256	-7.8797	-8.1537	-7.4337	-7.2137	-7.4137	-7.0137	-6.8681	-3.1376	-3.2712
i_soln	22	1.5269	-9.1861	-7.52	-5.3521	-4.3221	-18.1716	3.1009	8.2126	12.6803	5.5961	-7.9027	-4.321	-45.8309	-6.9725	-7.2465	-6.5265	-6.3065	-6.5065	-6.1065	-5.9609	-2.6929	-3.3058
i_soln	23	-0.1969	-8.5513	-9.5823	-6.4684	-5.4384	-20.8345	-1.8494	5.8793	7.4292	2.3399	-11.3578	-9.5709	-50.0491	-8.0371	-8.3111	-7.5911	-7.3711	-7.5711	-7.1711	-7.0255	-3.8184	-3.2489
i_soln	24	-1.7061	-8.4765	-8.5242	-7.3627	-6.3327	-23.6354	-6.1911	3.5613	3.3866	-1.964	-14.8334	-13.6139	-53.8661	-9.1895	-9.4635	-8.7435	-8.5235	-8.7235	-8.3234	-8.1778	-4.3658	-3.5422
i_soln	25	-1.4108	-7.6272	-8.4264	-7.4006	-6.3706	-23.4774	-6.4302	3.4228	3.1594	-2.2337	-15.0259	-13.8384	-53.9682	-8.8536	-9.1276	-8.4076	-8.1876	-8.3876	-7.9876	-7.842	-4.3873	-3.5423
i_soln	26	-1.9	-7.3206	-4.9685	-7.8294	-6.7994	-24.4939	-9.1134	2.0668	0.4834	-10.9269	-22.91	-16.211	-55.6572	-8.5563	-8.8303	-8.1103	-7.8903	-8.0903	-7.6903	-7.5447	-4.9814	-3.5394
i_soln	27	-2.842	-9.0881	-7.7824	-7.1496	-6.1196	-22.9628	-5.0549	4.1359	4.5191	-1.7869	-14.8094	-12.4822	-53.0341	-8.9993	-9.2733	-8.5533	-8.3333	-8.5333	-8.1333	-7.9877	-4.1773	-3.2432
i_soln	28	-3.869	-7.9804	-7.4745	-8.1941	-7.164	-25.627	-10.6385	1.3219	-0.1535	-7.0067	-18.8158	-17.5775	-57.1756	-9.1628	-9.4368	-8.7168	-8.4968	-8.6968	-8.2968	-8.1512	-5.1646	-3.5375
i_soln	29	-3.1112	-8.1862	-6.436	-7.9794	-6.9494	-25.0992	-9.7993	1.7488	0.479	-7.5539	-19.5405	-16.9183	-56.3286	-9.1333	-9.4073	-8.6873	-8.4673	-8.6673	-8.2673	-8.1217	-4.9912	-3.5383
i_soln	30	1.6341	-8.8527	-8.44	-5.564	-4.534	-18.5413	3.0757	8.194	12.6565	6.184	-7.7179	-4.344	-45.2348	-6.7995	-7.0735	-6.3535	-6.1335	-6.3335	-5.9334	-5.7878	-2.838	-3.116
i_soln	31	0.2173	-8.5451	-10.0207	-6.5822	-5.5522	-21.409	-0.7409	6.2767	8.8415	3.8698	-10.148	-8.1576	-48.9091	-7.6029	-7.8769	-7.1569	-6.9369	-7.1369	-6.7369	-6.5913	-3.6495	-3.0769
i_soln	32	3.8571	-8.596	-7.3425	-4.9739	-3.9439	-16.4713	5.8912	9.5969	15.4764	7.5498	-6.5696	-1.5236	-42.2031	-6.2166	-6.4906	-5.7706	-5.5506	-5.7506	-5.3506	-5.205	-2.4295	-3.1678
i_soln	33	-0.3024	-8.7599	-9.6451	-6.0681	-5.038	-20.1151	0.0925	6.8504	9.3719	4.1764	-9.6908	-7.6282	-48.9708	-7.8609	-8.1349	-7.4149	-7.1949	-7.3949	-6.9949	-6.8493	-3.4708	-3.2578
i_soln	34	0.4165	-8.9232	-9.4186	-5.6703	-4.6402	-18.9107	2.1288	7.8675	11.4094	5.7623	-8.3251	-5.5906	-46.8493	-7.4661	-7.7401	-7.0201	-6.8001	-7.0001	-6.6001	-6.4545	-3.1447	-3.0954
i_soln	35	-1.8383	-8.7267	-10.0612	-6.8744	-5.8444	-22.1059	-2.6699	5.4661	6.6091	1.6033	-12.492	-10.3904	-52.1925	-8.5695	-8.8435	-8.1235	-7.9035	-8.1035	-7.7035	-7.5579	-4.1851	-3.2433
i_soln	36	0.7008	-8.3953	-10.574	-6.322	-5.292	-20.5467	-0.8243	6.465	8.2865	3.7244	-10.4316	-8.7112	-49.0143	-7.669	-7.943	-7.223	-7.003	-7.203	-6.803	-6.6574	-3.8338	-3.2491
i_soln	37	-0.1449	-8.4443	-10.0141	-6.779	-5.749	-22.2947	-1.9731	5.6621	7.6094	2.8529	-10.9441	-9.39	-50.0694	-7.8678	-8.1418	-7.4218	-7.2018	-7.4018	-7.0018	-6.8562	-3.8231	-3.249
i_soln	38	7.5484	-8.4991	-4.9634	-2.9267	-1.8967	-9.6963	12.5088	13.2293	21.9102	11.0977	-3.2186	4.4352	-35.9898	-4.4756	-4.7496	-4.0296	-3.8096	-4.0096	-3.6096	-3.464	-1.6259	-3.0231
i_soln	39	5.7637	-7.8968	-7.5109	-3.8779	-2.8479	-12.168	8.4945	11.3465	17.7476	10.0636	-4.5431	0.1501	-40.4067	-5.4893	-5.7633	-5.0433	-4.8233	-5.0233	-4.6233	-4.4777	-2.3134	-2.9729
i_soln	40	2.8272	-7.9443	-8.8692	-5.4035	-4.3735	-16.6568	2.4874	8.1802	11.4715	5.7815	-8.3787	-5.5256	-45.6974	-6.963	-7.237	-6.517	-6.297	-6.497	-6.097	-5.9514	-3.1627	-2.9709
i_soln	41	3.6759	-8.9053	-6.7182	-4.5678	-3.5378	-15.8377	7.1641	10.2364	16.753	8.1995	-5.7442	-0.2477	-41.7747	-6.1011	-6.3751	-5.6551	-5.4351	-5.6351	-5.2351	-5.0895	-2.1778	-3.0959
i_soln	42	6.739	-9.0825	-4.8234	-2.7342	-1.7042	-10.0977	13.6079	13.5751	22.9654	9.6452	-4.2008	5.9652	-35.0156	-4.5613	-4.8353	-4.1153	-3.8953	-4.0953	-3.6953	-3.5497	-1.3104	-3.5214
i_soln	43	-0.7456	-9.5244	-7.9054	-6.7505	-5.7205	-21.4666	-3.0393	5.1433	6.5325	0.1554	-13.0783	-10.4687	-51.4516	-8.6122	-8.8862	-8.1662	-7.9462	-8.1462	-7.7462	-7.6006	-3.8154	-3.2488
i_soln	44	-1.9896	-9.2662	-5.2452	-7.3494	-6.3194	-23.3099	-7.324	3.0015	2.2481	-7.5097	-19.7993	-14.7532	-53.8451	-9.0007	-9.2747	-8.5547	-8.3347	-8.5347	-8.1347	-7.9891	-4.5052	-3.2412
i_soln	45	-1.8775	-9.175	-5.1132	-7.348	-6.318	-23.4494	-7.3171	3.0057	2.2559	-7.9499	-20.24	-14.7456	-53.8337	-8.9807	-9.2547	-8.5347	-8.3147	-8.5147	-8.1147	-7.9691	-4.5243	-3.2412
i_soln	46	1.3476	-9.1645	-8.0335	-5.555	-4.525	-18.491	2.6033	7.9624	12.4829	5.5222	-8.1328	-4.8192	-45.7401	-7.1231	-7.3971	-6.6771	-6.4571	-6.6571	-6.2571	-6.1115	-2.8356	-3.1158
i_soln	47	7.484	-8.985	-4.0315	-3.0497	-2.0197	-10.4608	12.5353	12.881	22.1974	9.4151	-4.0626	5.198	-34.4134	-4.5115	-4.7855	-4.0655	-3.8455	-4.0455	-3.6455	-3.4999	-1.333	-3.3463
i_soln	48	9.2783	-8.735	-3.241	-1.7355	-0.7055	-7.2097	15.3415	14.0412	25.483	6.4471	-5.0765	8.4901	-29.5451	-3.1423	-3.4163	-2.6963	-2.4763	-2.6763	-2.2762	-2.1306	-0.492	-3.8361
i_soln	49	1.6087	-8.7179	-8.8601	-4.9722	-3.9422	-16.4952	4.2562	9.0802	13.7152	6.9001	-7.3025	-3.7618	-44.8814	-7.0147	-7.2887	-6.5687	-6.3487	-6.5487	-6.1487	-6.0031	-2.841	-3.2924
i_soln	50	7.2716	-8.2056	-5.5183	-2.8338	-1.8038	-8.6339	12.7399	13.4912	22.5275	11.3083	-3.3955	4.3549	-36.2467	-4.7958	-5.0698	-4.3498	-4.1298	-4.3298	-3.9298	-3.7842	-1.7355	-3.2695

state	soln	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL
i_soln	1	-48.2894	4.30E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.49E+01	4.00E+00	4.14E-02	1.07E-07	4.40E-95	1.00E-01	0.00E+00	3.50E+00	1.79E+00	2.00E-03	3.80E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	2.65E+02	3.00E+00	1.00E-01
i_soln	2	-47.8894	4.18E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	2.12E+01	7.00E+00	3.44E-02	1.12E-07	4.40E-95	1.00E-01	0.00E+00	2.83E+00	1.02E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.25E+02	3.00E+00	1.00E-01
i_soln	3	-47.0894	2.55E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.46E+01	2.00E+00	5.33E-02	2.68E-07	4.40E-95	1.00E-01	0.00E+00	1.41E+00	9.70E-01	1.70E-02	2.30E+02	1.00E+00	1.00E+00	2.00E+00	1.10E+01	1.00E+00	1.52E+02	1.00E+00	1.00E-01
i_soln	4	-46.6894	2.91E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.70E+01	2.00E+00	6.65E-02	4.24E-07	4.40E-95	1.00E-01	0.00E+00	2.40E+00	1.14E+00	1.70E-02	2.40E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.21E+02	1.00E+00	1.00E-01
i_soln	5	-48.2894	4.37E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.36E+01	5.00E+00	2.76E-02	7.13E-08	4.40E-95	1.00E-01	0.00E+00	2.64E+00	3.59E+00	3.00E-03	4.60E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.60E+02	3.00E+00	1.00E-01
i_soln	6	-49.0894	3.70E+01	5.00E+00	2.00E+00	1.00E+00	1.00E+00	2.01E+01	4.00E+00	2.62E-02	4.23E-08	4.40E-95	1.00E-01	0.00E+00	1.38E+00	1.93E+00	3.00E-03	3.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.95E+02	4.00E+00	1.00E-01
i_soln	7	-30.6894	3.77E+01	3.00E+00	1.00E+00	7.00E+00	1.00E+00	9.33E+00	2.00E+00	1.24E+01	7.91E-01	4.40E-95	2.00E-01	0.00E+00	4.60E-01	3.90E-01	1.10E-02	1.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.70E+01	1.00E+00	1.00E-01
i_soln	8	-30.6894	4.15E+01	2.00E+00	1.00E+00	9.00E+00	1.00E+00	9.30E+00	3.00E+00	1.40E+01	9.01E-01	4.40E-95	3.00E-01	0.00E+00	4.00E-01	4.60E-01	1.30E-02	1.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.10E+01	1.00E+00	1.00E-01
i_soln	9	-31.8894	1.24E+02	3.00E+00	1.00E+00	3.20E+01	1.00E+00	5.21E+00	7.00E+01	1.02E+01	3.57E-01	4.40E-95	5.00E-01	0.00E+00	1.70E-01	8.00E-02	1.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+01	1.00E+00	1.00E-01
i_soln	10	-34.6894	1.34E+02	3.00E+00	1.00E+00	3.10E+01	4.00E+00	1.16E+01	7.30E+01	9.37E+00	6.60E-02	4.40E-95	2.00E-01	0.00E+00	5.40E-01	3.70E-01	2.00E-03	1.30E+02	1.00E+00	1.00E+00	1.00E+00	3.00E+00	1.00E+00	2.00E+01	1.00E+00	1.00E-01
i_soln	11	-37.4894	1.86E+02	9.00E+00	1.00E+00	7.00E+00	2.70E+01	9.29E+00	1.27E+02	3.34E+00	4.87E-03	4.40E-95	3.00E-01	0.00E+00	9.00E-01	8.90E-01	4.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+00	4.80E+01	1.00E+00	1.00E-01
i_soln	12	-51.0899	2.44E+03	1.50E+01	3.01E+00	5.94E+02	8.52E+01	1.97E+02	1.54E+03	3.25E-03	2.72E-09	4.40E-95	1.00E-01	0.00E+00	6.71E-01	5.01E-02	1.10E-01	5.21E+02	1.00E+00	7.02E+00	1.00E+00	2.00E+00	2.41E+01	8.34E+02	1.00E+00	2.00E-01
i_soln	13	-35.8899	2.34E+03	9.02E+00	1.00E+00	5.74E+02	8.22E+01	1.30E+02	1.52E+03	2.23E+01	1.17E-01	4.40E-95	6.01E-01	0.00E+00	2.00E-02	5.01E-02	1.00E-03	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.01E+00	1.86E+02	1.00E+00	1.00E-01
i_soln	14	-38.2894	2.61E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	6.42E+00	2.00E+00	2.14E+00	1.69E-03	4.40E-95	1.00E-01	0.00E+00	3.85E+00	3.99E+00	7.00E-03	3.60E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	2.00E+00	1.89E+02	4.00E+00	1.00E-01
i_soln	15	-33.8894	1.06E+02	2.00E+00	1.00E+00	2.80E+01	1.00E+00	2.11E+01	1.30E+01	3.69E+01	4.00E-01	4.40E-95	7.00E-01	0.00E+00	1.55E+00	2.50E-01	1.00E-03	1.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.30E+01	1.00E+00	1.00E-01
i_soln	16	-41.8894	2.34E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.43E+00	3.00E+00	1.16E+00	1.15E-04	4.40E-95	1.00E-01	0.00E+00	1.94E+00	1.34E+00	5.00E-03	2.70E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.09E+02	2.00E+00	1.00E-01
i_soln	17	-47.4894	2.79E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.53E+01	3.00E+00	4.28E-02	1.72E-07	4.40E-95	1.00E-01	0.00E+00	1.56E+00	1.40E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.88E+02	2.00E+00	1.00E-01
i_soln	18	-47.4894	3.35E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.86E+01	3.00E+00	6.43E-02	2.59E-07	4.40E-95	1.00E-01	0.00E+00	1.58E+00	1.51E+00	1.00E-03	3.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.16E+02	3.00E+00	1.00E-01
i_soln	19	-49.2894	2.51E+01	4.50E+00	1.00E+00	1.00E+00	1.00E+00	1.31E+01	3.50E+00	7.75E-03	1.09E-08	4.40E-95	1.00E-01	0.00E+00	3.75E-01	2.40E-01	1.20E-02	1.95E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.50E+00	7.40E+01	1.00E+00	1.00E-01
i_soln	20	-46.2894	2.18E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.30E+01	1.00E+00	8.22E-02	6.51E-07	4.40E-95	1.00E-01	0.00E+00	1.72E+00	4.80E-01	1.00E-03	2.10E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	8.90E+01	1.00E+00	1.00E-01
i_soln	21	-45.8894	1.96E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.14E+01	1.00E+00	1.02E-01	1.01E-06	4.40E-95	1.00E-01	0.00E+00	9.50E-01	8.60E-01	1.00E-03	2.00E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	3.80E+01	1.00E+00	1.00E-01
i_soln	22	-44.6894	1.98E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.12E+01	1.00E+00	1.87E-01	3.70E-06	4.40E-95	1.00E-01	0.00E+00	1.19E+00	8.10E-01	4.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	7.70E+01	1.00E+00	1.00E-01
i_soln	23	-47.4894	3.47E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.96E+01	3.00E+00	4.29E-02	1.74E-07	4.40E-95	1.00E-01	0.00E+00	2.01E+00	1.28E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.73E+02	3.00E+00	1.00E-01
i_soln	24	-48.6894	3.17E+01	7.00E+00	1.00E+00	1.00E+00	1.00E+00	1.65E+01	4.00E+00	1.09E-02	2.19E-08	4.40E-95	1.00E-01	0.00E+00	5.30E-01	1.90E-01	3.00E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	4.80E+01	1.00E+00	1.00E-01
i_soln	25	-48.6894	7.24E+01	2.25E+01	1.00E+00	1.00E+00	1.00E+00	3.72E+01	8.50E+00	1.10E-02	2.30E-08	4.40E-95	1.00E-01	0.00E+00	5.30E-01	1.60E-01	1.00E-03	2.15E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	1.10E+02	1.00E+00	1.00E-01
i_soln	26	-49.4894	1.07E+02	3.40E+01	1.00E+00	1.00E+00	2.00E+00	5.08E+01	1.70E+01	7.07E-03	9.54E-09	4.40E-95	1.00E-01	0.00E+00	1.00E-02	5.00E-02	3.00E-03	2.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+00	5.74E+02	1.00E+00	1.00E-01
i_soln	27	-48.2894	2.03E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.33E+00	4.00E+00	2.72E-02	6.78E-08	4.40E-95	1.00E-01	0.00E+00	3.00E-01	2.70E-01	1.00E-03	2.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	4.60E+01	1.00E+00	1.00E-01
i_soln	28	-50.2894	6.04E+01	1.40E+01	1.00E+00	1.00E+00	3.00E+00	2.65E+01	1.40E+01	4.44E-03	3.67E-09	4.40E-95	1.00E-01	0.00E+00	2.40E-01	5.00E-02	6.00E-03	1.80E+02	1.00E+00	8.00E+00	1.00E+00	1.00E+00	1.40E+01	3.42E+02	1.00E+00	1.00E-01
i_soln	29	-49.8894	4.64E+01	1.10E+01	1.00E+00	1.00E+00	2.00E+00	2.08E+01	1.00E+01	5.55E-03	5.69E-09	4.40E-95	1.00E-01	0.00E+00	1.20E-01	5.00E-02	4.00E-03	1.10E+02	1.00E+00	5.00E+00	1.00E+00	1.00E+00	9.00E+00	2.25E+02	1.00E+00	1.00E-01
i_soln	30	-45.0894	2.96E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.62E+01	2.00E+00	2.31E-01	3.69E-06	4.40E-95	1.00E-01	0.00E+00	2.44E+00	2.05E+00	4.00E-03	3.60E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.86E+02	3.00E+00	1.00E-01
i_soln	31	-47.0894	4.46E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.51E+01	4.00E+00	8.07E-02	4.17E-07	4.40E-95	1.00E-01	0.00E+00	3.86E+00	2.68E+00	4.00E-03	4.50E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	3.03E+02	4.00E+00	1.00E-01
i_soln	32	-43.8894	3.62E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.76E+01	4.00E+00	4.10E-01	1.31E-05	4.40E-95	1.00E-01	0.00E+00	2.05E+00	3.41E+00	1.00E-03	3.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.81E+02	5.00E+00	1.00E-01
i_soln	33	-46.6894	3.26E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.02E+01	1.00E+00	6.66E-02	4.27E-07	4.40E-95	1.00E-01	0.00E+00	2.99E+00	1.89E+00	2.00E-03	2.50E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.03E+02	2.00E+00	1.00E-01
i_soln	34	-45.8894	3.44E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	2.08E+01	1.00E+00	1.54E-01	1.56E-06	4.40E-95	1.00E-01	0.00E+00	3.86E+00	3.14E+00	2.00E-03	2.20E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.02E+02	3.00E+00	1.00E-01
i_soln	35	-48.2894	3.74E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.19E+01	3.00E+00	2.75E-02	7.08E-08	4.40E-95	1.00E-01	0.00E+00	2.67E+00	3.20E+00	1.00E-03	3.30E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.29E+02	2.00E+00	1.00E-01
i_soln	36	-47.4894	5.76E+01	4.00E+00	3.00E+00	1.00E+00	1.00E+00	3.59E+01	2.00E+00	4.34E-02	1.82E-07	4.40E-95	1.00E-01	0.00E+00	5.88E+00	3.69E+00	2.00E-03	5.30E+02	1.00E+00	1.00E+00	5.00E+00	3.00E+00	1.00E+00	4.22E+02	7.00E+00	1.00E-01
i_soln	37	-47.4894	4.19E+01	5.00E+00	2.00E+00	1.00E+00	1.00E+00	2.53E+01	2.00E+00	4.31E-02	1.76E-07	4.40E-95	1.00E-01	0.00E+00	3.16E+00	1.61E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.59E+02	3.00E+00	1.00E-01
i_soln	38	-41.0894	5.59E+01	6.00E+00	2.00E+00	3.00E+00	1.00E+00	1.86E+01	4.00E+00	2.89E+00	4.73E-04	4.40E-95	2.00E-01	0.00E+00	1.06E+01	6.48E+00	4.10E-02	5.70E+02	1.00E+00	3.00E+00	1.10E+01	5.00E+00	9.00E+00	4.09E+02	9.00E+00	1.00E-01
i_soln	39	-43.4894	1.00E+02	9.00E+00	3.00E+00	3.00E+00	1.00E+00	5.09E+01	6.00E+00	8.24E-01	3.52E-05	4.40E-95	2.00E-01	0.00E+00	1.39E+01	1.06E+01	2.70E-02	8.30E+02	1.00E+00	4.00E+00	1.50E+01	9.00E+00	1.30E+01	6.60E+02	1.20E+01	1.00E-01
i_soln	40	-45.8894	7.38E+01	1.30E+01	2.00E+00	1.00E+00	1.00E+00	3.12E+01	1.60E+01	2.07E-01	2.18E-06	4.40E-95	2.00E-01	0.00E+00	4.49E+00	3.75E+00	2.00E-03	5.90E+02	1.00E+00	1.00E+00	3.00E+00	4.00E+00	1.00E+00	3.47E+02	8.00E+00	1.00E-01
i_soln	41	-43.0894	2.71E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.43E+01	1.00E+00	7.64E-01	3.83E-05	4.40E-95	1.00E-01	0.00E+00	2.21E+00	2.30E+00	3.60E-02	2.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	2.00E+00	9.20E+01	2.00E+00	1.00E-01
i_soln	42	-39.8894	2.46E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.47E+00	1.00E+00	1.81E+00	5.68E-04	4.40E-95	1.00E-01	0.00E+00	2.41E+00	3.46E+00	2.80E-02	2.40E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	3.00E+00	8.00E+01	3.00E+00	1.00E-01
i_soln	43	-47.4894	1.94E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	5.13E+00	8.00E+00	4.26E-02	1.68E-07	4.40E-95	1.00E-01	0.00E+00	4.10E-01	4.40E-01	4.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.50E+01	1.00E+00	1.00E-01
i_soln	44	-48.6894	1.96E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	6.19E+00	7.00E+00	2.17E-02	4.29E-08	4.40E-95	1.00E-01	0.00E+00	4.00E-02	5.00E-02	7.00E-03	1.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	7.30E+01	1.00E+00	1.00E-01
i_soln	45	-48.6894	1.91E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	7.63E+00	5.00E+00	2.17E-02	4.28E-08	4.40E-95	1.00E-01	0.00E+00	3.00E-02	5.00E-02	1.00E-03	1.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	7.60E+01	1.00E+00	1.00E-01
i_soln	46	-45.0894	2.22E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.18E+01	2.00E+00	2.31E-01	3.63E-06	4.40E-95	1.00E-01	0.00E+00	1.54E+00	1.16E+00	2.40E-02	2.50E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	3.00E+00	8.70E+01	2.00E+00	1.00E-01
i_soln	47	-39.8894	3.09E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	5.97E+00	8.00E+00	2.71E+00	8.61E-04	4.40E-95	3.00E-01	0.00E+00	2.91E+00	1.47E+00	6.00E-03	3.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	3.00E+00	9.20E+01	5.00E+00	1.00E-01
i_soln	48	-36.2894	3.43E+01	7.00E+00	1.00E+00	2.00E+00	1.00E+00	9.10E+00	5.00E+00	6.98E+00	1.76E-02	4.40E-95	4.00E-01	0.00E+00	7.40E-01	7.20E-01	3.00E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.60E+01	2.00E+00	1.00E-01
i_soln	49	-45.0894	3.80E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.23E+01	1.00E+00	1.55E-01	2.50E-06	4.40E-95	1.00E-01	0.00E+00	3.90E+00	4.10E+00	6.50E-02	2.70E+02	1.00E+00	3.00E+00	4.00E+00	4.00E+00	4.00E+00	1.15E+02	4.00E+00	1.00E-01
i_soln	50	-41.4894	8.27E+01	8.00E+00	3.00E+00	2.00E+00	1.00E+00	2.79E+01	1.30E+01	1.31E+00	1.75E-04	4.40E-95	2.00E-01	0.00E+00	1.06E+01	1.48E+01	2.30E-02	4.50E+02	1.00E+00	1.50E+01	1.50E+01	1.00E+01	2.40E+01	3.24E+02	1.40E+01	1.00E-01

state	soln	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
i_soln	1	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	2	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	3	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	4	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	5	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	6	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	7	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	8	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	9	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	10	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	11	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	12	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	13	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	14	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	15	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	16	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	17	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	18	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	19	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	20	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	21	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	22	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	23	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	24	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	25	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	26	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	27	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	28	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	29	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	30	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	31	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	32	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	33	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	34	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	35	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	36	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	37	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	38	1.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	39	1.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	40	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	41	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	42	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	43	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	44	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	45	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	46	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	47	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	48	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	49	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	50	2.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li	Mg	Mn	Na	N(-3)	N(5)
i_soln	51	6.2	4	7.11E-04	0.002	1	1.56E-16	6.26E-12	2.54E-04	2.67E-08	3.70E-05	1.11E-07	4.99E-05	8.90E-10	7.54E-04	6.79E-08	1.73E-07	1.10E-07	3.00E-05	5.26E-06	1.92E-04	5.12E-05	8.64E-07	4.11E-05	2.55E-07	4.79E-04	0.00E+00	0.00E+00
i_soln	52	5.55	4	4.31E-04	0.002	1	8.38E-14	3.21E-09	2.79E-04	1.33E-08	3.47E-05	1.11E-07	2.50E-05	8.90E-10	9.81E-04	5.94E-08	1.06E-07	7.08E-08	3.00E-05	5.26E-06	1.39E-04	5.12E-05	5.76E-07	4.11E-05	3.19E-07	4.57E-04	0.00E+00	0.00E+00
i_soln	53	5.3	4	1.00E-04	0.001	1	1.56E-13	9.16E-09	9.49E-05	1.33E-08	3.70E-05	1.11E-07	2.50E-05	8.90E-10	5.25E-04	3.39E-08	5.77E-08	4.72E-08	3.00E-05	5.26E-06	4.75E-05	2.56E-05	5.76E-07	4.11E-05	7.28E-08	4.35E-04	0.00E+00	0.00E+00
i_soln	54	8.4	4	3.61E-04	0.005	1	1.45E-15	1.88E-11	1.33E-05	1.34E-08	2.04E-05	1.11E-07	3.49E-04	8.90E-10	3.12E-03	1.70E-08	1.92E-08	1.57E-08	2.90E-04	3.16E-05	2.51E-06	2.56E-05	1.44E-07	2.06E-04	1.82E-08	2.74E-03	0.00E+00	0.00E+00
i_soln	55	9.5	4	6.87E-04	0.002	1	-1.56E-14	-3.84E-10	4.63E-05	1.33E-08	2.68E-05	1.11E-07	9.98E-05	8.90E-10	1.21E-03	1.70E-08	1.92E-08	1.57E-08	3.40E-04	3.16E-05	1.40E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.74E-03	0.00E+00	0.00E+00
i_soln	56	10	4	1.02E-03	0.002	1	-1.86E-18	-5.19E-14	4.86E-05	8.01E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	7.19E-04	1.70E-08	1.92E-08	3.15E-08	4.60E-04	2.63E-05	1.68E-05	2.56E-05	2.88E-07	4.11E-05	1.09E-07	1.65E-03	0.00E+00	0.00E+00
i_soln	57	5.3	4	1.09E-04	8E-04	1	2.44E-20	2.29E-15	8.97E-05	1.33E-08	1.76E-05	1.11E-07	2.50E-05	8.90E-10	5.12E-04	1.70E-08	3.85E-08	4.72E-08	2.00E-05	5.26E-06	6.34E-05	2.56E-05	1.44E-07	4.11E-05	4.19E-07	8.70E-05	0.00E+00	0.00E+00
i_soln	58	4.8	4	4.94E-05	0.001	1	1.96E-16	1.18E-11	1.29E-04	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	7.65E-04	1.70E-08	7.69E-08	1.57E-08	2.00E-05	5.26E-06	9.53E-05	5.12E-05	1.44E-07	4.11E-05	2.00E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	59	4.6	4	2.30E-05	0.001	1	7.01E-14	3.95E-09	1.52E-04	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	8.29E-04	1.70E-08	7.69E-08	3.15E-08	2.00E-05	5.26E-06	4.33E-05	7.67E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	60	7.2	4	3.75E-05	0.002	1	8.63E-19	3.59E-14	4.45E-06	1.33E-08	1.02E-05	1.11E-07	3.24E-04	8.90E-10	6.42E-05	8.48E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	8.95E-07	2.56E-05	2.88E-07	2.06E-04	4.02E-06	1.74E-04	0.00E+00	0.00E+00
i_soln	61	6.5	4	3.53E-05	0.001	1	9.94E-14	8.18E-09	7.04E-06	1.33E-08	1.02E-05	1.11E-07	1.75E-04	8.90E-10	6.46E-05	2.55E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.61E-06	2.56E-05	1.44E-07	4.11E-05	1.35E-05	1.31E-04	0.00E+00	0.00E+00
i_soln	62	5.2	4	8.68E-07	0.001	1	5.71E-13	3.52E-08	1.11E-05	1.33E-08	1.48E-05	1.11E-07	1.25E-04	8.90E-10	1.95E-04	1.36E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	5.01E-06	2.56E-05	2.88E-07	1.65E-04	8.72E-06	1.74E-04	0.00E+00	0.00E+00
i_soln	63	4.5	4	-3.70E-05	0.006	1	-9.04E-19	-1.41E-14	5.93E-06	1.34E-08	1.67E-05	1.11E-07	1.10E-03	8.90E-10	2.32E-04	5.94E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	2.15E-06	2.56E-05	2.88E-07	5.35E-04	3.42E-05	2.61E-04	0.00E+00	0.00E+00
i_soln	64	6.7	4	5.11E-04	5E-04	1	1.48E-13	1.79E-08	1.22E-04	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	2.68E-04	1.70E-08	5.77E-08	1.57E-08	4.00E-05	1.05E-05	6.36E-05	2.56E-05	2.88E-07	4.11E-05	5.28E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	65	7.4	4	6.99E-04	4E-04	1	1.34E-16	1.89E-11	1.30E-04	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	1.30E-04	3.39E-08	7.69E-08	3.15E-08	5.00E-05	1.05E-05	6.54E-05	2.56E-05	1.44E-07	4.11E-05	9.47E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	66	8.5	4	2.25E-03	0.001	1	-1.68E-18	-8.35E-14	3.93E-04	4.00E-08	5.83E-05	2.22E-07	4.99E-05	8.90E-10	1.40E-04	5.09E-08	7.69E-08	7.87E-08	7.99E-05	5.79E-05	1.93E-04	7.67E-05	5.76E-07	4.11E-05	4.00E-07	6.96E-04	0.00E+00	0.00E+00
i_soln	67	9.3	4	6.21E-04	0.001	1	6.69E-20	3.88E-15	4.93E-05	2.67E-08	2.04E-05	1.11E-07	7.49E-05	8.90E-10	2.61E-04	1.70E-08	1.92E-08	1.57E-08	3.00E-04	2.11E-05	1.63E-05	2.56E-05	2.88E-07	4.11E-05	1.27E-07	6.09E-04	0.00E+00	0.00E+00
i_soln	68	9.6	4	6.58E-04	0.001	1	-1.04E-15	-4.34E-11	3.85E-05	2.67E-08	1.57E-05	1.11E-07	2.50E-05	8.90E-10	3.59E-04	3.39E-08	7.69E-08	1.51E-06	3.30E-04	2.11E-05	1.41E-05	2.56E-05	8.65E-07	4.11E-05	4.73E-07	1.04E-03	0.00E+00	0.00E+00
i_soln	69	4.65	4	1.52E-07	7E-04	1	2.07E-15	2.11E-10	6.19E-05	1.33E-08	3.15E-05	1.11E-07	2.50E-05	8.90E-10	4.46E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	2.29E-05	2.56E-05	1.44E-07	4.11E-05	1.55E-07	1.09E-04	0.00E+00	0.00E+00
i_soln	70	4.4	4	-3.41E-05	7E-04	1	1.36E-17	1.53E-12	4.11E-05	1.33E-08	1.94E-05	1.11E-07	2.50E-05	8.90E-10	2.98E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.77E-06	2.56E-05	1.44E-07	4.11E-05	9.83E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	71	4.5	4	-2.88E-05	5E-04	1	2.22E-17	3.02E-12	1.78E-05	1.33E-08	1.67E-05	1.11E-07	2.50E-05	8.90E-10	2.49E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.51E-06	2.56E-05	1.44E-07	4.11E-05	2.18E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	72	8.6	4	4.13E-04	9E-04	1	-1.05E-16	-8.26E-12	2.93E-05	1.33E-08	2.13E-05	1.11E-07	2.00E-04	8.90E-10	2.77E-04	1.70E-08	1.92E-08	1.57E-08	2.60E-04	2.11E-05	6.80E-06	2.56E-05	1.44E-07	4.11E-05	1.64E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	73	9.2	4	3.75E-04	0.001	1	-1.87E-15	-1.31E-10	2.11E-05	1.33E-08	2.04E-05	1.11E-07	2.25E-04	8.90E-10	2.20E-04	1.70E-08	1.92E-08	1.57E-08	2.20E-04	1.58E-05	5.91E-06	2.56E-05	1.44E-07	4.11E-05	1.46E-07	1.74E-04	0.00E+00	0.00E+00
i_soln	74	9.4	4	3.79E-04	0.001	1	-3.13E-15	-2.19E-10	1.74E-05	1.33E-08	1.94E-05	1.11E-07	2.25E-04	8.90E-10	2.58E-04	1.70E-08	1.92E-08	1.57E-08	2.20E-04	2.11E-05	5.01E-06	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	75	9.1	4	8.30E-04	0.002	1	-4.73E-19	-1.45E-14	8.86E-05	1.33E-08	3.24E-05	1.11E-07	1.50E-04	8.90E-10	4.22E-04	1.70E-08	3.85E-08	1.57E-08	3.60E-04	4.74E-05	1.65E-05	2.56E-05	2.88E-07	1.23E-04	7.28E-08	1.09E-03	0.00E+00	0.00E+00
i_soln	76	9.1	4	5.22E-04	0.003	1	7.14E-19	1.74E-14	2.85E-05	1.33E-08	7.96E-05	1.11E-07	1.50E-04	8.90E-10	4.29E-04	1.70E-08	3.85E-08	6.30E-08	3.20E-04	6.32E-05	3.22E-06	2.56E-05	1.44E-07	1.23E-04	1.82E-08	1.52E-03	0.00E+00	0.00E+00
i_soln	77	9.6	4	9.69E-04	0.002	1	1.65E-18	5.19E-14	9.38E-05	1.33E-08	5.64E-05	1.11E-07	7.49E-05	8.90E-10	3.70E-04	1.70E-08	3.85E-08	6.30E-08	3.50E-04	4.74E-05	2.35E-05	2.56E-05	4.32E-07	4.11E-05	9.10E-08	1.35E-03	0.00E+00	0.00E+00
i_soln	78	9.5	4	7.17E-04	0.002	1	5.89E-19	1.76E-14	5.86E-05	4.00E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	5.17E-04	1.70E-08	1.92E-08	1.57E-08	2.90E-04	3.68E-05	2.40E-05	2.56E-05	4.32E-07	4.11E-05	1.82E-07	1.52E-03	0.00E+00	0.00E+00
i_soln	79	4.75	4	3.57E-06	7E-04	1	4.71E-14	5.07E-09	4.84E-05	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	4.09E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.10E-05	2.56E-05	1.44E-07	4.11E-05	2.73E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	80	4.8	4	1.08E-06	7E-04	1	4.49E-15	4.50E-10	3.82E-05	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	3.85E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.02E-05	2.56E-05	7.20E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
i_soln	81	5.3	4	4.35E-05	4E-04	1	-1.72E-16	-2.96E-11	3.97E-05	1.33E-08	1.76E-05	1.11E-07	2.50E-05	8.90E-10	2.69E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.16E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	4.35E-05	0.00E+00	0.00E+00
i_soln	82	5.5	4	1.04E-04	5E-04	1	4.69E-17	6.05E-12	6.93E-05	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	3.64E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.67E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	83	5	4	3.18E-05	6E-04	1	1.04E-13	1.17E-08	5.37E-05	1.33E-08	2.59E-05	1.11E-07	2.50E-05	8.90E-10	4.06E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.43E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	84	5.3	4	4.68E-05	5E-04	1	9.52E-15	1.31E-09	4.34E-05	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	3.23E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.88E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
i_soln	85	5.2	4	1.37E-04	0.001	1	1.73E-19	1.17E-14	1.31E-04	3.34E-08	3.61E-05	1.11E-07	2.50E-05	8.90E-10	6.83E-04	1.70E-08	3.85E-08	1.57E-08	2.50E-05	5.26E-06	7.36E-05	5.12E-05	2.16E-07	4.11E-05	3.64E-08	1.52E-04	0.00E+00	0.00E+00
i_soln	86	6.2	4	6.86E-04	1E-03	1	-2.38E-16	-1.62E-11	2.46E-04	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	6.05E-04	5.09E-08	1.15E-07	6.29E-08	3.00E-05	5.26E-06	1.33E-04	5.12E-05	4.32E-07	4.11E-05	5.82E-07	1.31E-04	0.00E+00	0.00E+00
i_soln	87	5.6	4	1.90E-04	7E-04	1	2.41E-19	2.36E-14	1.13E-04	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	4.65E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.26E-05	2.56E-05	2.88E-07	4.11E-05	2.18E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	88	5.6	4	1.75E-04	7E-04	1	-2.50E-19	-2.49E-14	1.05E-04	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	4.39E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.40E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-07	1.30E-04	0.00E+00	0.00E+00
i_soln	89	5.7	4	1.23E-04	7E-04	1	1.43E-14	1.29E-09	6.97E-05	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	4.27E-04	1.70E-08	1.92E-08	3.15E-08	2.00E-05	5.26E-06	2.26E-05	2.56E-05	2.88E-07	4.11E-05	7.28E-08	2.61E-04	0.00E+00	0.00E+00
i_soln	90	4.8	4	-1.36E-05	0.003	1	1.45E-18	4.42E-14	1.96E-05	1.33E-08	1.94E-05	1.11E-07	3.24E-04	8.90E-10	3.69E-04	8.49E-08	1.92E-08	3.15E-08	9.99E-06	5.26E-06	3.22E-06	2.56E-05	2.88E-07	1.65E-04	1.69E-06	6.53E-04	0.00E+00	0.00E+00
i_soln	91	6.6	4	1.93E-04	0.002	1	2.78E-14	1.06E-09	4.67E-05	1.33E-08	1.94E-05	1.11E-07	2.25E-04	8.90E-10	4.66E-04	1.70E-08	1.92E-08	3.15E-08	3.00E-05	5.26E-06	2.47E-05	2.56E-05	1.44E-07	8.23E-05	4.00E-07	6.53E-04	0.00E+00	0.00E+00
i_soln	92	6.2	4	1.69E-04	5E-04	1	3.96E-14	4.78E-09	6.23E-05	1.33E-08	3.52E-05	1.11E-07	2.50E-05	8.90E-10	3.20E-04	1.70E-08	1.92E-08	1.57E-08	3.00E-05	1.05E-05	1.67E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	93	5	4	1.17E-05	5E-04	1	7.24E-17	9.55E-12	3.00E-05	1.33E-08	2.68E-05	1.11E-07	2.50E-05	8.90E-10	3.20E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.70E-06	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	94	4.9	4	3.29E-06	6E-04	1	9.55E-16	1.15E-10	2.78E-05	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	3.37E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	4.83E-06	2.56E-05	4.32E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	95	4.5	4	-3.28E-05	0.001	1	2.69E-16	1.94E-11	3.34E-06	1.33E-08	1.39E-05	1.11E-07	1.25E-04	8.90E-10	2.08E-04	3.39E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	8.64E-07	8.23E-05	7.46E-07	2.18E-04	0.00E+00	0.00E+00
i_soln	96	4.7	4	-1.23E-05	6E-04	1	3.84E-16	4.61E-11	2.48E-05	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	2.61E-04	1.70E-08	1.92E-08	1.57E-08	1.50E-05	5.26E-06	4.30E-06	2.56E-05	6.48E-07	4.11E-05	6.37E-08	1.74E-04	0.00E+00	0.00E+00
i_soln	97	4.6	4	-2.31E-05	8E-04	1	8.67E-17	8.11E-12	1.52E-05	1.33E-08	1.76E-05	1.11E-07	7.49E-05	8.90E-10	2.15E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.79E-06	2.56E-05	5.76E-07	4.11E-05	2.55E-07	2.17E-04	0.00E+00	0.00E+00
i_soln	98	4.7	4	-1.65E-05	9E-04	1	1.16E-15	9.71E-11	1.80E-05	1.33E-08	1.62E-05	1.11E-07	7.49E-05	8.90E-10	2.10E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.06E-06	2.56E-05	7.20E-07	4.11E-05	2.73E-07	2.83E-04	0.00E+00	0.00E+00
i_soln	99	7	4	2.60E-04	0.006	1	1.13E-18	1.71E-14	3.48E-05	1.34E-08	2.22E-05	1.11E-07	1.45E-03	8.90E-10	8.46E-05	1.70E-08	1.92E-08	1.57E-08	1.30E-04	1.05E-05	1.27E-05	2.56E-05	4.32E-07	2.06E-04	3.64E-08	4.58E-04	0.00E+00	0.00E+00
i_soln	100	4.4	4	-4.31E-05	0.003	1	1.94E-13	4.36E-09	2.37E-05	1.33E-08	1.94E-05	1.11E-07	2.25E-04	8.90E-10	6.68E-04	3.39E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	6.09E-06	2.56E-05	1.44E-06	1.65E-04	2.37E-07	1.39E-03	0.00E+00	0.00E+00

state	soln	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite
i_soln	51	2.04E-07	0.00E+00	4.83E-08	2.08E-04	0.00E+00	3.93E-07	4.53E-06	2.05E-13	1.67E-09	9.02E-06	1.48E-07	2.61E-13	9.23E-16	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	9.37E-08	0.00E+00	2.90E-08	1.77E-04	0.00E+00	1.96E-07	4.10E-06	1.58E-13	2.86E-10	3.46E-07	1.27E-09	1.56E-13	4.33E-16	-1.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	5.11E-08	0.00E+00	1.45E-08	1.77E-04	0.00E+00	1.96E-07	2.91E-06	5.16E-14	5.50E-11	3.83E-08	7.96E-11	5.87E-14	1.74E-16	-1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	1.70E-08	0.00E+00	4.83E-09	2.08E-04	0.00E+00	1.96E-07	5.35E-07	6.72E-19	7.58E-13	6.01E-07	1.52E-06	6.08E-19	1.90E-21	-1.85E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	1.70E-08	0.00E+00	4.83E-09	1.56E-04	0.00E+00	1.96E-07	6.12E-07	6.26E-22	9.81E-15	1.04E-07	3.36E-06	5.61E-22	1.48E-24	-2.14E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	5.11E-08	0.00E+00	9.65E-09	1.25E-04	0.00E+00	1.96E-07	6.88E-07	8.91E-24	4.47E-16	1.51E-08	1.55E-06	6.66E-24	1.43E-26	-2.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.25E-06	6.83E-14	7.58E-11	5.40E-08	1.13E-10	4.96E-15	8.81E-19	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	2.63E-06	1.07E-13	3.58E-11	7.85E-09	5.15E-12	2.30E-14	1.30E-17	-1.31E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	1.70E-08	0.00E+00	2.90E-08	4.16E-05	0.00E+00	1.96E-07	4.30E-06	4.88E-14	1.03E-11	1.42E-09	5.86E-13	9.47E-15	4.88E-18	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	1.38E-06	0.00E+00	4.83E-09	5.93E-04	0.00E+00	1.96E-07	1.56E-06	1.54E-16	1.22E-11	6.47E-07	1.05E-07	5.10E-16	4.93E-18	-1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	3.58E-07	0.00E+00	4.83E-09	2.71E-04	0.00E+00	1.96E-07	1.09E-06	1.42E-15	2.41E-11	2.68E-07	8.82E-09	2.65E-15	1.28E-17	-1.50E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	1.36E-07	0.00E+00	4.83E-09	3.23E-04	0.00E+00	1.96E-07	9.64E-07	5.41E-15	4.51E-12	2.47E-09	4.06E-12	1.12E-14	6.26E-17	-1.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	4.09E-07	0.00E+00	4.83E-09	1.73E-03	0.00E+00	1.96E-07	2.78E-06	2.47E-15	3.33E-13	3.23E-11	1.02E-14	1.52E-14	3.50E-16	-1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	5.11E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.10E-06	4.25E-14	1.21E-09	2.20E-05	1.16E-06	3.55E-15	6.97E-19	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	5.11E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	1.71E-06	3.67E-15	5.31E-10	4.86E-05	1.29E-05	6.33E-16	2.53E-19	-1.45E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	4.43E-07	0.00E+00	4.34E-08	1.46E-04	0.00E+00	1.96E-07	4.27E-06	1.97E-17	3.31E-11	3.65E-05	1.20E-04	1.96E-17	5.14E-20	-1.69E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	5.11E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	6.42E-07	3.48E-21	3.74E-14	2.62E-07	5.45E-06	2.04E-21	3.08E-24	-2.06E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	1.02E-07	0.00E+00	4.83E-09	1.67E-04	0.00E+00	1.96E-07	1.19E-06	2.44E-22	5.08E-15	6.97E-08	2.88E-06	2.68E-22	7.95E-25	-2.18E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	1.70E-08	0.00E+00	4.83E-09	2.60E-05	0.00E+00	1.96E-07	1.45E-06	2.46E-14	6.12E-12	9.78E-10	4.59E-13	4.13E-15	1.69E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	1.70E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	5.35E-07	9.27E-15	1.31E-12	1.18E-10	3.11E-14	5.36E-15	7.49E-18	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	1.70E-08	0.00E+00	4.83E-09	6.25E-05	0.00E+00	1.96E-07	4.44E-07	2.61E-15	4.71E-13	5.40E-11	1.80E-14	1.27E-15	1.44E-18	-1.47E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	5.35E-07	3.27E-19	7.13E-13	1.01E-06	4.18E-06	4.88E-20	1.82E-23	-1.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	1.70E-08	0.00E+00	4.83E-09	1.04E-04	0.00E+00	1.96E-07	4.28E-07	2.89E-21	2.47E-14	1.37E-07	2.27E-06	2.07E-21	3.82E-24	-2.07E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	1.70E-08	0.00E+00	4.83E-09	7.29E-05	0.00E+00	1.96E-07	3.67E-07	4.60E-22	6.23E-15	5.50E-08	1.44E-06	2.32E-22	2.99E-25	-2.15E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	3.41E-08	0.00E+00	4.83E-09	3.44E-04	0.00E+00	1.96E-07	1.13E-06	2.07E-20	1.30E-13	5.49E-07	7.10E-06	4.09E-20	2.35E-22	-1.99E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	1.70E-08	0.00E+00	4.83E-09	5.93E-04	0.00E+00	1.96E-07	1.74E-06	4.28E-21	2.60E-14	1.08E-07	1.38E-06	1.35E-20	1.31E-22	-2.06E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	3.41E-08	0.00E+00	9.65E-09	2.92E-04	0.00E+00	1.96E-07	2.20E-06	4.29E-22	8.61E-15	1.16E-07	4.74E-06	7.52E-22	3.77E-24	-2.16E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	6.82E-08	0.00E+00	9.65E-09	3.33E-04	0.00E+00	1.96E-07	1.18E-06	1.05E-21	1.67E-14	1.78E-07	5.79E-06	2.10E-21	1.21E-23	-2.12E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	1.34E-06	2.23E-14	7.04E-12	1.42E-09	8.40E-13	4.80E-15	2.49E-18	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	1.70E-08	0.00E+00	9.65E-09	6.25E-05	0.00E+00	1.96E-07	1.38E-06	1.08E-14	3.83E-12	8.65E-10	5.73E-13	4.82E-15	5.20E-18	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	8.11E-07	7.43E-15	8.58E-12	6.26E-09	1.32E-11	6.26E-16	1.21E-19	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	2.26E-06	1.75E-14	3.15E-11	3.62E-08	1.21E-10	1.42E-15	2.73E-19	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	1.68E-06	1.52E-14	8.58E-12	3.09E-09	3.25E-12	2.26E-15	8.06E-19	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	9.94E-07	1.97E-14	2.25E-11	1.63E-08	3.42E-11	3.21E-15	1.22E-18	-1.38E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	3.15E-06	8.11E-14	6.95E-11	3.87E-08	6.40E-11	1.55E-14	7.59E-18	-1.32E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	1.70E-07	0.00E+00	3.38E-08	2.08E-05	0.00E+00	1.96E-07	2.75E-06	1.39E-13	1.20E-09	6.69E-06	1.11E-07	2.04E-14	7.63E-18	-1.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	3.41E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	1.96E-06	3.47E-14	7.74E-11	1.10E-07	4.62E-10	5.38E-15	2.02E-18	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	3.41E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	2.17E-06	3.62E-14	8.06E-11	1.15E-07	4.81E-10	8.43E-15	4.76E-18	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	1.70E-08	0.00E+00	9.65E-09	6.25E-05	0.00E+00	1.96E-07	1.56E-06	2.39E-14	6.68E-11	1.20E-07	6.29E-10	1.12E-14	1.29E-17	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	1.19E-07	0.00E+00	4.83E-09	6.87E-04	0.00E+00	1.96E-07	1.04E-06	3.58E-15	1.10E-12	2.29E-10	1.48E-13	1.28E-14	1.39E-16	-1.47E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	3.41E-08	0.00E+00	9.65E-09	4.16E-04	0.00E+00	1.96E-07	1.13E-06	2.08E-14	4.19E-10	5.63E-06	2.31E-07	5.10E-14	3.56E-16	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	2.16E-06	1.66E-14	1.49E-10	8.58E-07	1.43E-08	4.16E-15	2.46E-18	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	1.21E-06	8.08E-15	4.60E-12	1.67E-09	1.76E-12	1.94E-15	1.10E-18	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	1.70E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	5.66E-07	5.09E-15	2.29E-12	6.58E-10	5.50E-13	1.61E-15	1.20E-18	-1.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	6.82E-08	0.00E+00	4.83E-09	2.50E-04	0.00E+00	1.96E-07	1.70E-06	9.57E-16	1.63E-13	1.80E-11	5.92E-15	1.64E-15	7.28E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	5.96E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	6.19E-07	4.51E-15	1.28E-12	2.30E-10	1.21E-13	2.82E-15	4.20E-18	-1.45E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	3.41E-08	0.00E+00	4.83E-09	1.67E-04	0.00E+00	1.96E-07	5.35E-07	1.89E-15	4.15E-13	5.88E-11	2.45E-14	2.28E-15	6.84E-18	-1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	4.26E-08	0.00E+00	4.83E-09	2.03E-04	0.00E+00	1.96E-07	6.96E-07	2.18E-15	5.98E-13	1.06E-10	5.55E-14	3.13E-15	1.13E-17	-1.48E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	1.70E-08	0.00E+00	4.83E-09	1.79E-03	0.00E+00	1.96E-07	7.19E-07	5.52E-15	2.34E-10	7.17E-06	7.14E-07	3.48E-14	8.28E-16	-1.46E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	1.87E-07	0.00E+00	4.83E-09	8.33E-04	0.00E+00	1.96E-07	3.29E-06	6.84E-15	8.11E-13	6.61E-11	1.69E-14	2.78E-14	3.61E-16	-1.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	Fe(VO3)2	d_Fe(VO3)2	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Al2O3	d_Al2O3	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Celestite	Anglesite	d_Anglesite	Ba3(AsO4)2	d_Ba3(AsO4)2	Halite	d_Halite	Fluorite	d_Fluorite	Cu(OH)2	d_Cu(OH)2	Tenorite	d_Tenorite	Brochantite	d_Brochantite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	CoFe2O4	d_CoFe2O4	Hercynite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hercynite	Spinel	d_Spinel	Magnesioferrite	d_Magnesioferrite	Minium	d_Minium	Zn(OH)2	d_Zn(OH)2	Zn(OH)2(am)	d_Zn(OH)2 (am)	Zn(OH)2(beta)	d_Zn(OH)2 (beta)	Zn(OH)2(epsilon)	d_Zn(OH)2 (epsilon)	Zn(OH)2(gamma)	d_Zn(OH)2 (gamma)	Zincite	d_Zincite	ZnO(active)	d_ZnO(active)	Be(OH)2(beta)
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Be(OH)2 (beta)	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite
i_soln	51	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.9606	-5.1406	-9.8723	-10.4223	-6.0617	-24.0377	-8.8517	-15.1986	-37.3977	5.2387	5.0733	12.8773	4.3587	16.6182	-5.0023	-0.201	2.5386
i_soln	52	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.3862	-6.5662	-12.4231	-12.9731	-7.1869	-28.8388	-9.9769	-17.623	-43.1976	3.1718	0.9396	8.7436	2.2918	11.0676	-6.4192	-5.7517	0.4718
i_soln	53	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.8448	-7.0248	-13.34	-13.89	-7.6452	-30.6725	-10.4353	-18.5679	-45.5176	1.9697	-1.4646	6.3394	1.0897	7.7113	-7.3713	-9.1079	-0.7303
i_soln	54	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.6309	-0.8109	-1.3594	-1.9094	-1.8785	-7.1585	-4.6687	-5.9637	-15.6133	6.2512	7.0985	14.9025	5.3712	17.4559	-6.1898	0.6365	3.5511
i_soln	55	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0481	-0.2281	-0.3437	-0.8937	-1.4456	-5.2769	-4.2357	-4.0104	-12.3612	6.5955	7.7871	15.5911	5.7155	17.3889	-6.9455	0.5696	3.8955
i_soln	56	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.1769	-0.3569	0.0122	-0.5378	-0.9608	-3.9514	-3.7509	-2.5531	-9.4497	6.2591	7.1142	14.9182	5.3791	15.8795	-7.7819	-0.9398	3.5591
i_soln	57	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.9961	-7.1761	-13.6448	-14.1948	-7.7987	-31.2843	-10.5888	-18.6991	-46.1093	2.1218	-1.1604	6.6436	1.2418	8.1677	-7.2192	-8.6516	-0.5782
i_soln	58	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.9871	-8.1671	-15.6266	-16.1766	-8.7895	-35.2475	-11.5795	-20.7061	-51.0885	0.7811	-3.8418	3.9622	-0.0989	4.6455	-8.0599	-12.1737	-1.9189
i_soln	59	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3847	-8.5647	-16.4217	-16.9717	-9.1871	-36.8379	-11.9771	-21.5059	-53.0811	-0.1633	-5.7306	2.0734	-1.0433	2.0122	-8.8043	-14.807	-2.8633
i_soln	60	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.0436	-3.2236	-6.1481	-6.6981	-4.2545	-16.6992	-7.0446	-10.7206	-27.4982	5.0915	4.779	12.583	4.2115	15.1768	-6.1495	-1.6425	2.3915
i_soln	61	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.1334	-4.3134	-8.7609	-9.3109	-5.7776	-22.3581	-8.5676	-14.3032	-35.6499	4.0145	2.6249	10.4289	3.1345	12.6456	-6.5265	-4.1736	1.3145
i_soln	62	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.5297	-6.7097	-12.8048	-13.3548	-7.4251	-29.6971	-10.2152	-17.9591	-44.2485	0.6774	-4.0492	3.7548	-0.2026	3.9344	-8.5636	-12.8848	-2.0226
i_soln	63	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.0809	-7.2609	-14.3307	-14.8807	-8.3997	-33.1721	-11.1898	-19.9327	-49.1459	-1.923	-9.25	-1.446	-2.803	-3.1668	-10.464	-19.9861	-4.6231
i_soln	64	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.3664	-4.5464	-8.3856	-8.9356	-5.1692	-20.7661	-7.9592	-13.2618	-32.7835	6.1343	6.8646	14.6686	5.2543	18.805	-4.6067	1.9858	3.4343
i_soln	65	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.4453	-3.6253	-6.5433	-7.0933	-4.248	-17.0814	-7.038	-10.9378	-27.6959	7.1792	8.9544	16.7584	6.2992	21.2398	-4.2618	4.4206	4.4792
i_soln	66	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.8584	-2.0384	-3.6705	-4.2205	-2.9621	-11.6367	-5.7521	-7.4884	-20.3887	8.148	10.8919	18.6959	7.268	23.0461	-4.393	6.2269	5.4479
i_soln	67	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.3497	-0.5297	-0.8243	-1.3743	-1.6246	-6.1156	-4.4147	-4.5518	-13.4397	6.8057	8.2073	16.0113	5.9257	18.2192	-6.5353	1.3999	4.1056
i_soln	68	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.5566	-0.7366	-0.7568	-1.3068	-1.3502	-5.4992	-4.1403	-3.7014	-11.766	6.5279	7.6518	15.4558	5.6479	17.0859	-7.1131	0.2667	3.8279
i_soln	69	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2668	-8.4468	-16.186	-16.736	-9.0692	-36.3665	-11.8593	-21.2694	-52.4911	-0.2696	-5.9431	1.8609	-1.1496	1.6435	-8.9606	-15.1757	-2.9696
i_soln	70	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.066	-9.246	-17.7837	-18.3337	-9.8677	-39.561	-12.6577	-22.569	-56.186	-1.4387	-8.2815	-0.4775	-2.3187	-1.614	-9.8797	-18.4332	-4.1387
i_soln	71	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.8607	-9.0407	-17.3731	-17.9231	-9.6625	-38.7401	-12.4525	-22.1574	-55.1588	-1.6757	-8.7555	-0.9515	-2.5557	-2.425	-10.2167	-19.2442	-4.3757
i_soln	72	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.6291	-0.8091	-1.8131	-2.3631	-2.334	-8.523	-5.124	-6.6438	-17.6597	6.6906	7.9773	15.7813	5.8106	18.5741	-5.9504	1.7549	3.9906
i_soln	73	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0994	-0.2794	-0.8028	-1.3528	-1.8533	-6.5514	-4.6433	-4.9777	-14.5516	6.4253	7.4465	15.2505	5.5453	17.178	-6.8157	0.3587	3.7252
i_soln	74	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0761	-0.1039	-0.4518	-1.0018	-1.6779	-5.8495	-4.4679	-4.4035	-13.4511	6.2276	7.0512	14.8552	5.3476	16.385	-7.2134	-0.4342	3.5276
i_soln	75	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.202	-0.382	-0.3513	-0.9013	-1.2993	-4.9919	-4.0894	-4.1857	-12.0976	6.9204	8.4369	16.2409	6.0404	18.7635	-6.2206	1.9442	4.2204
i_soln	76	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.2794	-0.4594	-0.5047	-1.0547	-1.3753	-5.2972	-4.1654	-4.2832	-12.4231	6.2103	7.0167	14.8207	5.3303	16.6333	-6.9307	-0.186	3.5103
i_soln	77	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0821	-0.2621	-0.2841	-0.8341	-1.352	-5.0301	-4.1421	-3.7223	-11.7923	6.7452	8.0864	15.8904	5.8652	17.7378	-6.8958	0.9185	4.0452
i_soln	78	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.7158	-0.8958	-1.0763	-1.6263	-1.5105	-6.1394	-4.3006	-4.078	-12.6236	6.8314	8.2589	16.0629	5.9514	18.0966	-6.7096	1.2773	4.1314
i_soln	79	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3684	-8.5484	-16.3892	-16.9392	-9.1708	-36.7728	-11.9608	-21.1692	-52.6956	-0.0069	-5.4177	2.3863	-0.8869	2.3317	-8.7979	-14.4876	-2.7069
i_soln	80	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2731	-8.4531	-16.198	-16.748	-9.0749	-36.3899	-11.865	-20.9761	-52.215	-0.1727	-5.7493	2.0547	-1.0527	1.7842	-9.0137	-15.035	-2.8727
i_soln	81	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.9821	-7.1621	-13.6167	-14.1667	-7.7847	-31.2281	-10.5747	-18.6712	-46.0393	1.1895	-3.025	4.779	0.3095	5.3707	-8.1515	-11.4485	-1.5105
i_soln	82	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.6079	-6.7879	-12.8685	-13.4185	-7.4106	-29.7316	-10.2006	-17.9022	-44.1479	2.15	-1.104	6.7	1.27	8.0521	-7.391	-8.7671	-0.55
i_soln	83	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5735	-7.7535	-14.7994	-15.3494	-8.376	-33.5933	-11.166	-19.8721	-49.014	0.5805	-4.243	3.561	-0.2995	3.8437	-8.4605	-12.9756	-2.1195
i_soln	84	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.2884	-7.4684	-14.2292	-14.7792	-8.0908	-32.4529	-10.8809	-18.9825	-47.269	1.6031	-2.1978	5.6062	0.7231	6.6115	-7.7379	-10.2077	-1.0969
i_soln	85	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.1023	-7.2823	-13.8571	-14.4071	-7.9047	-31.7085	-10.6948	-19.0154	-46.7436	1.8754	-1.6532	6.1508	0.9954	7.5284	-7.3656	-9.2908	-0.8246
i_soln	86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.2281	-5.4081	-10.1086	-10.6586	-6.0305	-24.2117	-8.8206	-15.1385	-37.2442	5.1134	4.8229	12.6269	4.2334	16.2425	-5.1276	-0.5767	2.4134
i_soln	87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4291	-6.6091	-12.5107	-13.0607	-7.2316	-29.0159	-10.0216	-17.53	-43.2388	2.7336	0.0632	7.8672	1.8536	9.703	-6.9074	-7.1162	0.0336
i_soln	88	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.4299	-6.6099	-12.5122	-13.0622	-7.2322	-29.0187	-10.0223	-17.5314	-43.2421	2.7514	0.0988	7.9028	1.8714	9.7564	-6.8896	-7.0628	0.0514
i_soln	89	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.2511	-6.4311	-12.1541	-12.7041	-7.053	-28.302	-9.843	-17.1557	-42.3286	2.8678	0.3316	8.1356	1.9878	10.0055	-6.8732	-6.8137	0.1678
i_soln	90	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.2413	-7.4213	-14.6398	-15.1898	-8.5484	-33.7786	-11.3385	-19.9228	-49.5822	-0.7621	-6.9281	0.8759	-1.6421	0.016	-9.6031	-16.8033	-3.4621
i_soln	91	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.743	-3.923	-7.7868	-8.3368	-5.1939	-20.2166	-7.9839	-13.246	-32.8417	5.4325	5.4609	13.2649	4.5525	16.7996	-5.2085	-0.0196	2.7324
i_soln	92	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.2122	-5.3922	-10.0767	-10.6267	-6.0145	-24.1477	-8.8045	-15.1082	-37.1657	4.2249	3.0458	10.8498	3.3449	13.577	-6.0161	-3.2422	1.5249
i_soln	93	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.5704	-7.7504	-14.7931	-15.3431	-8.3727	-33.5804	-11.1627	-19.8656	-48.9977	0.3141	-4.7758	3.0282	-0.5659	3.0445	-8.7269	-13.7747	-2.3859
i_soln	94	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.769	-7.949	-15.1902	-15.7402	-8.5712	-34.3745	-11.3612	-20.2665	-49.994	-0.1907	-5.7853	2.0187	-1.0707	1.6302	-9.1317	-15.189	-2.8907
i_soln	95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1949	-8.3749	-16.4371	-16.9871	-9.3922	-37.2635	-12.1822	-21.6167	-53.8073	-2.1584	-9.7208	-1.9168	-3.0384	-3.873	-10.6994	-20.6922	-4.8584
i_soln	96	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2928	-8.4728	-16.2371	-16.7871	-9.0943	-36.4678	-11.8843	-21.1935	-52.4905	-0.8466	-7.0971	0.7069	-1.7266	-0.1375	-9.5876	-16.9567	-3.5466
i_soln	97	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2037	-8.3837	-16.5349	-17.0849	-9.4812	-37.5392	-12.2712	-21.7931	-54.2506	-1.5416	-8.4873	-0.6833	-2.4216	-2.1227	-10.1826	-18.9419	-4.2416
i_soln	98	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.0113	-8.1913	-16.1496	-16.6996	-9.2883	-36.7681	-12.0783	-21.4053	-53.2842	-1.1869	-7.7778	0.0262	-2.0669	-1.1585	-9.9279	-17.9777	-3.8869
i_soln	99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.9172	-2.0972	-4.5378	-5.0878	-3.7706	-14.121	-6.5607	-10.722	-26.0478	5.923	6.4421	14.2461	5.043	17.8713	-5.118	1.052	3.223
i_soln	100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.2095	-8.3895	-16.4152	-16.9652	-9.3557	-37.1687	-12.1458	-21.5451	-53.6263	-1.7037	-8.8113	-1.0073	-2.5837	-2.4087	-10.1447	-19.228	-4.4037

state	soln	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Al2O3	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite
i_soln	51	5.9668	0.8027	-3.0769	-1.1175	1.5114	8.0056	-0.5918	10.5613	1.5611	4.0701	3.7831	5.4881	5.0698	-15.2694	-9.4294	-23.4983	-9.4834	-18.2343	-5.1542	-3.5688	-3.8187	-6.1334
i_soln	52	4.1292	-3.3852	-6.8893	-5.6004	-2.9513	8.1162	0.0598	9.5855	1.0186	3.5276	3.2406	4.9456	3.9848	-17.772	-11.282	-28.406	-10.686	-21.9395	-6.1828	-3.9742	-4.2242	-6.2385
i_soln	53	2.9215	-5.3321	-9.4363	-8.415	-6.0458	5.9622	-0.2992	6.5608	0.13	2.639	2.352	4.057	2.2076	-19.3979	-12.6579	-32.2835	-11.8119	-24.6912	-7.2804	-3.9314	-4.1814	-6.1954
i_soln	54	6.5011	-5.0998	-8.9523	-4.0464	-2.4764	-7.9608	-8.0286	-5.8166	-1.4193	1.0897	0.8027	2.5077	-0.8909	-7.6716	-4.0316	-9.5047	-6.2856	-7.4386	-2.8251	-2.8268	-3.0767	-5.5382
i_soln	55	6.3939	-9.5616	-12.4621	-6.6455	-4.8779	-13.0454	-10.8501	-10.2881	-1.9693	0.5397	0.2527	1.9577	-1.991	-2.956	-0.416	0.2419	-3.77	-0.2075	-1.3969	-3.4281	-3.6781	-6.2892
i_soln	56	5.8404	-12.3293	-15.6469	-9.3521	-7.5615	-16.1551	-12.4163	-13.2898	-2.4478	0.0612	-0.2258	1.4792	-2.948	-0.5275	1.5125	5.5274	-2.3415	3.6494	-0.4561	-4.1569	-4.4069	-6.4044
i_soln	57	3.0715	-5.18	-11.4234	-11.0975	-8.0291	3.6543	-1.477	5.5149	0.174	2.683	2.396	4.101	2.2955	-18.615	-11.875	-29.9349	-11.029	-23.1254	-6.6734	-5.1286	-5.3786	-7.3948
i_soln	58	1.932	-8.0199	-12.4391	-12.4409	-9.2476	3.7113	-0.8893	3.3559	-0.7416	1.7674	1.4804	3.1854	0.4644	-20.953	-13.713	-34.9488	-12.367	-26.8014	-7.9858	-4.642	-4.892	-6.9079
i_soln	59	1.0579	-9.5645	-14.555	-14.6324	-11.388	3.073	-0.9744	1.9396	-1.1853	1.3237	1.0367	2.7417	-0.4231	-22.4958	-15.0558	-38.7772	-13.5098	-29.487	-9.124	-4.6854	-4.9354	-6.9514
i_soln	60	5.1978	-2.1709	-6.6467	-4.13	-1.363	-1.2497	-4.4302	-0.0994	-0.7131	1.7959	1.5089	3.2139	0.5215	-10.0996	-5.2596	-11.9889	-6.3136	-9.8948	-2.8482	-2.3522	-2.6021	-5.0267
i_soln	61	4.3337	-1.2608	-7.6795	-5.9805	-3.0884	2.3476	-2.6338	3.7887	-0.0159	2.4931	2.2061	3.9111	1.9159	-12.3306	-6.7906	-15.8818	-7.1446	-12.9567	-3.1425	-2.8793	-3.1293	-5.9871
i_soln	62	1.5297	-6.9239	-12.3658	-11.8442	-9.077	2.6581	-1.2087	1.5016	-1.2532	1.2558	0.9688	2.6738	-0.5589	-17.733	-10.893	-26.8891	-9.947	-21.1616	-5.5843	-2.974	-3.224	-5.3329
i_soln	63	-0.843	-11.6245	-16.1404	-16.1623	-13.5718	-2.1853	-1.912	-7.3516	-3.9699	-1.4609	-1.7479	-0.0429	-5.9921	-20.0592	-12.5192	-31.0677	-10.8732	-24.414	-6.4861	-1.5362	-1.7861	-4.3186
i_soln	64	6.5802	0.3803	-4.8979	-2.9938	-0.1015	2.4303	-3.271	6.6066	1.1359	3.6449	3.3579	5.0629	4.2193	-12.9058	-7.5658	-18.4074	-8.1198	-14.5071	-3.9425	-5.0766	-5.3266	-7.3429
i_soln	65	7.3213	-0.672	-3.9476	-1.3426	1.5497	-0.7329	-4.9231	3.2749	0.576	3.085	2.798	4.503	3.0996	-9.8492	-5.2092	-12.0377	-6.4632	-9.794	-2.7675	-4.7662	-5.0162	-7.0324
i_soln	66	7.9679	-3.5165	-3.8089	0.6161	3.2585	-3.7661	-6.9188	-0.5565	-0.0359	2.4731	2.1861	3.8911	1.8758	-5.8619	-2.3219	-4.4758	-4.6759	-4.0194	-1.8577	-3.6855	-3.9355	-6.2528
i_soln	67	6.4668	-8.3418	-11.5153	-6.3472	-4.1237	-12.2197	-10.458	-9.194	-1.7354	0.7736	0.4867	2.1917	-1.5231	-3.1677	-0.4277	0.4068	-3.5817	-0.2309	-1.0252	-3.7549	-4.0049	-6.4934
i_soln	68	6.1399	-10.0729	-12.9612	-7.262	-5.2724	-13.763	-11.1736	-11.1375	-2.1446	0.3644	0.0774	1.7824	-2.3416	-1.4302	1.0098	4.4194	-2.4442	2.6441	-0.1893	-3.9665	-4.2165	-6.2237
i_soln	69	0.8572	-9.5207	-15.273	-15.4999	-12.5284	1.5239	-1.4164	0.7702	-1.4278	1.0812	0.7942	2.4992	-0.908	-21.6469	-14.2569	-36.4307	-12.7609	-27.8893	-8.3761	-4.7663	-5.0163	-7.0323
i_soln	70	-0.2894	-11.4403	-16.7143	-17.1116	-14.2194	0.487	-1.3345	-2.0013	-2.3789	0.1301	-0.1569	1.5481	-2.8103	-21.8449	-14.2049	-36.0246	-12.4589	-27.7852	-8.3712	-4.2352	-4.4852	-6.5004
i_soln	71	-0.5793	-11.377	-18.0028	-18.2987	-15.4064	-0.419	-1.7665	-2.8633	-2.5222	-0.0132	-0.3002	1.4048	-3.0969	-22.0913	-14.5513	-37.1638	-12.9053	-28.478	-8.8189	-4.3174	-4.5673	-6.5827
i_soln	72	6.5699	-5.3604	-10.2709	-6.4702	-3.5778	-9.9055	-9.1888	-6.5016	-1.2609	1.2481	0.9611	2.6661	-0.5742	-5.8343	-2.3943	-4.793	-4.8483	-4.1641	-1.6185	-3.9129	-4.1628	-7.0813
i_soln	73	6.0939	-8.2559	-12.0821	-7.5581	-4.7907	-12.5497	-10.4389	-9.9792	-2.0034	0.5056	0.2186	1.9236	-2.0592	-3.5065	-0.6665	-0.2096	-3.7205	-0.7086	-1.1956	-3.1859	-3.4359	-6.4033
i_soln	74	5.8573	-9.3915	-13.7834	-9.0592	-6.2917	-14.3083	-11.2765	-11.6674	-2.287	0.222	-0.0649	1.6401	-2.6263	-3.3148	-0.6748	-0.4344	-3.9288	-0.7251	-1.627	-3.3413	-3.5913	-6.5588
i_soln	75	6.7021	-7.3498	-9.2094	-3.9965	-2.0251	-9.1216	-9.0292	-6.4215	-1.2874	1.2216	0.9346	2.6396	-0.6272	-4.2447	-1.3047	-2.0241	-4.2587	-1.9849	-1.4177	-2.9108	-3.1608	-5.4717
i_soln	76	5.9932	-8.082	-10.8871	-5.5313	-3.7061	-10.1566	-9.2977	-8.1742	-1.7822	0.7268	0.4399	2.1449	-1.6167	-4.8692	-1.9292	-3.8976	-4.8832	-3.2339	-2.0966	-2.7075	-2.9575	-5.267
i_soln	77	6.3601	-9.8813	-11.8542	-6.0471	-4.1687	-12.162	-10.5629	-9.3776	-1.7616	0.7474	0.4604	2.1654	-1.5755	-2.1645	0.2755	2.2165	-3.1785	1.1755	-0.9063	-3.2817	-3.5317	-6.0152
i_soln	78	6.5198	-9.3152	-11.0768	-5.3173	-3.4918	-12.0582	-10.4084	-9.5375	-1.8664	0.6426	0.3556	2.0606	-1.7851	-2.2596	0.2804	2.3314	-3.0736	1.1854	-0.7627	-3.6947	-3.9447	-5.9531
i_soln	79	1.079	-8.9578	-14.6781	-14.7253	-11.8331	1.8311	-1.3797	1.2069	-1.2945	1.2145	0.9275	2.6325	-0.6413	-21.9984	-14.7084	-37.885	-13.3124	-28.7922	-9.2308	-4.6613	-4.9113	-6.9272
i_soln	80	0.8902	-8.9736	-14.7406	-14.5163	-11.8459	2.2319	-1.1902	1.3126	-1.3224	1.1866	0.8996	2.6046	-0.6972	-21.9773	-14.7373	-38.0218	-13.3913	-28.85	-9.311	-4.3471	-4.5971	-6.6125
i_soln	81	2.0563	-6.1123	-14.1461	-14.1177	-10.7483	2.6037	-1.816	4.0474	-0.2022	2.3068	2.0198	3.7248	1.5432	-19.9619	-13.2219	-33.9758	-12.3759	-25.8194	-8.02	-5.0777	-5.3277	-7.3438
i_soln	82	2.9959	-4.5551	-12.074	-11.5458	-8.4775	3.6998	-1.6517	5.9185	0.3667	2.8757	2.5887	4.2937	2.6811	-19.1673	-12.6273	-32.392	-11.9813	-24.6302	-7.6463	-5.0875	-5.3375	-7.3536
i_soln	83	1.5904	-7.6204	-14.2435	-14.0403	-11.148	2.7034	-1.3937	3.1421	-0.6447	1.8643	1.5773	3.2823	0.6582	-20.8711	-13.8311	-35.5033	-12.6851	-27.0377	-8.3109	-4.8227	-5.0726	-7.0887
i_soln	84	2.4936	-5.6987	-12.3162	-11.9879	-8.9196	3.2992	-1.4856	4.4855	-0.1663	2.3427	2.0557	3.7607	1.615	-19.9672	-13.2272	-33.9917	-12.3812	-25.83	-8.3265	-4.7884	-5.0384	-7.0544
i_soln	85	2.892	-5.7259	-10.8838	-10.4171	-7.2908	5.0688	-0.8586	6.0702	0.1529	2.6619	2.3749	4.0799	2.2535	-20.0868	-13.2468	-33.9503	-12.3008	-25.8691	-7.8409	-4.6997	-4.9497	-6.9657
i_soln	86	5.8144	0.0816	-5.4047	-4.0044	-0.8111	6.0319	-1.5769	9.5493	1.5521	4.0611	3.7741	5.4791	5.0518	-14.8798	-9.0398	-22.3293	-9.0938	-17.455	-4.7624	-4.8144	-5.0644	-7.0805
i_soln	87	3.581	-3.6758	-10.139	-9.3364	-6.4441	5.0423	-1.2063	7.4239	0.7201	3.2291	2.9421	4.6471	3.3877	-17.6954	-11.2554	-28.3762	-10.7094	-21.8863	-6.3886	-4.8024	-5.0524	-7.0684
i_soln	88	3.5912	-3.658	-9.7313	-8.9287	-6.0364	5.2904	-1.0646	7.4594	0.6847	3.1937	2.9067	4.6117	3.317	-17.7752	-11.3352	-28.6157	-10.7892	-22.0459	-6.4684	-4.6261	-4.876	-6.8919
i_soln	89	3.674	-3.2503	-9.1654	-7.9622	-5.3711	5.388	-1.0291	7.2763	0.6118	3.1208	2.8338	4.5388	3.1712	-17.7769	-11.4369	-29.0205	-10.9909	-22.2492	-6.6871	-4.3218	-4.5718	-6.5871
i_soln	90	0.2914	-9.563	-14.5059	-13.8175	-11.6245	1.9677	-0.9399	-0.691	-2.0737	0.4353	0.1483	1.8533	-2.1997	-20.0881	-12.8481	-32.3544	-11.5021	-25.0718	-7.4222	-2.3136	-2.5635	-5.0842
i_soln	91	5.9775	-0.0811	-3.5048	-1.0127	1.1804	4.718	-1.8883	6.8897	0.7693	3.2783	2.9913	4.6963	3.4863	-13.4896	-8.0496	-19.7588	-8.5036	-15.4747	-4.3914	-2.6388	-2.8888	-5.5533
i_soln	92	4.844	-0.8037	-7.6687	-6.1397	-3.3724	4.2548	-2.0033	7.2417	0.925	3.434	3.147	4.852	3.7976	-16.3693	-10.5293	-26.798	-10.5833	-20.4342	-6.2502	-4.5996	-4.8496	-6.8654
i_soln	93	1.2931	-7.8868	-14.642	-14.4378	-11.5456	2.2212	-1.488	2.1641	-0.9393	1.5697	1.2827	2.9877	0.069	-20.8676	-13.8276	-35.4927	-12.6816	-27.0306	-8.3073	-4.6193	-4.8693	-6.8851
i_soln	94	0.8252	-8.6916	-15.5117	-15.2831	-12.5158	1.9301	-1.4441	1.3728	-1.2177	1.2913	1.0043	2.7093	-0.4878	-21.2701	-14.1301	-36.3001	-12.8841	-27.6356	-8.5059	-4.4995	-4.7495	-6.7652
i_soln	95	-1.0871	-11.8597	-18.2698	-18.3493	-15.679	-4.2446	-2.843	-8.9407	-4.1892	-1.6802	-1.9672	-0.2622	-6.4309	-21.5895	-14.0495	-35.6586	-12.4035	-27.4746	-8.3172	-3.0611	-3.311	-5.7219
i_soln	96	0.1955	-9.9476	-16.0801	-16.0519	-13.2846	1.3147	-1.3491	-0.3466	-1.8225	0.6865	0.3995	2.1045	-1.6973	-21.8309	-14.4909	-37.1826	-13.0449	-28.3573	-8.786	-4.2044	-4.4543	-6.4694
i_soln	97	-0.4952	-10.9428	-17.1612	-17.1383	-14.468	0.2656	-1.4974	-2.4457	-2.4728	0.0362	-0.2508	1.4542	-2.9979	-21.642	-14.202	-36.2159	-12.656	-27.7794	-8.5712	-3.4391	-3.6891	-6.1801
i_soln	98	-0.1737	-10.288	-16.3331	-16.0971	-13.5407	1.1549	-1.2734	-1.1955	-2.1307	0.3783	0.0913	1.7963	-2.3138	-21.2173	-13.8773	-35.3418	-12.4313	-27.1301	-8.3486	-3.3627	-3.6127	-6.1033
i_soln	99	6.1213	-0.7645	-2.5743	0.1473	2.4938	3.2923	-2.5813	4.9291	0.3468	2.8558	2.5688	4.2738	2.6413	-13.0361	-7.9961	-19.9982	-8.8501	-15.3676	-4.4154	-1.406	-1.6559	-4.7231
i_soln	100	-0.4536	-11.7053	-15.5777	-14.9629	-13.0991	-0.0019	-1.1701	-4.2408	-3.1803	-0.6713	-0.9582	0.7468	-4.4129	-22.559	-14.919	-38.167	-13.173	-29.2135	-9.0855	-2.4129	-2.6628	-5.0228

state	soln	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite
i_soln	51	-9.3503	-5.4123	-33.3551	-8.5259	-8.421	-13.8515	-13.0554	-13.1515	-8.2485	-2.6431	-4.4837	-3.3665	-5.5498	-10.1	-6.2145	-8.9576	-6.331	-999.999	-999.999	0.6646	-999.999	-3.4446
i_soln	52	-9.4972	-5.6351	-33.9065	-8.9693	-8.8644	-14.0145	-13.0639	-13.2989	-8.5362	-3.886	-5.6513	-4.6993	-8.3396	-14.1978	-7.3463	-10.4212	-7.5141	-999.999	-999.999	0.4355	-999.999	-3.7572
i_soln	53	-9.5028	-6.0575	-34.7218	-9.1891	-9.0842	-14.2125	-13.6601	-13.405	-8.657	-4.8099	-6.2587	-5.453	-9.6121	-16.0925	-7.7908	-11.1425	-8.2135	-999.999	-999.999	0.3168	-999.999	-4.0096
i_soln	54	-7.9143	-11.0565	-44.6993	-9.7631	-9.6582	-14.6035	-14.314	-14.3338	-10.5167	-4.6993	-2.0783	-1.9658	-2.0417	-5.2723	-2.8192	-6.6069	-3.4953	-999.999	-999.999	0.5012	-999.999	-5.6316
i_soln	55	-8.364	-14.0834	-50.825	-10.2687	-10.1638	-15.1131	-14.0699	-15.4663	-12.0981	-6.5423	-2.0267	-2.0732	-1.7491	-5.3772	-1.8966	-5.9286	-2.8207	-999.999	-999.999	0.4851	-999.999	-6.9231
i_soln	56	-8.4953	-16.0076	-54.7611	-10.521	-10.4161	-15.9078	-13.7292	-16.5158	-12.8254	-7.8665	-2.4762	-2.0121	-1.5161	-5.2714	-1.7347	-5.581	-3.0155	-999.999	-999.999	0.2519	-999.999	-7.462
i_soln	57	-12.1151	-7.1272	-38.0829	-10.8648	-10.7599	-15.7111	-14.099	-14.9677	-9.8556	-4.8336	-6.7754	-5.7687	-9.7416	-16.3747	-7.9424	-11.7722	-8.6661	-999.999	-999.999	-1.2397	-999.999	-5.3712
i_soln	58	-11.2673	-6.4646	-36.2546	-10.3781	-10.2732	-15.2257	-13.9337	-14.1594	-9.8499	-5.6487	-7.4448	-6.4617	-12.7112	-20.8163	-8.9413	-12.7632	-9.6585	-999.999	-999.999	-0.3946	-999.999	-4.5865
i_soln	59	-11.0599	-6.8504	-37.0674	-10.4217	-10.3168	-15.2695	-14.7179	-13.9897	-9.5936	-6.3886	-7.6293	-6.6834	-12.9114	-21.1143	-9.3409	-13.1609	-10.0564	-999.999	-999.999	-0.3193	-999.999	-4.4542
i_soln	60	-9.7998	-8.1237	-38.342	-7.2905	-7.1856	-13.3496	-11.4498	-13.2144	-8.8144	-4.654	-3.8461	-3.3812	-4.417	-8.8327	-5.0889	-7.0219	-5.1287	-999.999	-999.999	0.7344	-999.999	-4.1597
i_soln	61	-10.3361	-7.4015	-37.1985	-8.1362	-8.0313	-13.1291	-11.1816	-13.626	-8.9519	-4.4945	-4.8204	-4.0952	-6.3538	-11.4697	-5.9091	-8.4302	-5.4708	-999.999	-999.999	0.4477	-999.999	-4.3112
i_soln	62	-10.0283	-6.7761	-35.8853	-8.5031	-8.3982	-13.3508	-11.3216	-13.6253	-8.8666	-6.1708	-7.1213	-6.3193	-11.1474	-18.4796	-8.1636	-11.0988	-7.9941	-999.999	-999.999	0.5709	-999.999	-4.2335
i_soln	63	-9.1022	-6.6633	-35.0461	-7.527	-7.4221	-12.2206	-10.2344	-12.6699	-8.3678	-8.0469	-8.155	-7.8591	-14.1521	-22.9746	-9.661	-12.1116	-8.8529	-999.999	-999.999	1.2938	-999.999	-3.7843
i_soln	64	-11.7147	-7.2706	-38.3257	-10.3368	-10.2319	-15.6592	-13.9457	-14.9741	-10.3418	-2.3994	-4.2043	-3.1946	-5.3804	-9.922	-5.3043	-8.6666	-6.0366	-999.999	-999.999	-1.023	-999.999	-5.3748
i_soln	65	-11.4051	-8.0179	-39.5126	-10.0286	-9.9237	-15.0496	-13.3814	-14.4812	-9.9601	-2.536	-3.1006	-2.2809	-2.9143	-6.4635	-4.3791	-7.7477	-4.8164	-999.999	-999.999	-0.4727	-999.999	-5.0718
i_soln	66	-9.1489	-9.533	-41.7264	-8.3408	-8.2359	-14.1273	-12.9779	-13.4587	-9.7706	-3.5448	-1.5719	-1.3273	-0.645	-3.4984	-3.11	-5.5536	-3.3877	-999.999	-999.999	0.7726	-999.999	-4.6244
i_soln	67	-9.5026	-13.515	-49.9302	-9.8487	-9.7438	-15.1516	-13.7234	-15.3444	-12.0021	-5.9488	-1.8796	-2.0214	-1.6902	-5.197	-1.9626	-5.4834	-2.834	-999.999	-999.999	0.0923	-999.999	-6.8965
i_soln	68	-8.7466	-14.3991	-51.4047	-9.5289	-9.424	-14.8667	-12.8922	-15.3037	-10.2334	-6.8282	-1.8342	-2.116	2.1581	0.4246	-1.8267	-5.1589	-2.5444	-999.999	-999.999	0.2508	-999.999	-6.9959
i_soln	69	-11.5585	-7.2062	-37.8787	-10.5022	-10.3973	-15.3484	-14.1687	-14.5412	-9.9668	-6.5457	-7.9821	-7.3387	-13.2594	-21.6366	-9.2108	-13.0427	-9.9365	-999.999	-999.999	-1.0721	-999.999	-5.3082
i_soln	70	-10.8662	-7.0923	-37.1178	-9.9705	-9.8656	-14.8165	-12.8335	-14.4435	-9.4316	-7.7621	-9.2146	-8.1402	-14.5524	-23.7248	-10.0048	-13.8413	-10.7349	-999.999	-999.999	-0.2125	-999.999	-4.7794
i_soln	71	-10.9521	-7.718	-38.458	-10.0527	-9.9478	-14.8983	-13.5687	-14.6073	-9.5129	-8.1003	-9.0909	-7.9332	-14.1388	-23.105	-9.7978	-13.636	-10.5292	-999.999	-999.999	-0.5043	-999.999	-4.8599
i_soln	72	-11.4425	-12.1353	-47.7761	-10.6383	-10.5334	-15.4646	-14.1953	-15.2807	-11.6337	-4.6905	-1.9373	-1.9599	-1.8698	-5.1297	-2.515	-6.3945	-3.2684	-999.999	-999.999	-0.5293	-999.999	-6.7137
i_soln	73	-10.5035	-13.5082	-49.8295	-10.1362	-10.0313	-14.9758	-13.5751	-15.2689	-11.7155	-6.2608	-2.1228	-2.0696	-1.7231	-5.2621	-2.1268	-6.0897	-2.977	-999.999	-999.999	0.1666	-999.999	-6.626
i_soln	74	-10.6573	-14.46	-51.8873	-10.4218	-10.3169	-15.2826	-14.3375	-15.8028	-12.1911	-6.8816	-2.3257	-2.1328	-1.7891	-5.4728	-2.0146	-6.0444	-2.9529	-999.999	-999.999	0.0382	-999.999	-7.0202
i_soln	75	-8.4323	-12.2195	-46.7583	-9.3706	-9.2658	-14.4802	-13.4196	-14.2568	-11.1557	-5.3496	-1.4883	-1.9508	-1.6746	-5.0314	-2.0628	-5.7017	-2.859	-999.999	-999.999	0.9074	-999.999	-6.1296
i_soln	76	-7.9204	-12.7033	-47.4996	-9.4427	-9.3379	-14.2614	-13.8178	-13.8401	-10.304	-6.1141	-1.3523	-1.9764	-0.4783	-3.2641	-2.1234	-6.0545	-2.921	-999.999	-999.999	1.0256	-999.999	-5.8744
i_soln	77	-8.3034	-13.9543	-50.2873	-9.7893	-9.6844	-14.9479	-13.3989	-14.8126	-11.3909	-6.5936	-1.5533	-1.8079	-0.5947	-3.6959	-1.8261	-5.6296	-2.836	-999.999	-999.999	0.747	-999.999	-6.4774
i_soln	78	-8.1392	-13.5087	-49.3369	-9.3079	-9.203	-14.7656	-13.0347	-14.8367	-11.7426	-6.3687	-1.7981	-1.804	-1.778	-5.4516	-1.9167	-5.3689	-2.8743	-999.999	-999.999	0.7521	-999.999	-6.2529
i_soln	79	-11.2957	-7.1402	-37.6432	-10.3971	-10.2922	-15.2431	-14.8167	-14.4719	-9.8611	-6.6863	-8.1194	-7.4405	-13.158	-21.6362	-9.3112	-13.1442	-10.0379	-999.999	-999.999	-0.7826	-999.999	-5.2034
i_soln	80	-10.5352	-7.1385	-37.3224	-10.0826	-9.9777	-14.9287	-14.6781	-14.1453	-9.5461	-6.9034	-8.0116	-7.0463	-12.9644	-21.3464	-9.2149	-13.0485	-9.9423	-999.999	-999.999	-0.3936	-999.999	-4.5903
i_soln	81	-12.673	-8.0223	-39.836	-10.8136	-10.7087	-15.6589	-15.4088	-15.106	-10.2763	-5.7656	-6.9507	-6.0527	-10.6572	-17.7479	-7.92	-11.758	-8.6509	-999.999	-999.999	-1.4288	-999.999	-5.6184
i_soln	82	-12.0782	-7.6665	-39.1291	-10.8235	-10.7186	-15.6691	-15.4189	-14.67	-10.2897	-5.026	-6.1307	-5.3802	-9.8954	-16.6155	-7.5493	-11.384	-8.2772	-999.999	-999.999	-0.9986	-999.999	-5.3297
i_soln	83	-11.4586	-7.4665	-38.4596	-10.5586	-10.4537	-15.4045	-14.8532	-14.5339	-10.023	-6.0563	-7.2251	-6.6454	-11.8618	-19.5456	-8.5162	-12.3494	-9.2429	-999.999	-999.999	-0.7957	-999.999	-5.3646
i_soln	84	-11.7787	-7.3142	-38.1253	-10.5243	-10.4194	-15.3698	-15.1196	-14.7281	-9.9881	-5.6531	-7.1684	-6.3604	-10.9709	-18.3689	-8.2282	-12.0642	-8.9574	-999.999	-999.999	-0.9604	-999.999	-5.3304
i_soln	85	-11.1943	-6.6341	-36.6573	-10.4359	-10.331	-15.283	-14.7313	-14.1388	-9.9071	-4.8757	-6.4817	-5.7019	-11.0192	-18.2389	-8.0541	-11.8785	-8.7732	-999.999	-999.999	-0.4055	-999.999	-4.7692
i_soln	86	-11.4444	-6.5136	-36.5337	-9.5511	-9.4462	-14.9207	-13.6418	-14.3127	-9.4359	-2.7662	-4.6666	-3.4754	-5.9703	-10.7298	-6.1773	-9.0047	-6.4219	-999.999	-999.999	-0.4808	-999.999	-4.5318
i_soln	87	-11.4371	-7.0908	-37.6857	-10.2374	-10.1325	-15.3845	-14.0549	-14.448	-9.7067	-4.5566	-6.0151	-5.0283	-8.9277	-15.1712	-7.3738	-10.9041	-8.0989	-999.999	-999.999	-0.6582	-999.999	-4.8716
i_soln	88	-11.26	-6.8959	-37.1187	-10.061	-9.9561	-15.2081	-13.9576	-14.2266	-9.5297	-4.5387	-5.9708	-5.0296	-8.9279	-15.1714	-7.3737	-10.9048	-8.0995	-999.999	-999.999	-0.3976	-999.999	-4.6957
i_soln	89	-10.3506	-6.7711	-36.5608	-10.0575	-9.9526	-14.9036	-14.0508	-14.0659	-9.2261	-4.5395	-5.9356	-5.0304	-8.5545	-14.6199	-7.1944	-11.0268	-7.9205	-999.999	-999.999	-0.1356	-999.999	-4.5711
i_soln	90	-8.6057	-6.7265	-35.4967	-8.3137	-8.2088	-13.3106	-11.7875	-13.3461	-8.3207	-7.4932	-8.2142	-7.4631	-12.5167	-20.6751	-9.2954	-12.2814	-9.326	-999.999	-999.999	1.0712	-999.999	-4.0053
i_soln	91	-8.7894	-6.1232	-34.4815	-9.0258	-8.9209	-14.1758	-12.5803	-13.4771	-8.5355	-3.0663	-4.5215	-3.5314	-5.3314	-9.881	-5.6406	-9.1699	-6.3676	-999.999	-999.999	0.8973	-999.999	-3.8972
i_soln	92	-10.9863	-7.2014	-37.7086	-10.3359	-10.231	-15.1814	-14.9307	-14.2036	-9.8173	-3.6529	-4.7565	-4.0017	-7.133	-12.4729	-6.1519	-9.9885	-6.8816	-999.999	-999.999	-0.3605	-999.999	-4.859
i_soln	93	-11.2563	-7.5326	-38.3915	-10.355	-10.2501	-15.2007	-14.6493	-14.4742	-9.8176	-6.3226	-7.3656	-6.6421	-11.8516	-19.5303	-8.5101	-12.3461	-9.2393	-999.999	-999.999	-0.7099	-999.999	-5.1611
i_soln	94	-10.8851	-7.6151	-38.4341	-10.2352	-10.1303	-15.0809	-14.5295	-14.6839	-9.6979	-6.7235	-7.8936	-6.8416	-12.2529	-20.1302	-8.7093	-12.5446	-9.438	-999.999	-999.999	-0.6006	-999.999	-5.0421
i_soln	95	-9.9289	-7.6102	-37.6519	-8.8917	-8.7868	-14.0398	-12.4764	-13.4665	-8.953	-8.5831	-8.5406	-7.9792	-14.2001	-23.1969	-9.8293	-13.0655	-10.2612	-999.999	-999.999	0.5334	-999.999	-4.3154
i_soln	96	-10.5863	-7.3713	-37.6469	-9.3954	-9.2906	-14.7853	-13.9907	-14.3492	-9.4002	-7.2987	-8.3779	-7.3672	-13.1761	-21.5747	-9.2303	-12.5239	-9.9614	-999.999	-999.999	-0.1913	-999.999	-4.7488
i_soln	97	-10.0948	-7.4643	-37.5309	-9.3496	-9.2447	-14.4969	-13.0997	-14.1242	-9.1102	-8.0679	-8.8291	-7.7608	-13.7742	-22.5589	-9.6166	-13.1541	-10.3491	-999.999	-999.999	0.221	-999.999	-4.4662
i_soln	98	-9.7867	-7.3276	-37.1756	-9.176	-9.0711	-14.4205	-12.9931	-13.9337	-9.0335	-7.8152	-8.5226	-7.5709	-13.3868	-21.9789	-9.424	-12.8645	-10.1567	-999.999	-999.999	0.2919	-999.999	-4.3923
i_soln	99	-8.6012	-6.3033	-34.3121	-8.9005	-8.7956	-13.7567	-13.1973	-13.2515	-8.4905	-2.6533	-3.7031	-2.9136	-4.3778	-8.2894	-4.6137	-8.4515	-5.3555	-999.999	-999.999	1.3643	-999.999	-3.8724
i_soln	100	-7.8766	-6.3916	-34.7504	-8.0566	-7.9517	-13.649	-12.5819	-12.7859	-8.5663	-8.0271	-8.5228	-8.2797	-14.7533	-24.0262	-10.1121	-12.8931	-10.5333	-999.999	-999.999	1.1457	-999.999	-3.953

state	soln	si_Ba3(AsO4)2	si_Halite	si_Fluorite	si_Cu(OH)2	si_Tenorite	si_Brochantite	si_Cupricferrite	si_Cuprousferrite	si_CoFe2O4	si_Hercynite	si_Spinel	si_Magnesioferrite	si_Minium	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zincite	si_ZnO(active)	si_Be(OH)2(beta)	si_CO2(g)
i_soln	51	6.2437	-8.0861	-6.4894	-3.3795	-2.3495	-10.2269	10.7657	12.4313	20.1213	10.3908	-4.2023	2.5228	-38.277	-5.2389	-5.5129	-4.7929	-4.5729	-4.7729	-4.3729	-4.2273	-1.9538	-3.2978
i_soln	52	2.7915	-7.9923	-9.2735	-4.8614	-3.8314	-14.9604	5.15	9.5325	14.6304	7.889	-6.5865	-2.9102	-44.0973	-6.5805	-6.8545	-6.1345	-5.9145	-6.1145	-5.7145	-5.5689	-2.7845	-3.1238
i_soln	53	1.37	-8.2784	-8.9649	-5.5118	-4.4818	-17.0322	2.0955	7.9301	11.4986	5.1598	-8.8502	-5.8009	-46.9432	-7.2161	-7.4901	-6.7701	-6.5501	-6.7501	-6.3501	-6.2045	-3.1564	-3.0956
i_soln	54	11.1409	-6.7337	-2.1797	-1.1911	-0.1611	-5.9298	14.9792	13.4323	25.8508	3.2428	-5.1111	9.5998	-27.0688	-1.9648	-2.2388	-1.5188	-1.2988	-1.4988	-1.0987	-0.9531	-0.0974	-4.1665
i_soln	55	13.5965	-7.3279	-2.6795	-0.5011	0.5289	-5.4413	16.3578	13.3666	28.3014	1.387	-4.6909	11.8087	-21.9287	-0.8258	-1.0998	-0.3798	-0.1598	-0.3598	0.0402	0.1858	-0.1324	-5.2539
i_soln	56	15.7041	-7.5735	-3.4759	-0.1407	0.8893	-5.0875	16.0453	12.8905	27.9214	-0.4064	-4.6754	12.1083	-19.2823	-0.7876	-1.0616	-0.3416	-0.1216	-0.3216	0.0785	0.2241	-0.4199	-5.7416
i_soln	57	0.3738	-8.9808	-9.0001	-5.4886	-4.4586	-18.1614	2.4228	8.1053	11.526	5.3998	-8.74	-5.4744	-47.3628	-7.557	-7.831	-7.111	-6.891	-7.091	-6.691	-6.5454	-3.1427	-3.2714
i_soln	58	-0.6393	-8.6379	-10.1925	-6.9862	-5.9562	-22.6485	-1.7562	5.767	7.8266	2.7279	-11.5874	-9.1721	-50.5185	-8.252	-8.526	-7.806	-7.586	-7.786	-7.386	-7.2404	-4.008	-3.2459
i_soln	59	-1.2087	-8.4793	-10.5093	-7.0886	-6.0586	-22.6994	-3.7474	4.9202	5.5353	1.096	-12.877	-11.4631	-51.5974	-8.441	-8.715	-7.995	-7.775	-7.975	-7.575	-7.4294	-4.3796	-3.2413
i_soln	60	7.727	-9.6013	-3.736	-2.3812	-1.3512	-7.7979	11.4696	12.2824	21.893	4.6954	-6.0797	4.8993	-33.7298	-3.7376	-4.0116	-3.2916	-3.0716	-3.2716	-2.8716	-2.726	-0.9269	-4.1615
i_soln	61	5.6682	-9.7093	-4.0181	-3.6179	-2.5879	-11.6456	8.0788	10.6686	18.8602	5.7128	-6.7449	0.6856	-38.8817	-5.2484	-5.5224	-4.8024	-4.5824	-4.7824	-4.3824	-4.2368	-1.6384	-3.625
i_soln	62	0.9107	-9.1098	-6.3638	-6.1951	-5.1651	-19.2918	-1.1725	6.0544	9.302	1.2009	-11.228	-7.9968	-49.2361	-7.9101	-8.1841	-7.4641	-7.2441	-7.4441	-7.0441	-6.8985	-3.3401	-3.2642
i_soln	63	-1.877	-8.8942	-4.7642	-7.7096	-6.6796	-23.3365	-7.8878	2.6395	3.218	-6.1327	-17.6601	-14.1965	-55.3286	-8.9681	-9.2421	-8.5221	-8.3021	-8.5021	-8.1021	-7.9565	-4.7217	-3.2399
i_soln	64	6.1126	-9.082	-4.4801	-3.2189	-2.1889	-11.8384	12.7175	12.9875	22.3587	9.936	-4.0084	5.3583	-36.3057	-4.8076	-5.0816	-4.3616	-4.1416	-4.3416	-3.9416	-3.796	-1.4234	-3.4497
i_soln	65	8.8512	-9.394	-4.129	-1.745	-0.715	-7.0351	16.2812	14.8063	26.1504	9.1612	-3.7254	8.8509	-30.7198	-3.2224	-3.4964	-2.7764	-2.5564	-2.7564	-2.3564	-2.2108	-0.7369	-3.9312
i_soln	66	13.4645	-8.6475	-2.3958	-0.1716	0.8584	-2.1254	19.7921	16.2485	30.3941	7.8062	-2.7857	12.9519	-23.0265	-0.8162	-1.0902	-0.3702	-0.1502	-0.3502	0.0498	0.1954	0.2401	-4.8088
i_soln	67	13.4132	-8.4337	-3.1019	-0.5634	0.4666	-5.5322	16.7157	13.7144	28.5248	2.265	-4.5855	11.8664	-22.7236	-0.8621	-1.1361	-0.4161	-0.1961	-0.3961	0.0039	0.1495	-0.0604	-5.0704
i_soln	68	13.5798	-8.0667	-3.612	1.5116	2.5416	2.4613	18.2352	15.2116	28.5606	0.8687	-4.828	11.887	-21.5028	-0.5151	-0.7891	-0.0691	0.1509	-0.0491	0.3509	0.4965	-0.1752	-5.3721
i_soln	69	-2.9149	-8.9434	-9.6784	-7.2621	-6.2321	-23.5931	-4.1334	4.5904	5.4436	0.4549	-13.2432	-11.5569	-53.4607	-8.7929	-9.0669	-8.3469	-8.1269	-8.3269	-7.9269	-7.7813	-4.2699	-3.2422
i_soln	70	-3.3413	-9.0386	-9.2825	-7.76	-6.73	-24.5517	-6.9697	3.1733	2.6041	-2.3666	-15.6468	-14.3965	-55.4735	-9.7283	-10.0023	-9.2823	-9.0623	-9.2623	-8.8623	-8.7167	-4.7437	-3.5393
i_soln	71	-3.3247	-9.1135	-8.4155	-7.5526	-6.5226	-24.0107	-7.2363	3.0438	2.337	-2.9902	-15.727	-14.664	-54.6487	-9.6033	-9.8773	-9.1573	-8.9373	-9.1373	-8.7373	-8.5917	-4.55	-3.5406
i_soln	72	11.3649	-9.0743	-2.6529	-0.9898	0.0402	-6.4432	16.0592	13.8729	27.1871	3.7988	-5.0193	10.2537	-25.9593	-1.5932	-1.8672	-1.1472	-0.9272	-1.1272	-0.7272	-0.5816	-0.0356	-4.3971
i_soln	73	12.5724	-9.053	-2.871	-0.564	0.466	-5.2476	15.9543	13.4333	27.6526	1.4484	-5.3187	10.9085	-22.9735	-1.0738	-1.3478	-0.6278	-0.4078	-0.6078	-0.2078	-0.0622	-0.0364	-5.102
i_soln	74	13.0499	-8.9826	-2.6221	-0.4855	0.5445	-5.4874	15.6375	13.1143	27.5046	0.4837	-5.4871	10.9119	-22.0937	-1.0535	-1.3275	-0.6075	-0.3875	-0.5875	-0.1875	-0.0419	-0.0913	-5.3252
i_soln	75	13.0553	-7.9872	-2.154	-0.6978	0.3322	-5.089	16.8109	13.8947	28.4449	3.4756	-3.6487	12.1369	-23.7654	-0.7553	-1.0293	-0.3093	-0.0893	-0.2893	0.1107	0.2563	-0.0214	-4.786
i_soln	76	12.7051	-7.8404	-1.9325	-0.0724	0.9576	-2.3612	16.0161	13.8101	27.0173	1.7761	-4.6597	10.6952	-23.6786	-0.5649	-0.8389	-0.1189	0.1011	-0.0989	0.3012	0.4468	-0.0222	-4.8405
i_soln	77	13.7556	-7.9491	-2.4569	0.1266	1.1566	-2.8511	17.2848	14.0439	28.6863	1.8521	-4.0809	12.3025	-20.6301	-0.2515	-0.5255	0.1945	0.4145	0.2145	0.6145	0.7601	-0.1767	-5.3548
i_soln	78	14.347	-7.7516	-3.1478	-0.4844	0.5456	-5.0358	16.8463	13.6191	28.7818	1.8288	-4.4876	12.2778	-20.9345	-0.535	-0.809	-0.089	0.131	-0.069	0.3311	0.4767	-0.1318	-5.3162
i_soln	79	-1.8982	-8.9003	-9.3458	-7.0598	-6.0298	-22.8803	-3.4057	4.9555	6.1709	0.8842	-12.7749	-10.8298	-52.6561	-8.6269	-8.9009	-8.1809	-7.9609	-8.1609	-7.7609	-7.6153	-4.0842	-3.5454
i_soln	80	-1.4667	-8.7054	-9.005	-6.9623	-5.9323	-22.273	-3.6398	4.8371	5.9363	0.6125	-12.7336	-11.0642	-51.3696	-8.5179	-8.7919	-8.0719	-7.8519	-8.0519	-7.6519	-7.5063	-3.9959	-3.5468
i_soln	81	-0.2973	-9.5549	-8.2477	-5.9466	-4.9165	-19.956	0.1002	6.715	9.6763	3.7151	-9.4785	-7.3253	-48.2157	-7.7326	-8.0066	-7.2866	-7.0666	-7.2666	-6.8666	-6.721	-3.1353	-3.2711
i_soln	82	1.7941	-9.1245	-8.2041	-5.5552	-4.5252	-18.7953	2.4126	7.8669	11.9918	5.6135	-7.9457	-5.0094	-45.7357	-6.8918	-7.1658	-6.4458	-6.2258	-6.4258	-6.0258	-5.8802	-2.8348	-3.2919
i_soln	83	-0.398	-8.9028	-9.1449	-6.558	-5.528	-21.5371	-1.7293	5.7946	7.8479	2.5211	-10.9732	-9.1529	-50.6487	-8.0253	-8.2993	-7.5793	-7.3593	-7.5593	-7.1593	-7.0137	-3.6368	-3.2528
i_soln	84	0.2218	-9.1758	-8.3273	-5.9528	-4.9228	-19.6865	0.9212	7.1224	10.4981	4.2005	-9.4118	-6.5031	-48.2352	-7.6492	-7.9232	-7.2032	-6.9832	-7.1832	-6.7832	-6.6376	-3.1384	-3.5722
i_soln	85	1.9511	-8.6173	-9.5723	-6.1796	-5.1496	-20.2857	1.2391	7.268	10.8218	5.2113	-8.9924	-6.1775	-47.6752	-7.3676	-7.6416	-6.9216	-6.7016	-6.9016	-6.5016	-6.356	-3.31	-3.1671
i_soln	86	5.1496	-8.7357	-6.7235	-3.5909	-2.5608	-12.0484	10.3038	12.0947	19.7777	10.2476	-4.1914	2.3012	-38.6103	-5.424	-5.698	-4.978	-4.758	-4.958	-4.558	-4.4124	-1.946	-3.2956
i_soln	87	2.3277	-8.845	-8.3207	-5.0643	-4.0343	-16.7396	4.0707	8.8414	13.3516	6.8037	-7.0459	-3.6489	-44.4374	-6.7619	-7.0359	-6.3159	-6.0959	-6.2959	-5.8959	-5.7503	-2.6947	-3.3062
i_soln	88	2.5779	-8.8706	-8.2558	-5.0644	-4.0344	-16.5627	4.1062	8.8591	13.3865	6.7508	-7.1173	-3.614	-44.4413	-6.7176	-6.9916	-6.2716	-6.0516	-6.2516	-5.8516	-5.706	-2.6951	-3.3062
i_soln	89	2.8278	-8.5818	-7.5948	-4.8692	-3.8391	-15.6735	4.5342	9.0707	13.8154	6.6214	-7.0667	-3.1848	-44.1925	-6.6653	-6.9393	-6.2193	-5.9993	-6.1993	-5.7993	-5.6537	-2.5609	-3.3232
i_soln	90	-0.1027	-8.2723	-6.6603	-6.7383	-5.7083	-20.3755	-4.5946	4.4718	5.3741	-1.4793	-13.7092	-11.7162	-52.619	-8.7202	-8.9942	-8.2742	-8.0542	-8.2542	-7.8541	-7.7085	-4.0631	-3.5471
i_soln	91	6.8509	-8.1636	-4.0733	-3.1618	-2.1318	-9.8609	11.3709	12.4427	20.6892	8.6012	-4.701	3.9951	-37.3209	-5.0598	-5.3338	-4.6138	-4.3938	-4.5938	-4.1938	-4.0482	-1.5318	-3.5148
i_soln	92	4.9203	-8.8799	-5.4929	-4.1731	-3.1431	-14.1765	7.9446	10.624	17.5392	8.1049	-5.4313	0.5385	-40.1943	-5.5157	-5.7897	-5.0697	-4.8497	-5.0497	-4.6496	-4.504	-1.9572	-3.2939
i_soln	93	-0.7394	-9.0051	-8.5689	-6.5529	-5.5229	-21.3164	-2.2569	5.5333	7.3187	1.6655	-11.5592	-9.6824	-50.6391	-8.1659	-8.4399	-7.7199	-7.4999	-7.6999	-7.2999	-7.1543	-3.6357	-3.2527
i_soln	94	-1.1888	-8.8577	-8.6156	-6.7555	-5.7255	-21.8044	-3.469	4.9259	6.1066	0.7039	-12.3183	-10.8943	-51.4491	-8.6978	-8.9718	-8.2518	-8.0318	-8.2318	-7.8318	-7.6862	-3.8127	-3.2488
i_soln	95	-1.9908	-8.9812	-5.2559	-7.5832	-6.5532	-23.5426	-8.2322	2.5305	1.6398	-6.8068	-18.7906	-15.359	-54.7866	-9.053	-9.327	-8.607	-8.387	-8.587	-8.187	-8.0414	-4.6451	-3.5407
i_soln	96	-1.723	-8.9706	-8.6138	-7.1575	-6.1275	-22.7126	-5.1828	4.0681	4.3907	-0.9615	-13.9317	-12.61	-53.0682	-9.0628	-9.3368	-8.6168	-8.3968	-8.5968	-8.1968	-8.0512	-4.1782	-3.3681
i_soln	97	-1.8741	-8.9614	-7.5148	-7.3695	-6.3395	-23.0585	-6.7849	3.261	2.787	-2.8571	-15.445	-14.2129	-53.9265	-9.3398	-9.6138	-8.8938	-8.6738	-8.8738	-8.4738	-8.3282	-4.3787	-3.5422
i_soln	98	-1.431	-8.8592	-7.6018	-7.1748	-6.1448	-22.3978	-5.8808	3.7104	3.6909	-1.9183	-14.566	-13.3085	-53.1507	-9.0313	-9.3053	-8.5853	-8.3653	-8.5653	-8.1653	-8.0197	-4.1958	-3.5443
i_soln	99	7.8097	-9.0897	-2.6188	-2.8462	-1.8162	-8.869	12.6676	12.8489	22.36	7.8467	-4.4451	6.0771	-35.6346	-4.5637	-4.8377	-4.1177	-3.8977	-4.0977	-3.6977	-3.5521	-1.1437	-3.1924
i_soln	100	-2.1817	-7.6908	-7.0186	-7.8604	-6.8304	-23.9875	-7.5999	2.8081	2.276	-4.2341	-16.7373	-14.4143	-55.8916	-9.0364	-9.3104	-8.5904	-8.3704	-8.5704	-8.1703	-8.0247	-4.8298	-3.5395

state	soln	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL
i_soln	51	-42.2894	8.19E+01	1.10E+01	2.00E+00	2.00E+00	1.00E+00	2.67E+01	2.00E+01	7.75E-01	6.51E-05	4.40E-95	1.00E-01	0.00E+00	6.86E+00	1.07E+01	1.40E-02	4.00E+02	1.00E+00	4.00E+00	9.00E+00	7.00E+00	1.20E+01	2.96E+02	1.00E+01	1.00E-01
i_soln	52	-44.8894	8.27E+01	1.05E+01	2.00E+00	1.00E+00	1.00E+00	3.48E+01	1.70E+01	2.59E-01	4.89E-06	4.40E-95	1.00E-01	0.00E+00	7.53E+00	7.78E+00	1.75E-02	3.75E+02	1.00E+00	3.50E+00	5.50E+00	4.50E+00	5.50E+00	2.68E+02	6.00E+00	1.00E-01
i_soln	53	-45.8894	5.47E+01	1.00E+01	1.00E+00	1.00E+00	1.00E+00	1.86E+01	1.70E+01	1.54E-01	1.60E-06	4.40E-95	1.00E-01	0.00E+00	2.56E+00	2.65E+00	4.00E-03	4.00E+02	1.00E+00	2.00E+00	3.00E+00	3.00E+00	3.00E+00	1.90E+02	3.00E+00	1.00E-01
i_soln	54	-33.4895	2.32E+02	6.30E+01	1.00E+00	1.40E+01	5.00E+00	1.11E+02	2.00E+01	1.70E+01	2.46E-01	4.40E-95	6.00E-01	0.00E+00	3.60E-01	1.40E-01	1.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+01	1.00E+00	1.00E-01
i_soln	55	-29.0895	1.27E+02	4.00E+01	1.00E+00	4.00E+00	1.00E+00	4.27E+01	1.50E+01	1.72E+01	2.95E+00	4.40E-95	6.00E-01	0.00E+00	1.25E+00	7.80E-01	2.00E-03	2.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.00E+01	1.00E+00	1.00E-01
i_soln	56	-27.0894	1.09E+02	3.80E+01	1.00E+00	1.00E+00	1.00E+00	2.55E+01	1.20E+01	1.77E+01	9.51E+00	4.40E-95	5.00E-01	0.00E+00	1.31E+00	9.40E-01	6.00E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	2.00E+00	3.00E+00	4.50E+01	2.00E+00	1.00E-01
i_soln	57	-45.8894	3.06E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.82E+01	1.00E+00	1.02E-01	1.03E-06	4.40E-95	1.00E-01	0.00E+00	2.42E+00	3.54E+00	2.30E-02	1.90E+02	1.00E+00	1.00E+00	2.00E+00	3.00E+00	1.00E+00	8.20E+01	2.00E+00	1.00E-01
i_soln	58	-47.8894	4.75E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	2.71E+01	4.00E+00	3.46E-02	1.13E-07	4.40E-95	1.00E-01	0.00E+00	3.49E+00	5.32E+00	1.10E-02	2.70E+02	1.00E+00	1.00E+00	4.00E+00	1.00E+00	1.00E+00	1.72E+02	4.00E+00	1.00E-01
i_soln	59	-48.6894	4.97E+01	4.00E+00	3.00E+00	1.00E+00	1.00E+00	2.94E+01	4.00E+00	2.21E-02	4.59E-08	4.40E-95	1.00E-01	0.00E+00	4.10E+00	2.42E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	4.00E+00	2.00E+00	1.00E+00	2.81E+02	6.00E+00	1.00E-01
i_soln	60	-38.2894	8.42E+01	4.00E+00	1.00E+00	1.30E+01	5.00E+00	2.27E+00	5.70E+01	1.07E+00	9.14E-04	4.40E-95	1.00E-01	0.00E+00	1.20E-01	5.00E-02	2.21E-01	1.10E+02	1.00E+00	5.00E+00	1.00E+00	1.00E+00	8.10E+01	1.02E+02	1.00E+00	1.00E-01
i_soln	61	-41.0894	4.24E+01	3.00E+00	1.00E+00	7.00E+00	1.00E+00	2.29E+00	2.60E+01	7.22E-01	1.18E-04	4.40E-95	1.00E-01	0.00E+00	1.90E-01	9.00E-02	7.44E-01	1.10E+02	1.00E+00	1.50E+01	1.00E+00	1.00E+00	2.10E+01	7.10E+01	1.00E+00	1.00E-01
i_soln	62	-46.2894	5.34E+01	4.00E+00	1.00E+00	5.00E+00	4.00E+00	6.90E+00	3.10E+01	8.34E-02	6.92E-07	4.40E-95	1.00E-01	0.00E+00	3.00E-01	2.80E-01	4.79E-01	1.60E+02	1.00E+00	8.00E+00	1.00E+00	1.00E+00	8.00E+00	6.30E+01	1.00E+00	1.00E-01
i_soln	63	-49.0895	2.41E+02	6.00E+00	1.00E+00	4.40E+01	1.30E+01	8.24E+00	1.66E+02	1.83E-02	3.43E-08	4.40E-95	1.00E-01	0.00E+00	1.60E-01	1.20E-01	1.88E+00	1.80E+02	1.00E+00	3.50E+01	1.00E+00	1.00E+00	2.40E+01	1.82E+02	1.00E+00	1.00E-01
i_soln	64	-40.2894	2.56E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.49E+00	1.00E+00	1.69E+00	4.24E-04	4.40E-95	2.00E-01	0.00E+00	3.28E+00	3.55E+00	2.90E-02	2.30E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	3.00E+00	7.20E+01	2.00E+00	1.00E-01
i_soln	65	-37.4894	2.32E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	4.61E+00	2.00E+00	2.80E+00	3.48E-03	4.40E-95	2.00E-01	0.00E+00	3.51E+00	3.65E+00	5.20E-02	2.50E+02	1.00E+00	2.00E+00	4.00E+00	2.00E+00	3.00E+00	1.12E+02	3.00E+00	1.00E-01
i_soln	66	-33.0894	6.93E+01	1.60E+01	3.00E+00	2.00E+00	1.00E+00	4.97E+00	1.40E+01	4.74E+00	7.79E-02	4.40E-95	1.10E+00	0.00E+00	1.06E+01	1.08E+01	2.20E-02	6.30E+02	2.00E+00	3.00E+00	4.00E+00	5.00E+00	2.60E+01	2.79E+02	9.00E+00	1.00E-01
i_soln	67	-29.8894	5.72E+01	1.40E+01	1.00E+00	3.00E+00	1.00E+00	9.26E+00	8.00E+00	1.63E+01	1.68E+00	4.40E-95	4.00E-01	0.00E+00	1.33E+00	9.10E-01	7.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+00	4.20E+01	1.00E+00	1.00E-01
i_soln	68	-28.6894	7.81E+01	2.40E+01	1.00E+00	1.00E+00	1.00E+00	1.27E+01	1.60E+01	1.64E+01	3.42E+00	4.40E-95	4.00E-01	0.00E+00	1.04E+00	7.90E-01	2.60E-02	1.70E+02	1.00E+00	2.00E+00	4.00E+00	9.60E+01	6.00E+00	7.80E+01	1.00E+00	1.00E-01
i_soln	69	-48.4894	2.73E+01	2.50E+00	1.00E+00	1.00E+00	1.00E+00	1.58E+01	2.50E+00	2.45E-02	5.52E-08	4.40E-95	1.00E-01	0.00E+00	1.67E+00	1.28E+00	8.50E-03	3.40E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	9.50E+01	1.00E+00	1.00E-01
i_soln	70	-49.4894	2.66E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.06E+01	8.00E+00	6.93E-03	8.77E-09	4.40E-95	1.00E-01	0.00E+00	1.11E+00	4.90E-01	5.40E-02	2.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+01	1.00E+00	1.00E-01
i_soln	71	-49.0894	2.18E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	8.83E+00	6.00E+00	8.67E-03	1.37E-08	4.40E-95	1.00E-01	0.00E+00	4.80E-01	1.40E-01	1.20E-02	1.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.90E+01	1.00E+00	1.00E-01
i_soln	72	-32.6894	4.23E+01	3.00E+00	1.00E+00	8.00E+00	1.00E+00	9.81E+00	2.00E+00	1.53E+01	3.11E-01	4.40E-95	4.00E-01	0.00E+00	7.90E-01	3.80E-01	9.00E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+01	1.00E+00	1.00E-01
i_soln	73	-30.2894	4.73E+01	4.00E+00	1.00E+00	9.00E+00	1.00E+00	7.78E+00	1.00E+01	1.21E+01	9.86E-01	4.40E-95	3.00E-01	0.00E+00	5.70E-01	3.30E-01	8.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.80E+01	1.00E+00	1.00E-01
i_soln	74	-29.4894	4.55E+01	4.00E+00	1.00E+00	9.00E+00	1.00E+00	9.15E+00	7.00E+00	1.14E+01	1.48E+00	4.40E-95	4.00E-01	0.00E+00	4.70E-01	2.80E-01	2.00E-03	2.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.40E+01	1.00E+00	1.00E-01
i_soln	75	-30.6894	1.09E+02	2.50E+01	1.00E+00	6.00E+00	3.00E+00	1.50E+01	3.30E+01	2.01E+01	1.37E+00	4.40E-95	9.00E-01	0.00E+00	2.39E+00	9.20E-01	4.00E-03	3.50E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	2.00E+00	7.40E+01	1.00E+00	1.00E-01
i_soln	76	-30.6894	1.39E+02	3.50E+01	1.00E+00	6.00E+00	3.00E+00	1.52E+01	5.70E+01	1.79E+01	1.24E+00	4.40E-95	1.20E+00	0.00E+00	7.70E-01	1.80E-01	1.00E-03	8.60E+02	1.00E+00	1.00E+00	2.00E+00	4.00E+00	1.00E+00	1.14E+02	1.00E+00	1.00E-01
i_soln	77	-28.6894	1.03E+02	3.10E+01	1.00E+00	3.00E+00	1.00E+00	1.31E+01	2.80E+01	1.71E+01	3.66E+00	4.40E-95	9.00E-01	0.00E+00	2.53E+00	1.31E+00	5.00E-03	6.10E+02	1.00E+00	1.00E+00	2.00E+00	4.00E+00	2.00E+00	1.44E+02	2.00E+00	1.00E-01
i_soln	78	-29.0894	1.10E+02	3.50E+01	1.00E+00	1.00E+00	1.00E+00	1.83E+01	3.20E+01	1.49E+01	2.53E+00	4.40E-95	7.00E-01	0.00E+00	1.58E+00	1.34E+00	1.00E-02	3.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.00E+00	7.70E+01	2.00E+00	1.00E-01
i_soln	79	-48.0894	2.65E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.45E+01	3.00E+00	1.53E-02	4.33E-08	4.40E-95	1.00E-01	0.00E+00	1.30E+00	1.17E+00	1.50E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	8.75E+01	1.00E+00	1.00E-01
i_soln	80	-47.8894	2.98E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.37E+01	6.00E+00	1.71E-02	5.45E-08	4.40E-95	1.00E-01	0.00E+00	1.03E+00	5.70E-01	1.00E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	9.00E+01	2.00E+00	1.00E-01
i_soln	81	-45.8894	1.65E+01	1.00E+00	1.00E+00	1.00E+00	1.00E+00	9.53E+00	1.00E+00	1.01E-01	1.00E-06	4.40E-95	1.00E-01	0.00E+00	1.07E+00	4.00E-01	1.00E-03	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.30E+01	1.00E+00	1.00E-01
i_soln	82	-45.0894	2.24E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.29E+01	1.00E+00	1.54E-01	2.42E-06	4.40E-95	1.00E-01	0.00E+00	1.87E+00	9.30E-01	1.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.48E+02	2.00E+00	1.00E-01
i_soln	83	-47.0894	2.52E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.44E+01	2.00E+00	5.33E-02	2.68E-07	4.40E-95	1.00E-01	0.00E+00	1.45E+00	8.00E-01	2.00E-03	2.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.10E+02	1.00E+00	1.00E-01
i_soln	84	-45.8894	2.11E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.15E+01	2.00E+00	5.08E-02	5.05E-07	4.40E-95	1.00E-01	0.00E+00	1.17E+00	1.05E+00	1.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	6.50E+01	1.00E+00	1.00E-01
i_soln	85	-46.2894	4.32E+01	3.50E+00	2.00E+00	1.00E+00	1.00E+00	2.42E+01	3.00E+00	1.04E-01	8.46E-07	4.40E-95	1.00E-01	0.00E+00	3.54E+00	4.11E+00	2.00E-03	3.90E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.06E+02	3.00E+00	1.00E-01
i_soln	86	-42.2894	4.59E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	2.14E+01	2.00E+00	7.71E-01	6.26E-05	4.40E-95	1.00E-01	0.00E+00	6.63E+00	7.44E+00	3.20E-02	2.70E+02	1.00E+00	3.00E+00	6.00E+00	4.00E+00	1.00E+01	1.80E+02	7.00E+00	1.00E-01
i_soln	87	-44.6894	3.01E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.65E+01	2.00E+00	1.88E-01	3.77E-06	4.40E-95	1.00E-01	0.00E+00	3.06E+00	1.82E+00	1.20E-02	3.10E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	2.00E+00	1.28E+02	3.00E+00	1.00E-01
i_soln	88	-44.6894	3.01E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.56E+01	3.00E+00	1.88E-01	3.77E-06	4.40E-95	1.00E-01	0.00E+00	2.84E+00	1.90E+00	1.00E-02	3.10E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	2.00E+00	1.42E+02	3.00E+00	1.00E-01
i_soln	89	-44.2894	3.41E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	1.52E+01	6.00E+00	2.28E-01	5.77E-06	4.40E-95	1.00E-01	0.00E+00	1.88E+00	1.26E+00	4.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.02E+02	2.00E+00	1.00E-01
i_soln	90	-47.8894	1.13E+02	1.50E+01	1.00E+00	1.30E+01	4.00E+00	1.31E+01	6.60E+01	1.76E-02	6.08E-08	4.40E-95	1.00E-01	0.00E+00	5.30E-01	1.80E-01	9.30E-02	2.10E+02	1.00E+00	5.00E+00	1.00E+00	2.00E+00	7.00E+00	6.80E+01	1.00E+00	1.00E-01
i_soln	91	-40.6894	8.78E+01	1.50E+01	1.00E+00	9.00E+00	2.00E+00	1.65E+01	4.00E+01	1.19E+00	2.53E-04	4.40E-95	1.00E-01	0.00E+00	1.26E+00	1.38E+00	2.20E-02	2.10E+02	1.00E+00	1.00E+00	1.00E+00	2.00E+00	2.00E+00	7.40E+01	2.00E+00	1.00E-01
i_soln	92	-42.2894	2.55E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	1.13E+01	3.00E+00	7.67E-01	6.07E-05	4.40E-95	2.00E-01	0.00E+00	1.68E+00	9.30E-01	1.00E-03	3.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.41E+02	2.00E+00	1.00E-01
i_soln	93	-47.0894	2.21E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.13E+01	3.00E+00	5.32E-02	2.65E-07	4.40E-95	1.00E-01	0.00E+00	8.10E-01	4.30E-01	2.00E-03	2.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	7.90E+01	1.00E+00	1.00E-01
i_soln	94	-47.4894	2.45E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	1.20E+01	4.00E+00	4.27E-02	1.70E-07	4.40E-95	1.00E-01	0.00E+00	7.50E-01	2.70E-01	2.00E-03	3.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.70E+01	1.00E+00	1.00E-01
i_soln	95	-49.0894	4.49E+01	5.00E+00	1.00E+00	5.00E+00	2.00E+00	7.36E+00	2.40E+01	8.77E-03	1.43E-08	4.40E-95	1.00E-01	0.00E+00	9.00E-02	5.00E-02	4.10E-02	1.50E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	4.00E+00	1.11E+02	1.00E+00	1.00E-01
i_soln	96	-48.2894	2.56E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	9.24E+00	8.00E+00	2.05E-02	5.15E-08	4.40E-95	1.00E-01	0.00E+00	6.70E-01	2.40E-01	3.50E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+00	4.05E+01	1.00E+00	1.00E-01
i_soln	97	-48.6894	3.45E+01	5.00E+00	1.00E+00	3.00E+00	1.00E+00	7.62E+00	1.60E+01	1.09E-02	2.22E-08	4.40E-95	1.00E-01	0.00E+00	4.10E-01	1.00E-01	1.40E-02	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	3.50E+01	1.00E+00	1.00E-01
i_soln	98	-48.2894	3.94E+01	6.50E+00	1.00E+00	3.00E+00	1.00E+00	7.44E+00	1.95E+01	1.37E-02	3.52E-08	4.40E-95	1.00E-01	0.00E+00	4.85E-01	1.15E-01	1.50E-02	1.75E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.50E+00	4.55E+01	1.00E+00	1.00E-01
i_soln	99	-39.0895	2.58E+02	1.05E+01	1.00E+00	5.80E+01	5.00E+00	3.00E+00	1.72E+02	6.46E+00	3.84E-03	4.40E-95	2.00E-01	0.00E+00	9.40E-01	7.10E-01	2.00E-03	2.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.70E+01	1.00E+00	1.00E-01
i_soln	100	-49.4894	1.51E+02	3.20E+01	1.00E+00	9.00E+00	4.00E+00	2.37E+01	8.00E+01	7.16E-03	1.00E-08	4.40E-95	1.00E-01	0.00E+00	6.40E-01	3.40E-01	1.30E-02	2.10E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.10E+01	2.15E+02	1.00E+00	1.00E-01

state	soln	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
i_soln	51	2.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	52	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	53	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	54	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	55	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	56	6.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	57	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	58	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	59	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	60	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	61	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	62	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	63	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	64	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	65	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	66	3.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	67	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	68	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	69	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	70	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	71	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	72	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	73	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	74	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	75	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	76	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	77	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	78	3.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	79	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	80	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	81	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	82	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	83	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	84	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	85	2.50E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	86	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	87	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	88	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	89	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	90	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	91	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	92	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	93	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	94	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	95	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	96	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	97	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	98	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	99	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	100	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li	Mg	Mn	Na	N(-3)	N(5)
i_soln	101	4.2	4	-7.60E-05	0.007	1	6.07E-14	7.61E-10	1.20E-05	1.34E-08	2.31E-05	1.66E-07	6.99E-04	8.90E-10	5.76E-04	8.49E-08	1.92E-08	1.57E-08	9.99E-06	5.27E-06	1.07E-06	5.12E-05	2.23E-06	3.09E-04	1.17E-06	2.13E-03	0.00E+00	0.00E+00
i_soln	102	5.2	4	1.21E-04	8E-04	1	-1.87E-18	-1.59E-13	1.15E-04	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	5.51E-04	1.70E-08	5.77E-08	3.15E-08	2.00E-05	5.26E-06	3.87E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
i_soln	103	5	4	1.93E-05	8E-04	1	7.12E-15	6.20E-10	4.52E-05	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	3.82E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	6.09E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	3.04E-04	0.00E+00	0.00E+00
i_soln	104	5.2	4	3.25E-05	0.001	1	5.85E-19	3.59E-14	4.19E-05	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	5.76E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	5.19E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	5.65E-04	0.00E+00	0.00E+00
react	1001	3.781	4.98	-1.69E-04	0.001	1	7.33E-17	4.76E-12	6.25E-05	1.33E-08	3.52E-05	1.11E-07	2.50E-05	8.90E-10	7.03E-04	1.70E-08	5.77E-08	1.57E-08	3.00E-05	5.26E-06	3.21E-05	5.12E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
react	1002	3.849	4.96	-1.45E-04	1E-03	1	2.04E-18	1.42E-13	4.53E-05	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	5.97E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	1.83E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.61E-04	0.00E+00	0.00E+00
react	1003	4.06	4.67	-8.82E-05	6E-04	1	1.16E-13	1.29E-08	1.27E-05	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	4.11E-04	1.70E-08	3.85E-08	1.73E-07	2.00E-05	5.26E-06	1.74E-05	2.56E-05	1.44E-07	4.11E-05	3.09E-07	1.30E-04	0.00E+00	0.00E+00
react	1004	3.93	5.1	-1.19E-04	7E-04	1	3.96E-13	3.82E-08	2.38E-05	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	4.81E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	2.04E-05	2.56E-05	1.44E-07	4.11E-05	3.09E-07	1.30E-04	0.00E+00	0.00E+00
react	1005	3.847	4.82	-1.45E-04	0.001	1	-3.12E-19	-2.07E-14	4.33E-05	1.33E-08	4.26E-05	1.11E-07	2.50E-05	8.90E-10	6.65E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	6.43E-05	5.12E-05	1.44E-07	4.11E-05	5.46E-08	1.74E-04	0.00E+00	0.00E+00
react	1006	3.968	4.68	-1.10E-04	8E-04	1	3.57E-17	2.78E-12	2.12E-05	1.33E-08	3.05E-05	1.11E-07	2.50E-05	8.90E-10	5.66E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	3.46E-05	5.12E-05	7.20E-07	4.11E-05	5.46E-08	2.17E-04	0.00E+00	0.00E+00
react	1007	9.318	3.42	2.78E-04	8E-04	1	-2.31E-13	-2.00E-08	3.29E-07	7.66E-15	1.48E-05	1.11E-07	1.75E-04	8.90E-10	2.63E-04	1.70E-08	1.92E-08	4.81E-09	2.20E-04	1.05E-05	1.65E-13	2.56E-05	1.44E-07	4.11E-05	1.99E-07	1.31E-04	0.00E+00	0.00E+00
react	1008	9.257	3.55	3.00E-04	9E-04	1	-1.35E-15	-1.09E-10	2.86E-07	8.90E-15	1.39E-05	1.11E-07	2.20E-04	8.90E-10	2.62E-04	1.70E-08	1.92E-08	5.25E-09	2.45E-04	1.58E-05	1.51E-13	2.56E-05	1.44E-07	4.11E-05	2.36E-07	8.70E-05	0.00E+00	0.00E+00
react	1009	8.907	3.68	2.08E-04	0.003	1	-2.47E-15	-7.34E-11	1.31E-07	3.94E-13	1.85E-05	1.11E-07	7.98E-04	8.90E-10	1.47E-04	1.70E-08	1.92E-08	7.20E-09	1.79E-04	2.63E-05	1.04E-13	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.31E-04	0.00E+00	0.00E+00
react	1010	8.785	1.05	1.80E-04	0.003	1	-1.13E-17	-3.01E-13	9.95E-08	5.48E-13	1.20E-05	1.11E-07	7.74E-04	8.90E-10	3.28E-04	1.70E-08	1.92E-08	1.59E-08	1.60E-04	1.05E-05	9.67E-14	2.56E-05	1.44E-07	1.65E-04	3.64E-08	1.31E-04	0.00E+00	0.00E+00
react	1011	8.693	-1.19	7.53E-05	0.005	1	2.83E-15	5.22E-11	8.15E-08	1.53E-12	1.85E-05	1.11E-07	1.75E-04	8.90E-10	2.62E-04	1.70E-08	1.92E-08	1.57E-08	6.00E-05	1.58E-05	5.89E-13	2.56E-05	1.44E-07	1.11E-03	7.28E-08	3.92E-04	0.00E+00	0.00E+00
react	1012	4	4	-1.76E-04	0.049	1	1.27E-15	2.46E-12	2.49E-05	1.34E-08	4.82E-05	1.11E-07	1.48E-02	1.78E-09	5.55E-03	1.19E-07	1.93E-08	3.15E-08	1.00E-05	5.28E-06	8.97E-07	7.69E-05	5.78E-07	3.51E-03	2.01E-06	6.54E-04	0.00E+00	0.00E+00
react	1013	7.724	2.49	4.14E-04	0.046	1	1.68E-18	3.44E-15	9.94E-09	3.74E-10	1.76E-05	1.11E-07	1.43E-02	8.92E-10	3.68E-03	1.70E-08	1.93E-08	1.58E-08	4.17E-04	3.17E-05	3.51E-13	2.56E-05	5.78E-07	3.38E-03	1.82E-08	3.92E-04	0.00E+00	0.00E+00
react	1014	9.381	-1.88	9.24E-05	4E-04	1	1.24E-15	1.96E-10	3.77E-07	5.81E-15	3.33E-05	1.11E-07	2.50E-05	8.90E-10	1.81E-04	1.70E-08	5.77E-08	3.15E-08	4.00E-05	5.26E-06	2.06E-13	5.12E-05	1.44E-07	4.11E-05	1.27E-07	1.30E-04	0.00E+00	0.00E+00
react	1015	8.422	2.19	5.93E-04	0.002	1	5.60E-13	1.93E-08	4.28E-08	1.00E-13	1.30E-05	1.11E-07	6.48E-04	8.90E-10	5.94E-04	1.70E-08	1.92E-08	1.57E-08	5.78E-04	3.68E-05	8.87E-14	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
react	1016	5.559	-0.41	3.44E-06	5E-04	1	8.73E-15	1.29E-09	2.86E-08	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	2.66E-04	1.70E-08	1.92E-08	1.57E-08	4.00E-05	5.26E-06	2.07E-05	2.56E-05	1.44E-07	4.11E-05	9.10E-08	1.30E-04	0.00E+00	0.00E+00
react	1017	4.007	4.84	-9.99E-05	6E-04	1	3.41E-13	3.49E-08	1.66E-05	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	4.31E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	2.51E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
react	1018	4.005	4.79	-1.00E-04	7E-04	1	2.83E-14	2.43E-09	1.70E-05	1.33E-08	3.33E-05	1.11E-07	2.50E-05	8.90E-10	5.25E-04	1.70E-08	1.92E-08	1.57E-08	3.00E-05	5.26E-06	2.70E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
react	1019	4.261	4.26	-5.55E-05	6E-04	1	5.91E-18	6.72E-13	6.65E-06	1.33E-08	1.80E-05	1.11E-07	2.50E-05	8.90E-10	3.68E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	4.30E-06	2.56E-05	2.88E-07	4.11E-05	2.18E-07	1.96E-04	0.00E+00	0.00E+00
react	1020	4.054	5.06	-8.94E-05	5E-04	1	1.44E-15	1.86E-10	1.26E-05	1.33E-08	1.94E-05	1.11E-07	2.50E-05	8.90E-10	3.68E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	8.60E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
react	1021	4.297	4.29	-5.07E-05	4E-04	1	3.08E-13	4.51E-08	5.84E-06	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	3.21E-04	1.70E-08	5.77E-08	1.57E-08	2.00E-05	5.26E-06	1.54E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
react	1022	4.338	4.19	-4.61E-05	4E-04	1	8.85E-14	1.32E-08	5.32E-06	1.33E-08	2.04E-05	1.11E-07	2.50E-05	8.90E-10	3.15E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.44E-05	2.56E-05	1.44E-07	4.11E-05	7.28E-08	8.70E-05	0.00E+00	0.00E+00
react	1023	3.938	4.95	-1.17E-04	8E-04	1	-5.89E-17	-4.84E-12	2.38E-05	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	5.53E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	2.29E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
react	1024	4.243	4.46	-5.81E-05	7E-04	1	2.54E-13	2.32E-08	7.08E-06	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	4.66E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	3.40E-06	2.56E-05	4.32E-07	4.11E-05	5.46E-08	3.04E-04	0.00E+00	0.00E+00
react	1025	4.252	4.44	-5.78E-05	0.001	1	7.17E-15	2.93E-10	7.55E-06	1.33E-08	1.99E-05	1.11E-07	2.50E-05	8.90E-10	1.05E-03	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.87E-06	2.56E-05	1.08E-06	4.11E-05	1.82E-08	9.79E-04	0.00E+00	0.00E+00
react	1026	4.4	4	-4.20E-05	0.002	1	-1.73E-13	-4.85E-09	3.71E-07	1.33E-08	2.59E-05	1.11E-07	2.50E-05	8.90E-10	1.43E-03	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	1.44E-06	8.23E-05	5.46E-08	1.48E-03	0.00E+00	0.00E+00
react	1027	4.434	4.34	-3.69E-05	5E-04	1	3.12E-15	4.50E-10	4.41E-06	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	2.63E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	4.83E-06	2.56E-05	4.32E-07	4.11E-05	1.82E-08	1.30E-04	0.00E+00	0.00E+00
react	1028	4.2	4	-6.55E-05	0.001	1	6.02E-14	2.94E-09	8.90E-06	1.33E-08	1.67E-05	1.11E-07	2.50E-05	8.90E-10	7.47E-04	1.36E-07	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	1.01E-06	1.23E-04	1.09E-07	6.09E-04	0.00E+00	0.00E+00
react	1029	4.3	4	-5.17E-05	0.001	1	1.02E-14	6.46E-10	4.45E-06	1.33E-08	1.02E-05	1.11E-07	2.50E-05	8.90E-10	5.86E-04	8.48E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	7.20E-07	8.23E-05	7.28E-08	4.78E-04	0.00E+00	0.00E+00
react	1030	4.043	4.57	-9.19E-05	6E-04	1	2.88E-13	2.90E-08	1.37E-05	1.33E-08	3.33E-05	1.11E-07	2.50E-05	8.90E-10	4.57E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	3.66E-05	2.56E-05	1.44E-07	4.11E-05	7.28E-08	1.30E-04	0.00E+00	0.00E+00
react	1031	3.801	5.07	-1.62E-04	0.001	1	1.24E-12	8.01E-08	5.56E-05	1.33E-08	4.16E-05	1.11E-07	2.50E-05	8.90E-10	7.08E-04	1.70E-08	5.77E-08	1.57E-08	3.00E-05	5.26E-06	4.80E-05	5.12E-05	2.88E-07	4.11E-05	7.28E-08	1.74E-04	0.00E+00	0.00E+00
react	1032	4.243	3.81	-5.80E-05	8E-04	1	-1.95E-18	-1.69E-13	7.11E-06	2.67E-08	3.42E-05	1.11E-07	2.50E-05	8.90E-10	4.97E-04	1.70E-08	3.85E-08	1.57E-08	3.00E-05	5.26E-06	6.05E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
react	1033	3.871	5.05	-1.37E-04	8E-04	1	-3.17E-14	-2.70E-09	3.22E-05	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	5.70E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.38E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
react	1034	3.853	4.87	-1.43E-04	8E-04	1	-1.38E-15	-1.14E-10	3.58E-05	1.33E-08	2.04E-05	1.11E-07	2.50E-05	8.90E-10	5.87E-04	1.70E-08	5.77E-08	3.15E-08	3.00E-05	5.26E-06	5.62E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	8.70E-05	0.00E+00	0.00E+00
react	1035	3.837	4.9	-1.48E-04	9E-04	1	2.15E-13	1.60E-08	4.26E-05	1.33E-08	3.05E-05	1.11E-07	2.50E-05	8.90E-10	6.19E-04	1.70E-08	5.77E-08	3.15E-08	2.00E-05	5.26E-06	5.73E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.31E-04	0.00E+00	0.00E+00
react	1036	3.694	5.18	-2.07E-04	0.001	1	7.22E-15	3.47E-10	1.06E-04	2.67E-08	4.90E-05	1.11E-07	2.50E-05	8.90E-10	1.01E-03	1.70E-08	9.62E-08	4.72E-08	2.00E-05	5.26E-06	6.61E-05	7.67E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
react	1037	3.824	5.04	-1.53E-04	1E-03	1	1.13E-18	7.54E-14	4.49E-05	1.33E-08	3.98E-05	1.11E-07	2.50E-05	8.90E-10	7.12E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	2.88E-05	5.12E-05	4.32E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
react	1038	5.944	-2.19	2.20E-05	8E-04	1	2.89E-15	2.30E-10	7.50E-09	1.33E-08	5.27E-05	1.11E-07	7.49E-05	8.90E-10	5.25E-04	5.09E-08	2.12E-07	7.87E-08	7.99E-05	1.05E-05	3.11E-05	5.12E-05	8.64E-07	4.11E-05	7.46E-07	2.61E-04	0.00E+00	0.00E+00
react	1039	3.753	4.54	-1.82E-04	0.002	1	1.61E-15	5.29E-11	8.98E-05	1.33E-08	7.68E-05	1.11E-07	7.49E-05	8.90E-10	1.44E-03	6.79E-08	2.89E-07	1.42E-07	5.00E-05	1.05E-05	1.87E-04	7.67E-05	1.15E-06	4.11E-05	4.91E-07	3.92E-04	0.00E+00	0.00E+00
react	1040	3.861	4.75	-1.43E-04	0.002	1	1.01E-14	4.35E-10	5.95E-05	2.67E-08	5.46E-05	1.11E-07	2.50E-05	8.90E-10	8.80E-04	1.70E-08	5.77E-08	6.30E-08	4.00E-05	1.05E-05	6.71E-05	5.12E-05	4.32E-07	4.11E-05	3.64E-08	5.66E-04	0.00E+00	0.00E+00
react	1041	4.408	3.54	-3.90E-05	5E-04	1	3.80E-16	4.48E-11	4.59E-06	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	4.03E-04	1.70E-08	3.85E-08	1.57E-08	4.00E-05	5.26E-06	4.02E-05	2.56E-05	1.44E-07	4.11E-05	6.55E-07	1.30E-04	0.00E+00	0.00E+00
react	1042	6.271	-2.59	1.82E-05	4E-04	1	6.66E-14	1.07E-08	9.62E-10	1.33E-08	2.22E-05	1.11E-07	2.50E-05	8.90E-10	2.67E-04	1.70E-08	3.85E-08	3.15E-08	4.00E-05	5.26E-06	7.37E-06	2.56E-05	1.44E-07	4.11E-05	5.10E-07	1.30E-04	0.00E+00	0.00E+00
react	1043	4.43	4.19	-3.74E-05	5E-04	1	6.31E-15	1.02E-09	4.56E-06	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	1.45E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.87E-06	2.56E-05	1.44E-07	4.11E-05	7.28E-08	8.70E-05	0.00E+00	0.00E+00
react	1044	4.6	4	-2.51E-05	5E-04	1	-3.32E-20	-5.16E-15	1.48E-06	1.33E-08	1.02E-05	1.11E-07	2.50E-05	8.90E-10	1.75E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	8.95E-07	2.56E-05	1.44E-07	4.11E-05	1.27E-07	1.30E-04	0.00E+00	0.00E+00
react	1045	4.6	4	-2.50E-05	4E-04	1	1.73E-19	2.68E-14	1.11E-06	1.33E-08	1.39E-05	1.11E-07	2.50E-05	8.90E-10	2.15E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	8.95E-07	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.30E-04	0.00E+00	0.00E+00
react	1046	4.203	4.42	-6.32E-05	5E-04	1	6.64E-14	8.91E-09	7.62E-06	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	3.32E-04	3.39E-08	1.92E-08	1.57E-08	3.00E-05	5.26E-06	2.07E-05	2.56E-05	1.44E-07	4.11E-05	4.37E-07	8.70E-05	0.00E+00	0.00E+00

state	soln	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite
i_soln	101	4.35E-07	0.00E+00	4.83E-09	1.88E-03	0.00E+00	1.96E-07	6.83E-06	1.23E-15	8.19E-14	3.95E-12	6.23E-16	8.33E-15	2.17E-16	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	2.60E-06	4.19E-14	3.66E-11	2.06E-08	3.43E-11	5.70E-15	1.92E-18	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	1.70E-08	0.00E+00	4.83E-09	1.04E-04	0.00E+00	1.96E-07	8.26E-07	6.49E-15	3.59E-12	1.28E-09	1.34E-12	4.76E-15	8.60E-18	-1.43E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	1.70E-08	0.00E+00	4.83E-09	1.25E-04	0.00E+00	1.96E-07	8.41E-07	5.63E-15	4.83E-12	2.69E-09	4.45E-12	4.83E-15	1.06E-17	-1.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	1.70E-08	0.00E+00	1.45E-08	4.16E-05	0.00E+00	1.96E-07	4.05E-06	3.34E-13	1.09E-11	2.31E-10	1.46E-14	7.93E-14	4.82E-17	-1.26E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	1.70E-08	0.00E+00	1.45E-08	7.29E-05	0.00E+00	1.96E-07	3.44E-06	1.83E-13	7.05E-12	1.76E-10	1.30E-14	8.36E-14	9.65E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	2.32E-06	8.64E-14	5.62E-12	2.33E-10	2.82E-14	1.37E-14	5.17E-18	-1.32E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	1.85E-06	2.72E-13	1.30E-11	3.96E-10	3.54E-14	4.01E-14	1.43E-17	-1.27E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	1.70E-08	0.00E+00	1.45E-08	5.20E-05	0.00E+00	1.96E-07	3.98E-06	4.70E-13	1.79E-11	4.43E-10	3.25E-14	1.50E-13	1.22E-16	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	2.98E-06	1.80E-13	9.22E-12	3.05E-10	2.96E-14	5.20E-14	3.72E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	4.13E-07	2.92E-29	3.35E-22	2.47E-15	5.38E-14	4.46E-30	1.68E-33	-2.87E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	3.21E-07	4.51E-29	4.46E-22	2.85E-15	5.38E-14	1.00E-29	5.60E-33	-2.85E+01	4.39E-06	4.39E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	1.70E-08	0.00E+00	4.83E-09	7.27E-04	0.00E+00	1.96E-07	3.06E-07	6.44E-28	2.48E-21	6.55E-15	5.38E-14	2.28E-27	2.53E-29	-2.74E+01	8.26E-07	8.26E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	1.70E-08	0.00E+00	4.83E-09	7.58E-04	0.00E+00	1.96E-07	3.06E-07	1.53E-27	4.39E-21	8.69E-15	5.38E-14	5.44E-27	6.17E-29	-2.71E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	5.11E-08	0.00E+00	4.83E-09	1.32E-03	0.00E+00	1.96E-07	7.34E-07	3.24E-27	7.05E-21	1.09E-14	5.38E-14	1.72E-26	3.22E-28	-2.68E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	4.10E-07	0.00E+00	4.84E-09	1.61E-02	0.00E+00	1.97E-07	1.28E-05	1.22E-15	2.93E-14	6.46E-13	5.80E-17	1.33E-14	1.41E-15	-1.57E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	5.12E-08	0.00E+00	4.84E-09	1.59E-02	0.00E+00	1.97E-07	2.85E-06	7.40E-24	9.57E-19	1.13E-13	5.38E-14	8.38E-23	8.99E-24	-2.39E+01	4.03E-06	4.03E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	3.41E-08	0.00E+00	3.01E-09	2.08E-05	0.00E+00	1.96E-07	3.81E-07	1.73E-29	2.41E-22	2.12E-15	5.38E-14	3.03E-30	1.22E-33	-2.89E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	1.70E-08	0.00E+00	4.83E-09	1.35E-04	0.00E+00	1.96E-07	6.58E-07	1.69E-26	2.24E-20	1.98E-14	5.38E-14	1.25E-26	2.67E-29	-2.60E+01	5.12E-05	5.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	1.67E-06	8.46E-19	1.76E-15	2.32E-12	8.87E-15	2.18E-19	1.30E-22	-1.82E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	2.88E-06	1.85E-13	1.06E-11	3.86E-10	4.13E-14	4.25E-14	2.35E-17	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	3.30E-06	1.80E-13	1.01E-11	3.66E-10	3.89E-14	4.03E-14	2.21E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	2.56E-08	0.00E+00	4.83E-09	3.64E-05	0.00E+00	1.96E-07	1.13E-06	8.17E-15	8.46E-13	5.58E-11	1.07E-14	2.35E-15	1.61E-18	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	1.36E-06	1.04E-13	6.75E-12	2.77E-10	3.31E-14	8.48E-15	1.61E-18	-1.31E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	5.81E-07	3.11E-14	3.55E-12	2.57E-10	5.38E-14	2.65E-15	5.23E-19	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	1.18E-06	2.35E-14	2.95E-12	2.34E-10	5.38E-14	2.01E-15	3.98E-19	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	2.65E-06	2.20E-13	1.06E-11	3.27E-10	2.97E-14	4.76E-14	2.53E-17	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	3.41E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	7.34E-07	1.05E-14	1.03E-12	6.48E-11	1.19E-14	3.35E-15	2.59E-18	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	3.41E-08	0.00E+00	4.83E-09	8.81E-05	0.00E+00	1.96E-07	1.68E-06	8.79E-15	8.27E-13	5.11E-11	9.48E-15	5.12E-15	7.95E-18	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	5.11E-08	0.00E+00	4.83E-09	1.74E-04	0.00E+00	1.96E-07	8.78E-06	1.03E-15	1.30E-13	1.10E-11	2.85E-15	1.07E-15	3.20E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	3.41E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	7.03E-07	1.10E-14	1.71E-12	1.69E-10	4.85E-14	3.75E-15	2.97E-18	-1.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	2.39E-07	0.00E+00	4.83E-09	1.44E-04	0.00E+00	1.96E-07	5.23E-06	9.88E-16	8.29E-14	4.56E-12	7.50E-16	9.41E-16	2.38E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	1.53E-07	0.00E+00	4.83E-09	1.03E-04	0.00E+00	1.96E-07	3.44E-06	9.71E-16	1.05E-13	7.39E-12	1.54E-15	7.13E-16	1.33E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	2.84E-06	1.45E-13	9.02E-12	3.58E-10	4.16E-14	2.25E-14	8.37E-18	-1.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	4.63E-06	6.19E-13	2.11E-11	4.69E-10	3.09E-14	1.50E-13	9.32E-17	-1.24E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	1.70E-08	0.00E+00	2.41E-08	4.16E-05	0.00E+00	1.96E-07	2.77E-06	4.17E-14	4.06E-12	2.54E-10	4.66E-14	1.29E-14	9.78E-18	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.58E-06	4.08E-13	1.68E-11	4.44E-10	3.46E-14	2.81E-14	4.77E-18	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	1.70E-08	0.00E+00	1.45E-08	1.04E-05	0.00E+00	1.96E-07	1.56E-06	4.54E-13	1.79E-11	4.53E-10	3.39E-14	3.04E-14	5.05E-18	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	1.97E-06	5.02E-13	1.89E-11	4.59E-10	3.30E-14	9.75E-14	4.75E-17	-1.24E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	1.70E-08	0.00E+00	3.38E-08	2.08E-05	0.00E+00	1.96E-07	6.45E-06	1.14E-12	2.96E-11	5.04E-10	2.58E-14	1.09E-13	2.80E-17	-1.21E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	3.96E-06	3.48E-13	1.26E-11	2.97E-10	2.07E-14	4.42E-14	1.42E-17	-1.26E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	1.53E-07	0.00E+00	4.34E-08	3.48E-05	0.00E+00	3.93E-07	6.26E-06	2.16E-20	1.05E-16	3.29E-13	3.03E-15	5.57E-21	3.55E-24	-1.98E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	2.22E-07	0.00E+00	5.79E-08	5.68E-05	0.00E+00	3.93E-07	1.01E-05	7.65E-13	2.18E-11	4.17E-10	2.43E-14	1.98E-13	1.47E-16	-1.23E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	1.70E-08	0.00E+00	3.86E-08	1.64E-04	0.00E+00	1.96E-07	5.31E-06	4.25E-13	1.61E-11	4.02E-10	3.02E-14	3.95E-13	9.97E-16	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	3.41E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.41E-06	1.48E-14	2.15E-12	2.00E-10	5.38E-14	1.22E-15	2.38E-19	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	5.11E-08	0.00E+00	1.45E-08	9.63E-06	0.00E+00	1.96E-07	1.22E-06	1.97E-21	2.13E-17	1.46E-13	2.87E-15	1.60E-22	2.97E-26	-2.08E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	1.70E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	6.88E-07	1.25E-14	1.94E-12	1.90E-10	5.38E-14	8.53E-15	1.35E-17	-1.40E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	3.41E-08	0.00E+00	4.83E-09	7.29E-05	0.00E+00	1.96E-07	1.12E-06	9.24E-16	2.11E-13	3.06E-11	1.29E-14	5.55E-16	7.73E-19	-1.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	3.41E-08	0.00E+00	4.83E-09	5.20E-05	0.00E+00	1.96E-07	1.16E-06	9.26E-16	2.12E-13	3.08E-11	1.30E-14	3.99E-16	3.98E-19	-1.51E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	5.11E-08	0.00E+00	9.65E-09	2.08E-05	0.00E+00	1.96E-07	1.33E-06	5.73E-14	5.23E-12	3.03E-10	5.10E-14	9.54E-15	3.71E-18	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.49E-06	3.49E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.12E-06	4.12E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.16E-07	7.16E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.31E-06	3.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.81E-06	6.81E-06	0.00E+00	0.00E+00	7.76E-07	7.76E-07	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.49E-07	4.49E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-05	2.18E-05	0.00E+00	0.00E+00	9.31E-06	9.31E-06	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E-06	2.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-06	1.10E-06	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-08	1.05E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E-08	3.13E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-05	2.83E-05	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-07	4.80E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-05	1.82E-05	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-09	2.83E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	Fe(VO3)2	d_Fe(VO3)2	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	6.43E-09	6.43E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	3.34E-09	3.34E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	5.03E-09	5.03E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	8.91E-08	8.91E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	5.45E-09	5.45E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	5.77E-07	5.77E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	6.38E-09	6.38E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	5.06E-08	5.06E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	1.98E-09	1.98E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	3.03E-09	3.03E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	2.43E-06	2.43E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	7.22E-08	7.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	5.39E-08	5.39E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Al2O3	d_Al2O3	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	6.72E-05	6.72E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	5.96E-05	5.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	3.96E-05	3.96E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	6.52E-05	6.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	5.45E-05	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	3.00E-05	3.00E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	1.67E-05	1.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.93E-10	3.93E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	1.45E-05	1.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.63E-10	3.63E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	6.17E-06	6.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	1.99E-05	1.99E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	3.33E-05	3.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	7.33E-07	7.33E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	1.42E-04	1.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	5.74E-05	5.74E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	7.19E-05	7.19E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	4.12E-05	4.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	4.16E-05	4.16E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	7.25E-06	7.25E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	5.12E-05	5.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	2.94E-05	2.94E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	3.88E-05	3.88E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	5.07E-05	5.07E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	1.26E-05	1.26E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	1.21E-05	1.21E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	6.71E-06	6.71E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	7.67E-05	7.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	8.75E-05	8.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	6.89E-05	6.89E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	7.86E-05	7.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	1.07E-04	1.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	5.63E-05	5.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	1.12E-04	1.12E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	7.23E-05	7.23E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	3.93E-04	3.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	4.25E-04	4.25E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	1.07E-04	1.07E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	7.73E-05	7.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	8.93E-05	8.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	1.06E-05	1.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	4.95E-05	4.95E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-06	1.53E-06	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.75E-06	1.75E-06	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-06	2.83E-06	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.26E-06	4.26E-06	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.01E-06	2.01E-06	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.18E-08	8.18E-08	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E-07	4.08E-07	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.75E-06	2.75E-06	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-06	1.49E-06	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.81E-07	9.81E-07	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E-06	2.44E-06	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.69E-06	5.69E-06	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.57E-06	2.57E-06	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Celestite	Anglesite	d_Anglesite	Ba3(AsO4)2	d_Ba3(AsO4)2	Halite	d_Halite	Fluorite	d_Fluorite	Cu(OH)2	d_Cu(OH)2	Tenorite	d_Tenorite	Brochantite	d_Brochantite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	CoFe2O4	d_CoFe2O4	Hercynite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-08	1.09E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-08	1.05E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.54E-09	8.54E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E-08	3.13E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	6.50E-09	6.50E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	1.33E-08	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hercynite	Spinel	d_Spinel	Magnesioferrite	d_Magnesioferrite	Minium	d_Minium	Zn(OH)2	d_Zn(OH)2	Zn(OH)2(am)	d_Zn(OH)2 (am)	Zn(OH)2(beta)	d_Zn(OH)2 (beta)	Zn(OH)2(epsilon)	d_Zn(OH)2 (epsilon)	Zn(OH)2(gamma)	d_Zn(OH)2 (gamma)	Zincite	d_Zincite	ZnO(active)	d_ZnO(active)	Be(OH)2(beta)
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-06	2.51E-06	0.00E+00
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Be(OH)2 (beta)	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite
i_soln	101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1866	-8.3666	-16.5831	-17.1331	-9.5466	-37.7183	-12.3367	-21.9288	-54.5826	-3.1368	-11.6775	-3.8735	-4.0168	-6.508	-11.3778	-23.3274	-5.8368
i_soln	102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.1921	-7.3721	-14.0366	-14.5866	-7.9946	-32.0677	-10.7846	-19.0983	-47.096	1.6037	-2.1967	5.6073	0.7237	6.7132	-7.6373	-10.106	-1.0963
i_soln	103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.8867	-8.0667	-15.4248	-15.9748	-8.688	-34.8429	-11.4781	-20.1952	-50.2734	0.1958	-5.0123	2.7917	-0.6842	2.6897	-8.8452	-14.1295	-2.5042
i_soln	104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.2059	-7.3859	-14.0627	-14.6127	-8.0069	-32.1185	-10.7969	-19.1228	-47.1574	0.7169	-3.9702	3.8338	-0.1631	4.0529	-8.5241	-12.7663	-1.9831
react	1001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8321	-10.0121	-19.3166	-19.8666	-10.6344	-42.6274	-13.4245	-24.5834	-60.5007	-1.7673	-8.9386	-1.1346	-2.6473	-2.9562	-10.5648	-19.7755	-4.4673
react	1002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8726	-10.0526	-19.397	-19.947	-10.6744	-42.7878	-13.4644	-24.4871	-60.5244	-1.8184	-9.0408	-1.2368	-2.6984	-3.1668	-10.6731	-19.986	-4.5184
react	1003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.434	-9.614	-18.5205	-19.0705	-10.2365	-41.0354	-13.0265	-23.6103	-58.3337	-1.4808	-8.3656	-0.5616	-2.3608	-2.0727	-10.2543	-18.8919	-4.1808
react	1004	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6975	-9.8775	-19.0475	-19.5975	-10.5	-42.0895	-13.29	-24.138	-59.652	-1.3814	-8.1668	-0.3628	-2.2614	-2.0682	-10.4486	-18.8874	-4.0814
react	1005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8766	-10.0566	-19.4054	-19.9554	-10.6788	-42.805	-13.4688	-24.4958	-60.5462	-1.419	-8.2419	-0.4379	-2.299	-1.8255	-10.1308	-18.6448	-4.119
react	1006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4527	-9.6327	-18.5576	-19.1076	-10.2549	-41.1094	-13.0449	-23.8237	-58.6024	-1.4595	-8.3229	-0.5189	-2.3395	-1.9272	-10.1515	-18.7465	-4.1595
react	1007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0878	-0.2678	-0.6708	-1.2208	-1.733	-6.1789	-4.5231	-4.6118	-13.8249	-1.2	-7.804	0	-2.08	-5.2344	-13.9776	-22.0536	-3.9
react	1008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.5955	-1.1455	-1.7455	-6.1286	-4.5356	-4.7488	-13.9994	-1.2	-7.804	0	-2.08	-5.3086	-14.0518	-22.1278	-3.9
react	1009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-1.1499	-1.6999	-2.2999	-7.7918	-5.09	-6.073	-16.9868	-1.2	-7.804	0	-2.08	-5.0885	-13.8317	-21.9077	-3.9
react	1010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.1826	-0.3626	-0.8994	-1.4494	-1.8668	-6.675	-4.6568	-5.2848	-14.8992	-1.2	-7.804	0	-2.08	-2.3353	-11.0786	-19.1546	-3.9
react	1011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.3865	-1.5665	-1.8286	-2.3786	-1.592	-7.0546	-4.3821	-4.4028	-13.1929	-1.2	-7.804	0	-2.08	0	-8.7432	-16.8193	-3.9
react	1012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.543	-7.723	-15.5521	-16.1021	-9.1591	-35.9124	-11.9499	-21.1566	-52.6483	-4.1677	-13.7391	-5.9351	-5.0477	-9.4003	-12.2087	-26.2205	-6.8679
react	1013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.4662	-1.0162	-1.6162	-5.7405	-4.4069	-6.1801	-15.0429	-1.2001	-7.804	0	-2.0801	-2.7109	-11.4543	-19.5311	-3.9004
react	1014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.5778	-1.7578	-2.8104	-3.3604	-2.3826	-9.6177	-5.1727	-5.1139	-16.2759	-1.2	-7.804	0	-2.08	0	-8.7432	-16.8192	-3.9
react	1015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-1.0637	-1.6137	-2.2137	-7.533	-5.0037	-6.9179	-17.5729	-1.2	-7.804	0	-2.08	-3.1142	-11.8574	-19.9335	-3.9
react	1016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.1962	-6.3762	-12.0449	-12.5949	-6.9987	-28.0842	-9.7887	-17.3717	-42.3817	-1.9829	-9.3699	-1.5659	-2.8629	0	-7.1773	-16.8192	-4.6829
react	1017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.5432	-9.7232	-18.7386	-19.2886	-10.3455	-41.4716	-13.1355	-23.8286	-58.879	-1.3153	-8.0346	-0.2306	-2.1953	-1.692	-10.2047	-18.5112	-4.0153
react	1018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.3746	-9.5546	-18.4015	-18.9515	-10.1769	-40.7973	-12.9669	-23.6676	-58.2123	-1.3414	-8.0868	-0.2828	-2.2214	-1.7192	-10.1796	-18.5384	-4.0414
react	1019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.3351	-9.5151	-18.3224	-18.8724	-10.1373	-40.6391	-12.9273	-23.1097	-57.5357	-1.9005	-9.205	-1.401	-2.7805	-3.1174	-10.4597	-19.9367	-4.6005
react	1020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4434	-9.6234	-18.5395	-19.0895	-10.2461	-41.0736	-13.0361	-23.6296	-58.3818	-1.4115	-8.2269	-0.4229	-2.2915	-2.2488	-10.5691	-19.068	-4.1115
react	1021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.9549	-9.1349	-17.5625	-18.1125	-9.7576	-39.1196	-12.5476	-22.6509	-55.9375	-1.2	-7.804	0	-2.08	-1.0829	-9.8261	-17.9021	-3.9
react	1022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.8742	-9.0542	-17.4011	-17.9511	-9.6769	-38.7969	-12.4669	-22.4891	-55.5338	-1.2	-7.804	0	-2.08	-1.0291	-9.7723	-17.8483	-3.9
react	1023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6858	-9.8658	-19.0239	-19.5739	-10.4881	-42.0422	-13.2782	-24.1142	-59.5926	-1.4581	-8.3203	-0.5163	-2.3381	-2.1599	-10.3868	-18.9791	-4.1581
react	1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.3758	-9.5558	-18.4037	-18.9537	-10.1779	-40.8015	-12.9679	-23.191	-57.7388	-1.8552	-9.1145	-1.3105	-2.7352	-3.1695	-10.6022	-19.9888	-4.5553
react	1025	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.3825	-9.5625	-18.4166	-18.9666	-10.1841	-40.8267	-12.9741	-23.2033	-57.7695	-1.9543	-9.3126	-1.5086	-2.8343	-3.451	-10.6856	-20.2702	-4.6543
react	1026	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.1081	-9.2881	-17.5659	-18.1159	-9.6078	-38.8235	-12.3979	-22.0493	-54.8866	-2.4757	-10.3554	-2.5514	-3.3557	-4.725	-10.9168	-21.5443	-5.1757
react	1027	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6874	-8.8674	-17.0269	-17.5769	-9.4895	-38.0479	-12.2795	-22.1133	-54.5958	-1.2457	-7.8954	-0.0914	-2.1257	-1.408	-10.0599	-18.2273	-3.9457
react	1028	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4884	-9.6684	-18.1505	-18.7005	-9.8121	-39.8166	-12.6021	-22.4597	-55.9099	-3.056	-11.516	-3.712	-3.936	-6.2658	-11.2971	-23.085	-5.756
react	1029	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.2779	-9.4579	-17.9061	-18.4561	-9.7782	-39.5044	-12.5682	-22.391	-55.7395	-2.7437	-10.8914	-3.0874	-3.6237	-5.429	-11.0848	-22.2483	-5.4437
react	1030	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.295	-9.475	-18.2424	-18.7924	-10.0974	-40.4792	-12.8874	-23.5084	-57.8147	-1.3123	-8.0285	-0.2245	-2.1923	-1.449	-9.9677	-18.2682	-4.0123
react	1031	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.7934	-9.9734	-19.2391	-19.7891	-10.5957	-42.4724	-13.3857	-24.5059	-60.3069	-1.441	-8.286	-0.482	-2.321	-2.0896	-10.3508	-18.9088	-4.141
react	1032	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.9014	-9.0814	-17.4549	-18.0049	-9.7035	-38.904	-12.4936	-22.7194	-55.844	-1.2629	-7.9297	-0.1257	-2.1429	-0.7378	-9.3553	-17.5571	-3.9629
react	1033	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8191	-9.9991	-19.2909	-19.8409	-10.6218	-42.5764	-13.4118	-24.3818	-60.2611	-1.3924	-8.1887	-0.3847	-2.2724	-1.9926	-10.3511	-18.8118	-4.0924
react	1034	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6795	-9.8595	-19.0117	-19.5617	-10.4822	-42.0181	-13.2722	-24.2787	-59.7393	-1.4014	-8.2069	-0.4029	-2.2814	-1.8273	-10.1676	-18.6465	-4.1014
react	1035	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8919	-10.0719	-19.4363	-19.9863	-10.6943	-42.8669	-13.4844	-24.527	-60.624	-1.4128	-8.2296	-0.4256	-2.2928	-1.8781	-10.1957	-18.6974	-4.1128
react	1036	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-10.1915	-10.3715	-20.0356	-20.5856	-10.9941	-44.0657	-13.7841	-25.1269	-62.1231	-1.5187	-8.4414	-0.6374	-2.3987	-2.3293	-10.4351	-19.1486	-4.2187
react	1037	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.9191	-10.0991	-19.4907	-20.0407	-10.7216	-42.9759	-13.5116	-24.5816	-60.7604	-1.615	-8.634	-0.83	-2.495	-2.6081	-10.5213	-19.4273	-4.315
react	1038	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.7421	-4.9221	-9.614	-10.164	-6.0218	-23.6997	-8.8119	-15.6379	-37.7174	-2.4495	-10.303	-2.499	-3.3295	0	-6.2442	-16.8192	-5.1495
react	1039	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.2137	-9.3937	-18.5568	-19.1068	-10.4931	-41.5849	-13.2831	-24.5227	-60.0159	-1.5455	-8.495	-0.691	-2.4255	-1.8291	-9.8813	-18.6483	-4.2455
react	1040	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.5668	-9.7468	-18.7844	-19.3344	-10.3676	-41.5615	-13.1576	-24.1745	-59.2912	-1.4503	-8.3046	-0.5006	-2.3303	-1.8625	-10.1051	-18.6817	-4.1503
react	1041	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.4377	-8.6177	-16.528	-17.078	-9.2403	-37.0507	-12.0303	-21.9163	-53.6513	-1.2	-7.804	0	-2.08	-0.4482	-9.1914	-17.2674	-3.9
react	1042	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.9686	-5.1486	-9.59	-10.14	-5.7714	-23.1747	-8.5614	-14.7166	-36.0447	-2.473	-10.35	-2.546	-3.353	0	-6.1972	-16.8192	-5.173
react	1043	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.6982	-8.8782	-17.0478	-17.5978	-9.4996	-38.089	-12.2896	-22.1336	-54.6465	-1.2	-7.804	0	-2.08	-1.116	-9.8592	-17.9352	-3.9
react	1044	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.3596	-8.5396	-16.3709	-16.9209	-9.1613	-36.7356	-11.9513	-21.4545	-52.9525	-1.8212	-9.0464	-1.2424	-2.7012	-2.9614	-10.4622	-19.7806	-4.5212
react	1045	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.357	-8.537	-16.3661	-16.9161	-9.1591	-36.7263	-11.9491	-21.4501	-52.9414	-1.8185	-9.0409	-1.2369	-2.6985	-2.9532	-10.4595	-19.7724	-4.5185
react	1046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.9702	-9.1502	-17.593	-18.143	-9.7727	-39.1804	-12.5627	-22.858	-56.1902	-1.2232	-7.8503	-0.0463	-2.1032	-1.1921	-9.889	-18.0113	-3.9232

state	soln	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Al2O3	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite
i_soln	101	-1.8488	-13.7394	-18.4772	-17.8884	-15.9091	-2.203	-1.7003	-8.4617	-4.4105	-1.9015	-2.1884	-0.4834	-6.8732	-22.7348	-14.8948	-37.8944	-12.9488	-29.1651	-8.8594	-1.692	-1.9419	-4.5157
i_soln	102	2.5928	-5.9976	-12.0219	-11.6206	-8.7284	4.294	-1.0708	5.7055	0.1021	2.6111	2.3241	4.0291	2.1519	-20.0792	-13.2392	-33.9277	-12.2932	-25.854	-7.9301	-4.8541	-5.1041	-7.1202
i_soln	103	1.1973	-8.0051	-13.9864	-13.4169	-10.8927	3.6482	-0.843	3.2285	-0.7995	1.7095	1.4225	3.1275	0.3486	-21.1834	-14.1434	-36.4403	-12.9974	-27.6624	-8.9243	-4.1293	-4.3793	-6.3942
i_soln	104	1.7113	-6.8843	-13.0564	-12.02	-9.7646	4.3266	-0.7884	4.3965	-0.4284	2.0806	1.7936	3.4986	1.0909	-20.3929	-13.5529	-34.8686	-12.6069	-26.4812	-8.2438	-4.0549	-4.3049	-6.3195
react	1001	-0.3214	-10.7369	-15.9473	-16.8416	-13.7733	-2.7254	-2.0062	-7.3172	-3.927	-1.418	-1.705	0	-5.9064	-23.8121	-16.5286	-43.3523	-15.1391	-32.4327	-10.5706	-4.6059	-4.8559	-6.8717
react	1002	-0.4138	-10.6101	-15.8152	-16.4651	-13.8739	-2.6727	-1.8635	-7.1745	-3.927	-1.418	-1.705	0	-5.9064	-23.8621	-16.6358	-43.7312	-15.3035	-32.6471	-10.9113	-4.3273	-4.5773	-6.5927
react	1003	-0.1872	-10.4935	-16.6187	-17.3547	-14.4624	-4.2741	-2.7717	-8.0827	-3.927	-1.418	-1.705	0	-5.9064	-22.3542	-15.0467	-38.8827	-13.6333	-29.4689	-9.2419	-4.7961	-5.046	-7.0621
react	1004	-0.0288	-9.5387	-15.85	-16.7172	-13.8249	-3.9347	-2.5364	-7.8474	-3.927	-1.418	-1.705	0	-5.9064	-22.0314	-15.0175	-39.0887	-13.8977	-29.4105	-9.5057	-4.8249	-5.0749	-7.0909
react	1005	0	-10.6304	-14.9124	-15.7406	-12.6723	-2.6694	-2.0112	-7.3223	-3.927	-1.418	-1.705	0	-5.9064	-23.6752	-16.3061	-42.5992	-14.831	-31.9877	-10.4387	-4.4792	-4.7292	-6.7448
react	1006	-0.0973	-10.7197	-15.629	-16.2378	-13.2664	-3.142	-2.3088	-7.6198	-3.927	-1.418	-1.705	0	-5.9064	-23.4662	-16.0772	-41.8926	-14.5822	-31.5299	-10.0143	-4.5284	-4.7784	-6.7941
react	1007	-1.5424	-15.8341	-36.8044	-32.2857	-29.3932	-20.0472	-13.2857	-18.5967	-3.927	-1.418	-1.705	0	-5.9064	-4.0545	-0.7511	0	-3.3417	-0.8778	-0.942	-3.9722	-4.2222	-7.081
react	1008	-1.5249	-15.6909	-36.222	-31.9408	-28.8722	-19.5262	-12.9945	-18.3055	-3.927	-1.418	-1.705	0	-5.9064	-3.9556	-0.7264	0	-3.3912	-0.8283	-0.8795	-3.7052	-3.9552	-6.9143
react	1009	-1.4987	-14.3116	-32.2302	-28.1356	-25.2437	-15.8976	-10.9986	-16.3096	-3.927	-1.418	-1.705	0	-5.9064	-6.2765	-2.8272	-6.0822	-5.2719	-5.0298	-2.5448	-1.9247	-2.1747	-5.6882
react	1010	-1.3582	-11.1636	-31.7223	-27.7506	-24.8586	-15.5126	-10.7446	-16.0557	-3.927	-1.418	-1.705	0	-5.9064	-11.7289	-5.5265	-11.4269	-5.218	-10.4284	-2.4129	-1.9314	-2.1814	-5.0792
react	1011	-1.3612	-13.8956	-30.9185	-26.5681	-24.1536	-14.8075	-10.3427	-15.6538	-3.927	-1.418	-1.705	0	-5.9064	-16.3228	-7.785	-15.8672	-5.1412	-14.9455	-2.6686	-2.4008	-2.6508	-4.07
react	1012	-2.5388	-15.3744	-19.5965	-19.776	-17.1089	-2.6793	-1.503	-10.6341	-5.2004	-2.6914	-2.9781	-1.2731	-8.4524	-23.64	-15.6	-39.8095	-13.454	-30.5753	-9.3625	-0.0637	-0.3132	-3.1446
react	1013	-0.7416	-8.8904	-25.5787	-22.255	-19.8432	-10.4968	-7.6723	-12.984	-3.9272	-1.4182	-1.705	0	-5.9062	-13.8017	-7.9749	-19.1475	-8.0422	-15.3251	-3.8411	-0.0726	-0.3221	-3.1535
react	1014	-1.6089	-13.9183	-37.0039	-32.4176	-29.2243	-19.8783	-13.3855	-18.6965	-3.927	-1.418	-1.705	0	-5.9064	-14.5755	-6.0377	-10.6252	-3.3939	-11.4508	-1.7912	-4.7649	-5.0149	-7.0333
react	1015	-1.1703	-10.7842	-31.7181	-28.2795	-25.2111	-15.865	-10.7425	-16.0536	-3.927	-1.418	-1.705	0	-5.9064	-11.1524	-5.7288	-12.8128	-6.1992	-10.8331	-2.4546	-2.6861	-2.9361	-6.3634
react	1016	-1.1953	-21.7232	-23.7206	-22.9569	-20.0647	-8.3699	-5.5694	-10.8804	-3.927	-1.418	-1.705	0	-5.9064	-27.0425	-16.1559	-38.6312	-11.1634	-31.6874	-6.535	-4.5929	-4.8429	-6.8589
react	1017	0	-9.9873	-15.577	-16.3667	-13.4744	-3.7826	-2.4991	-7.8101	-3.927	-1.418	-1.705	0	-5.9064	-23.1614	-15.9697	-41.7676	-14.6721	-31.315	-10.2805	-4.6329	-4.8828	-6.8987
react	1018	0	-10.1653	-15.6551	-16.2259	-13.5555	-3.7853	-2.499	-7.81	-3.927	-1.418	-1.705	0	-5.9064	-23.5725	-16.3298	-42.7965	-14.981	-32.035	-10.4132	-4.6403	-4.8903	-6.9061
react	1019	-0.6815	-11.5489	-18.1664	-18.5253	-15.8092	-4.3617	-2.916	-8.227	-3.927	-1.418	-1.705	0	-5.9064	-22.5326	-15.0107	-38.5604	-13.3829	-29.397	-9.2939	-4.5391	-4.7891	-6.8049
react	1020	-0.1301	-9.2865	-16.9787	-17.8968	-14.8284	-4.848	-3.0557	-8.3667	-3.927	-1.418	-1.705	0	-5.9064	-22.8259	-15.9025	-41.8341	-14.8731	-31.1805	-10.4817	-5.0895	-5.3395	-7.3557
react	1021	-0.0095	-10.6477	-17.2877	-17.9613	-14.8929	-5.5469	-3.5274	-8.8384	-3.927	-1.418	-1.705	0	-5.9064	-23.3986	-15.9437	-41.4261	-14.3828	-31.2629	-9.993	-5.071	-5.321	-7.3372
react	1022	-0.024	-10.8083	-17.4467	-18.0798	-15.0115	-5.6655	-3.6068	-8.9179	-3.927	-1.418	-1.705	0	-5.9064	-22.823	-15.3143	-39.4843	-13.6996	-30.0042	-9.3103	-5.0695	-5.3195	-7.3356
react	1023	-0.09	-10.0208	-15.7637	-16.4019	-13.7315	-3.6111	-2.3781	-7.6892	-3.927	-1.418	-1.705	0	-5.9064	-23.5272	-16.3748	-43.0222	-15.1165	-32.1252	-10.7246	-4.6549	-4.9048	-6.9208
react	1024	-0.6005	-10.9419	-17.8521	-18.0382	-15.514	-4.2023	-2.8267	-8.1377	-3.927	-1.418	-1.705	0	-5.9064	-22.8	-15.466	-40.1141	-14.026	-30.3076	-9.9369	-4.4906	-4.7406	-6.7563
react	1025	-0.598	-11.0881	-17.5773	-17.253	-15.2358	-3.6269	-2.5407	-7.8517	-3.927	-1.418	-1.705	0	-5.9064	-23.3168	-15.967	-41.6013	-14.5113	-31.3095	-10.4222	-4.2113	-4.4612	-6.4764
react	1026	-1.1244	-12.4769	-19.1675	-18.5198	-16.682	-10.1503	-4.7675	-16.7199	-6.1408	-3.6318	-3.9188	-2.2138	-10.3339	-23.1448	-15.5049	-39.9247	-13.759	-30.3852	-9.6714	-3.9485	-4.1984	-5.9117
react	1027	-0.1218	-10.1287	-16.7611	-17.1227	-14.2304	-4.7474	-3.1955	-8.5065	-3.927	-1.418	-1.705	0	-5.9064	-22.7529	-15.4861	-40.2414	-14.1132	-30.3476	-9.7249	-4.4702	-4.7202	-6.7359
react	1028	-1.7283	-13.6579	-20.2528	-20.1863	-17.9631	-3.2349	-2.2878	-7.7847	-3.9889	-1.4799	-1.7669	-0.0619	-6.0303	-23.6241	-15.7842	-40.5625	-13.8382	-30.9438	-9.7487	-4.0028	-4.2528	-5.79
react	1029	-1.4771	-13.0453	-19.9771	-19.913	-17.5851	-4.9353	-2.9989	-9.6374	-4.3695	-1.8605	-2.1475	-0.4425	-6.7913	-23.3886	-15.6486	-40.2559	-13.8027	-30.6727	-9.714	-4.122	-4.372	-6.0858
react	1030	0	-10.6776	-16.0558	-16.8097	-13.9175	-4.2347	-2.743	-8.054	-3.927	-1.418	-1.705	0	-5.9064	-23.2561	-15.8305	-41.116	-14.299	-31.0366	-9.7314	-4.8045	-5.0545	-7.0705
react	1031	0	-10.0805	-15.0277	-15.9025	-12.8342	-2.7652	-2.0358	-7.3469	-3.927	-1.418	-1.705	0	-5.9064	-23.2477	-16.0765	-42.1083	-14.7993	-31.5285	-10.2308	-4.5968	-4.8467	-6.8626
react	1032	0	-12.31	-16.0908	-16.4237	-13.7533	-4.2187	-2.8346	-8.1456	-3.927	-1.418	-1.705	0	-5.9064	-24.5893	-16.6007	-42.8635	-14.5061	-32.5769	-9.9399	-4.5013	-4.7512	-6.767
react	1033	0	-9.8758	-16.2893	-17.2168	-14.3246	-4.4015	-2.7396	-8.0506	-3.927	-1.418	-1.705	0	-5.9064	-23.2999	-16.1776	-42.4607	-14.9494	-31.7308	-10.5572	-5.1499	-5.3999	-7.4161
react	1034	0	-10.4518	-16.2652	-17.3867	-14.3183	-4.368	-2.7139	-8.0249	-3.927	-1.418	-1.705	0	-5.9064	-23.7217	-16.4069	-42.9559	-14.9861	-32.1893	-10.4178	-5.1608	-5.4108	-7.427
react	1035	0	-10.4162	-15.2993	-16.2615	-13.3693	-3.3849	-2.2139	-7.525	-3.927	-1.418	-1.705	0	-5.9064	-24.0256	-16.7275	-43.9345	-15.3234	-32.8305	-10.9312	-4.6972	-4.9472	-6.9631
react	1036	0	-10.1686	-15.6018	-16.5858	-13.3413	-3.0393	-2.2064	-7.5174	-3.927	-1.418	-1.705	0	-5.9064	-23.7593	-16.5947	-43.6695	-15.3242	-32.5649	-10.9315	-4.9895	-5.2395	-7.2557
react	1037	-0.18	-10.2598	-16.2164	-16.9702	-13.9988	-3.4079	-2.3692	-7.6802	-3.927	-1.418	-1.705	0	-5.9064	-23.8063	-16.6316	-43.7702	-15.351	-32.6388	-10.9586	-4.8796	-5.1296	-7.1457
react	1038	-1.69	-25.7868	-26.6059	-25.1592	-22.2669	-9.1724	-6.3122	-11.6232	-3.927	-1.418	-1.705	0	-5.9064	-28.1721	-15.8858	-36.4211	-9.4935	-31.1471	-4.6454	-4.1015	-4.3515	-6.8447
react	1039	0	-11.276	-14.9974	-15.5735	-12.6813	-2.2987	-1.8639	-7.1749	-3.927	-1.418	-1.705	0	-5.9064	-23.6888	-15.9435	-41.1353	-14.0923	-31.2626	-9.3018	-4.0671	-4.3171	-6.81
react	1040	0	-10.8297	-14.0811	-14.3866	-11.8302	-1.7334	-1.5486	-6.8596	-3.927	-1.418	-1.705	0	-5.9064	-23.9564	-16.5303	-43.2146	-14.9981	-32.436	-10.3048	-4.0076	-4.2576	-6.272
react	1041	-0.0134	-12.5496	-17.7412	-18.1288	-15.2366	-5.8906	-3.7541	-9.0651	-3.927	-1.418	-1.705	0	-5.9064	-22.8946	-14.805	-37.3754	-12.6094	-28.9855	-7.9198	-5.0804	-5.3304	-7.3466
react	1042	-1.8981	-26.6238	-29.0514	-27.5752	-24.6829	-11.518	-7.4997	-12.8107	-3.927	-1.418	-1.705	0	-5.9064	-27.8068	-15.45	-35.0433	-8.9873	-30.2756	-4.5595	-5.0951	-5.3451	-7.3614
react	1043	-0.1531	-10.5475	-16.0086	-16.55	-13.4817	-4.1357	-2.8878	-8.1988	-3.927	-1.418	-1.705	0	-5.9064	-22.4709	-15.0491	-38.7754	-13.5212	-29.4737	-9.1329	-4.1733	-4.4233	-6.4383
react	1044	-0.8007	-11.2224	-18.6633	-18.8585	-15.9663	-6.9535	-4.0156	-11.5234	-4.6593	-2.1503	-2.4373	-0.7323	-7.3709	-21.9233	-14.4833	-37.06	-12.9373	-28.3422	-8.5515	-4.2278	-4.4778	-6.4931
react	1045	-0.7707	-11.2196	-18.9455	-19.1405	-16.2482	-7.9081	-4.3823	-12.5546	-4.8807	-2.3717	-2.6587	-0.9537	-7.8139	-22.7662	-15.3262	-39.5886	-13.7802	-30.0279	-9.3944	-4.3705	-4.6204	-6.636
react	1046	0	-10.5531	-16.3888	-17.1574	-14.0891	-4.6736	-3.0431	-8.3542	-3.927	-1.418	-1.705	0	-5.9064	-22.131	-14.7158	-37.7823	-13.1947	-28.8071	-8.6281	-4.779	-5.029	-7.045

state	soln	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite
i_soln	101	-7.2287	-6.9249	-35.5169	-7.4596	-7.3547	-13.0252	-11.6578	-12.2398	-8.3325	-9.2583	-8.6747	-8.7773	-15.6834	-25.4204	-10.579	-12.994	-10.6075	-999.999	-999.999	1.485	-999.999	-3.7526
i_soln	102	-11.4864	-7.0673	-37.6853	-10.5903	-10.4854	-15.4367	-14.8853	-14.3765	-9.7575	-5.2442	-6.6547	-5.7893	-10.4938	-17.4992	-8.1396	-11.9681	-8.8623	-999.999	-999.999	-0.7016	-999.999	-4.9213
i_soln	103	-10.0206	-7.1456	-37.1123	-9.8645	-9.7596	-14.7108	-14.46	-14.1493	-9.3283	-6.742	-7.847	-6.9645	-12.1845	-20.1802	-8.8283	-12.6619	-9.5558	-999.999	-999.999	-0.1762	-999.999	-4.677
i_soln	104	-9.4034	-7.1412	-37.0199	-9.7901	-9.6852	-14.6371	-14.386	-14.0671	-9.2589	-6.1311	-7.1583	-6.2882	-11.1227	-18.4426	-8.1538	-11.981	-8.8756	-999.999	-999.999	-0.1355	-999.999	-4.6072
react	1001	-10.9839	-6.9011	-35.1458	-10.3419	-10.237	-15.189	-14.6374	-13.9355	-9.7805	-7.9663	-9.102	-8.4305	-16.5219	-26.4386	-10.7845	-14.6082	-11.5029	-999.999	-999.999	-0.3617	-999.999	-4.6742
react	1002	-10.3524	-6.8667	-34.8199	-10.063	-9.9581	-14.9098	-14.6591	-13.7278	-9.5016	-8.2509	-9.2134	-8.472	-16.426	-26.3828	-10.8214	-14.6482	-11.5427	-999.999	-999.999	-0.0643	-999.999	-4.3967
react	1003	-11.4327	-7.356	-36.8693	-10.532	-10.4271	-15.3778	-13.897	-14.3668	-8.9316	-7.8329	-8.9451	-8.505	-13.4704	-21.9499	-10.3769	-14.2099	-11.1033	-999.999	-999.999	-0.7498	-999.999	-5.3371
react	1004	-11.4597	-7.315	-35.9647	-10.5609	-10.456	-15.4069	-13.9262	-14.4948	-9.697	-8.0266	-9.3077	-8.7693	-15.4712	-24.9508	-10.6428	-14.4735	-11.3672	-999.999	-999.999	-0.7814	-999.999	-5.3666
react	1005	-10.8568	-6.4721	-34.4643	-10.2151	-10.1102	-15.0621	-14.3343	-13.817	-9.6552	-7.7086	-9.1548	-8.4755	-16.4375	-26.4002	-10.8278	-14.6525	-11.5472	-999.999	-999.999	-0.2753	-999.999	-4.548
react	1006	-10.7156	-6.7903	-35.4379	-10.2643	-10.1594	-15.1107	-14.3831	-13.991	-9.7059	-7.5536	-8.8557	-7.925	-15.7684	-25.3086	-10.4007	-14.2285	-11.1227	-999.999	-999.999	-0.3381	-999.999	-4.4707
react	1007	-11.4373	-21.5933	-67.8497	-10.8917	-10.7868	-15.7411	-14.1195	-16.1491	-13.1047	-13.5479	-2.205	-2.0996	-2.7803	-6.9106	-2.0467	-6.0473	-2.9443	-999.999	-999.999	-0.6355	-999.999	-7.454
react	1008	-11.621	-21.3763	-66.9762	-10.6962	-10.5913	-15.533	-13.8778	-15.9992	-12.8135	-13.5101	-2.2344	-2.0565	-2.6683	-6.6867	-2.0489	-6.031	-2.9154	-999.999	-999.999	-0.4665	-999.999	-7.2316
react	1009	-9.9986	-19.1604	-60.9885	-9.2705	-9.1657	-14.1144	-13.7625	-14.2998	-10.8177	-13.0746	-2.3154	-2.0889	-2.4529	-6.2559	-2.4946	-6.3858	-3.2773	-999.999	-999.999	0	-999.999	-5.4836
react	1010	-9.9903	-16.1533	-60.2266	-9.2326	-9.1277	-14.0788	-13.4547	-14.1873	-10.5637	-10.2434	-2.3789	-2.1086	-2.3749	-6.0997	-2.6535	-6.5237	-3.4176	-999.999	-999.999	0	-999.999	-5.3274
react	1011	-8.8312	-13.4161	-59.0208	-8.5359	-8.4311	-13.8742	-12.976	-13.5333	-12.2547	-8.2406	-2.4593	-2.425	-6.8933	-13.0436	-3.1882	-6.5615	-3.9475	-999.999	-999.999	0	-999.999	-4.9092
react	1012	-7.7812	-6.7701	-34.6174	-7.1766	-7.072	-12.6352	-11.1758	-11.6793	-7.7898	-10.0871	-9.0994	-9.554	-16.5682	-26.7465	-11.0376	-13.6949	-11.2026	-999.999	-999.999	0	-999.999	-3.5441
react	1013	-8.2171	-13.4581	-51.0096	-8.0832	-7.9785	-13.4748	-13.2063	-12.3393	-8.848	-9.2233	-2.2075	-2.2691	-3.6904	-7.3751	-3.7616	-7.0496	-4.4903	-999.999	-999.999	0	-999.999	-3.8112
react	1014	-11.4019	-16.4587	-68.1491	-10.4894	-10.3845	-15.7138	-14.2714	-16.2298	-14.2607	-9.1106	-2.983	-2.8914	-5.6899	-11.6735	-2.6221	-6.3423	-3.6143	-999.999	-999.999	-0.5825	-999.999	-7.5484
react	1015	-11.0545	-16.93	-60.2203	-9.9366	-9.8318	-14.7481	-14.4338	-14.4247	-10.9408	-10.0828	-1.6789	-1.8404	-2.1937	-5.3583	-2.4101	-6.2904	-3.1496	-999.999	-999.999	0	-999.999	-5.9965
react	1016	-11.2312	-7.0767	-46.2667	-10.3288	-10.2239	-15.1742	-14.2248	-14.3081	-12.9504	-4.519	-5.8517	-4.9706	-15.6758	-25.1395	-7.134	-10.9721	-7.8651	-999.999	-999.999	-0.4834	-999.999	-4.8373
react	1017	-11.2675	-7.0338	-35.7204	-10.3687	-10.2638	-15.2147	-14.6633	-14.1113	-9.8078	-7.783	-8.9619	-8.3141	-15.7678	-25.3958	-10.4867	-14.3189	-11.2126	-999.999	-999.999	-0.4337	-999.999	-4.8738
react	1018	-10.8296	-7.0086	-35.7723	-10.3762	-10.2713	-15.2224	-14.972	-14.0585	-9.8162	-7.5819	-8.7331	-7.9706	-15.6086	-25.069	-10.3213	-14.1505	-11.0444	-999.999	-999.999	-0.3588	-999.999	-4.7063
react	1019	-10.8228	-7.7057	-38.1416	-10.0987	-9.9938	-15.1205	-13.791	-14.4224	-9.7254	-8.3406	-9.1587	-8.407	-15.0717	-24.5031	-10.2765	-13.9347	-11.0041	-999.999	-999.999	-0.18	-999.999	-5.081
react	1020	-12.0808	-7.9548	-37.5826	-10.8255	-10.7206	-15.6711	-15.4209	-14.8928	-10.2626	-8.1477	-9.187	-8.5131	-15.5644	-25.0909	-10.3849	-14.2194	-11.1126	-999.999	-999.999	-1.3042	-999.999	-5.6291
react	1021	-12.0635	-7.6835	-38.5748	-10.8069	-10.702	-15.6524	-15.4022	-15.2438	-10.2558	-7.4063	-9.068	-8.0241	-14.6091	-23.6588	-9.8948	-13.7308	-10.6239	-999.999	-999.999	-1.4792	-999.999	-5.6102
react	1022	-12.0621	-7.7092	-38.8132	-10.8054	-10.7005	-15.6508	-14.7986	-14.9356	-10.2575	-7.3529	-8.6806	-7.9433	-14.454	-23.4263	-9.8139	-13.6501	-10.5432	-999.999	-999.999	-1.2041	-999.999	-5.6086
react	1023	-10.8436	-7.095	-35.6434	-10.3908	-10.2859	-15.2372	-14.9867	-14.1695	-9.5282	-7.9648	-9.1408	-8.2821	-15.4501	-24.9192	-10.6334	-14.4617	-11.3557	-999.999	-999.999	-0.4144	-999.999	-4.7212
react	1024	-10.3881	-7.7589	-37.7832	-9.9253	-9.8204	-15.0724	-14.3448	-14.562	-9.6719	-8.4831	-9.3874	-8.4493	-15.1432	-24.6102	-10.3205	-13.8505	-11.0452	-999.999	-999.999	-0.3118	-999.999	-5.0341
react	1025	-9.0812	-7.5563	-37.1233	-9.6462	-9.5413	-14.7952	-14.544	-13.9229	-9.3988	-8.5665	-9.0344	-8.4662	-15.169	-24.6489	-10.3457	-13.8573	-11.054	-999.999	-999.999	0	-999.999	-4.7649
react	1026	-8.4476	-7.8006	-38.2051	-9.207	-9.1021	-14.5338	-13.8047	-12.9426	-9.1721	-8.7992	-8.0426	-8.2012	-14.691	-23.9327	-10.0816	-13.4066	-10.7811	-999.999	-999.999	0	-999.999	-4.5115
react	1027	-11.1077	-7.5854	-37.6707	-9.9047	-9.7998	-15.0512	-14.8009	-14.5599	-9.6527	-7.6415	-8.7173	-7.7586	-14.0681	-22.8479	-9.6251	-13.1618	-10.356	-999.999	-999.999	-0.8393	-999.999	-5.0114
react	1028	-9.282	-7.853	-38.3823	-8.5918	-8.4869	-13.6826	-13.5562	-13.2213	-9.209	-9.1776	-8.6472	-8.5723	-15.4185	-25.0231	-10.4416	-13.1174	-10.2558	-999.999	-999.999	0	-999.999	-4.5566
react	1029	-9.6174	-7.9713	-38.7495	-8.9031	-8.7982	-14.0052	-13.8512	-13.5223	-9.3249	-8.9661	-8.6185	-8.3575	-14.9901	-24.3808	-10.2263	-13.0989	-10.2487	-999.999	-999.999	0	-999.999	-4.6716
react	1030	-11.4399	-7.0408	-36.4463	-10.5405	-10.4356	-15.3865	-14.5341	-14.2877	-9.9834	-7.3701	-8.7184	-7.8894	-15.4551	-24.8389	-10.2394	-14.0709	-10.9645	-999.999	-999.999	-0.761	-999.999	-4.869
react	1031	-10.9747	-6.7167	-34.5822	-10.3328	-10.2279	-15.1799	-14.3272	-13.8682	-9.7706	-7.7523	-9.0051	-8.267	-16.4429	-26.3202	-10.746	-14.5694	-11.4642	-999.999	-999.999	-0.3441	-999.999	-4.5403
react	1032	-10.6895	-6.5199	-36.6222	-10.237	-10.1322	-15.0833	-14.8328	-13.9962	-9.7187	-6.759	-8.3367	-7.2763	-14.7439	-23.7726	-9.8471	-13.6771	-10.5711	-999.999	-999.999	-0.3013	-999.999	-4.3461
react	1033	-11.7838	-7.4207	-36.5962	-10.8861	-10.7812	-15.7324	-15.1811	-14.8899	-10.0225	-7.9289	-9.4994	-8.5901	-15.7157	-25.3174	-10.7674	-14.5953	-11.4893	-999.999	-999.999	-1.2171	-999.999	-5.3909
react	1034	-12.146	-7.2116	-36.5373	-10.897	-10.7921	-15.7435	-15.1921	-14.905	-10.035	-7.5693	-9.3641	-8.2746	-15.6158	-25.0795	-10.6284	-14.4557	-11.3498	-999.999	-999.999	-1.2531	-999.999	-5.2259
react	1035	-11.3275	-6.7397	-35.0601	-10.4332	-10.3283	-15.28	-15.0295	-14.3394	-9.5711	-7.7734	-9.4745	-8.6649	-15.864	-25.5399	-10.8417	-14.6679	-11.5623	-999.999	-999.999	-0.7108	-999.999	-4.9401
react	1036	-11.3634	-6.9716	-35.2491	-10.7261	-10.6212	-15.5743	-15.0226	-14.1174	-9.6862	-8.0125	-9.2597	-8.424	-16.109	-25.9072	-11.1535	-14.968	-11.8639	-999.999	-999.999	-0.6283	-999.999	-4.6921
react	1037	-11.0661	-7.2206	-35.9302	-10.6158	-10.5109	-15.4627	-15.2122	-14.2192	-10.0537	-8.099	-9.199	-8.5164	-16.5187	-26.5218	-10.872	-14.6953	-11.5898	-999.999	-999.999	-0.615	-999.999	-4.9469
react	1038	-10.6078	-6.8864	-49.4283	-9.3613	-9.2564	-14.6845	-13.2978	-13.8088	-15.6853	-3.3661	-4.3898	-4.8719	-19.44	-30.676	-7.7903	-9.0419	-6.4127	-999.999	-999.999	0	-999.999	-5.7012
react	1039	-10.2055	-6.0752	-34.2753	-9.167	-9.0621	-14.5287	-13.4482	-13.4781	-8.7771	-7.0608	-8.5651	-7.696	-14.5778	-23.4114	-10.665	-13.3535	-10.7629	-999.999	-999.999	0	-999.999	-4.0194
react	1040	-9.3488	-5.9838	-33.139	-9.7429	-9.638	-14.5912	-14.0388	-13.22	-8.5834	-7.3819	-8.7194	-7.7489	-14.9183	-23.9708	-10.524	-14.342	-11.238	-999.999	-999.999	0	-999.999	-3.6597
react	1041	-11.7184	-7.2755	-39.2549	-10.5154	-10.4105	-15.6621	-13.8556	-14.8693	-10.3293	-6.4718	-8.1669	-7.207	-14.0027	-22.5992	-9.3804	-12.9126	-10.107	-999.999	-999.999	-1.0064	-999.999	-5.3197
react	1042	-11.7364	-8.027	-53.0378	-10.3547	-10.2498	-15.6769	-13.9791	-14.9833	-17.0196	-3.7394	-4.7971	-4.5572	-20.154	-31.9571	-7.095	-9.2682	-6.638	-999.999	-999.999	-0.941	-999.999	-6.1537
react	1043	-11.1596	-7.077	-36.656	-9.9083	-9.8034	-14.7537	-13.9011	-14.2722	-9.3585	-7.4408	-8.7374	-7.7714	-14.0952	-22.8885	-9.6315	-13.4731	-10.3662	-999.999	-999.999	-0.1274	-999.999	-4.7165
react	1044	-10.8629	-8.0756	-39.0852	-9.6619	-9.557	-14.8084	-13.7128	-14.1167	-9.4218	-8.0463	-8.1888	-7.4326	-13.4329	-21.8965	-9.2941	-12.8337	-10.0278	-999.999	-999.999	-0.1513	-999.999	-4.7708
react	1045	-11.0075	-8.218	-39.5153	-9.8048	-9.6999	-14.9512	-14.7009	-14.242	-9.5655	-8.0436	-8.1689	-7.4288	-13.4301	-21.8922	-9.293	-12.8314	-10.0254	-999.999	-999.999	-0.2593	-999.999	-4.9122
react	1046	-11.7696	-7.2622	-37.1684	-10.0377	-9.9328	-15.0593	-13.7299	-14.592	-9.9601	-7.2924	-8.7236	-7.7393	-14.8092	-23.8705	-9.9104	-13.2689	-10.3382	-999.999	-999.999	-0.8384	-999.999	-5.0181

state	soln	si_Ba3(AsO4)2	si_Halite	si_Fluorite	si_Cu(OH)2	si_Tenorite	si_Brochantite	si_Cupricferrite	si_Cuprousferrite	si_CoFe2O4	si_Hercynite	si_Spinel	si_Magnesioferrite	si_Minium	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zincite	si_ZnO(active)	si_Be(OH)2(beta)	si_CO2(g)
i_soln	101	-3.6029	-7.5904	-5.6083	-8.3264	-7.2964	-25.1516	-10.9321	1.109	-0.6663	-7.9275	-19.3904	-17.4732	-57.79	-9.1902	-9.4642	-8.7442	-8.5242	-8.7242	-8.3241	-8.1785	-5.1158	-3.5376
i_soln	102	0.755	-8.7741	-9.4532	-5.8685	-4.8385	-19.2029	1.0067	7.3073	10.2861	4.838	-9.087	-6.714	-47.647	-7.4439	-7.7179	-6.9979	-6.7779	-6.9779	-6.5779	-6.4323	-3.3051	-3.2639
i_soln	103	-0.6597	-8.5649	-8.8696	-6.5688	-5.5388	-20.8748	-2.5093	5.3991	7.0668	1.8268	-11.2938	-9.9332	-50.7027	-8.3462	-8.6202	-7.9002	-7.6802	-7.8802	-7.4802	-7.3346	-3.6454	-3.5539
i_soln	104	0.011	-8.1214	-8.457	-6.1829	-5.1529	-19.6475	-1.0813	6.1061	8.4993	2.8902	-10.1602	-8.4998	-49.1436	-7.9474	-8.2214	-7.5014	-7.2814	-7.4814	-7.0813	-6.9357	-3.315	-3.264
react	1001	-5.1133	-8.5471	-9.9221	-8.9852	-7.9552	-28.5761	-8.852	1.2631	0.698	-6.1478	-19.9906	-16.3013	-57.0741	-10.0966	-10.3706	-9.6506	-9.4306	-9.6306	-9.2306	-9.085	-5.9624	-3.0585
react	1002	-4.6549	-8.4404	-9.5168	-8.8491	-7.8191	-27.8889	-8.8181	1.2909	0.7323	-6.2561	-19.8543	-16.2672	-56.5553	-10.0316	-10.3056	-9.5856	-9.3656	-9.5656	-9.1656	-9.02	-5.8279	-3.2347
react	1003	-4.3712	-8.8966	-8.2596	-7.3709	-6.3409	-22.8842	-6.6646	3.1879	1.8479	-5.8373	-19.4154	-15.1531	-56.814	-9.7625	-10.0365	-9.3165	-9.0965	-9.2965	-8.8965	-8.7509	-5.401	-3.2356
react	1004	-4.7409	-8.8309	-9.0109	-8.3716	-7.3416	-26.6516	-7.4666	1.993	1.7821	-6.0315	-19.6796	-15.2185	-57.0213	-10.1257	-10.3997	-9.6797	-9.4597	-9.6597	-9.2597	-9.1141	-5.6571	-3.235
react	1005	-5.058	-8.5709	-9.5314	-8.8549	-7.8249	-28.0599	-8.025	1.8274	1.5268	-5.7138	-19.8586	-15.4726	-56.8513	-9.973	-10.247	-9.527	-9.307	-9.507	-9.107	-8.9614	-5.8324	-3.2347
react	1006	-4.5209	-8.5408	-8.8092	-8.6081	-7.5781	-27.3703	-7.8593	2.0535	1.6946	-5.7345	-19.6104	-15.3054	-55.7667	-9.8496	-10.1236	-9.4036	-9.1836	-9.3836	-8.9836	-8.838	-5.5895	-3.0591
react	1007	0	-9.0952	-3.3171	-1.03	0	-8.0347	0.2378	5.8055	12.56	-9.5606	-8.9204	-4.0965	-23.6146	-1.0307	-1.3047	-0.5847	-0.3647	-0.5647	-0.1647	-0.0191	-0.0646	-5.2273
react	1008	0	-9.2741	-2.8698	-1.03	0	-7.7435	0.2378	5.7313	12.477	-9.6348	-9.0448	-4.2209	-23.6727	-1.172	-1.446	-0.726	-0.506	-0.706	-0.306	-0.1604	-0.0488	-5.1153
react	1009	0	-9.3736	-1.9671	-1.03	0	-5.7476	0.2378	5.9514	11.8997	-9.4147	-9.8146	-4.9907	-24.8565	-1.4685	-1.7425	-1.0225	-0.8025	-1.0025	-0.6025	-0.4569	-0.0084	-4.8999
react	1010	0	-9.0281	-2.7909	-1.03	0	-5.4937	0.2378	8.7046	11.6813	-6.6615	-9.4595	-4.6356	-30.6561	-1.61	-1.884	-1.164	-0.944	-1.144	-0.744	-0.5984	-0.013	-4.8219
react	1011	0	-8.6593	-3.189	-3.1229	-2.0929	-13.4634	-1.8551	8.947	11.484	-4.3262	-8.8522	-4.0283	-35.2781	-1.3579	-1.6319	-0.9119	-0.6919	-0.8919	-0.4919	-0.3463	-0.0246	-5.1544
react	1012	-11.6537	-7.2222	-4.5327	-8.7699	-7.7396	-25.9381	-13.4369	-0.1649	-3.3249	-10.3374	-20.584	-19.1492	-60.5259	-9.6169	-9.8909	-9.1709	-8.9509	-9.1509	-8.7507	-8.6051	-5.9376	-3.5357
react	1013	0	-7.6203	-1.1595	-2.3857	-1.3555	-7.844	-1.1177	6.9735	9.2129	-7.0369	-10.6044	-5.7807	-34.5734	-2.8346	-3.1086	-2.3886	-2.1686	-2.3686	-1.9683	-1.8227	-0.5254	-3.4262
react	1014	0	-9.2493	-4.7294	-2.0863	-1.0563	-12.3595	-0.8185	9.9836	12.6871	-4.3262	-8.7729	-3.949	-34.0675	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.0824	-6.0244
react	1015	0	-8.935	-1.7157	-1.4092	-0.3792	-7.0082	-0.1414	7.5466	11.0099	-7.4404	-10.7458	-5.9219	-31.1121	-1.8495	-2.1235	-1.4035	-1.1835	-1.3835	-0.9835	-0.8379	-0.0874	-3.8824
react	1016	-8.3947	-9.0835	-4.7464	-8.592	-7.562	-30.5665	-8.8901	5.0437	3.8448	-2.7603	-16.4146	-13.1565	-54.0797	-6.9061	-7.1801	-6.4601	-6.2401	-6.4401	-6.0401	-5.8945	-2.881	-2.9987
react	1017	-4.05	-8.8779	-8.5655	-8.5197	-7.4897	-27.2069	-7.4825	2.0887	2.0693	-5.7877	-19.5247	-14.9314	-56.0105	-9.7796	-10.0536	-9.3336	-9.1136	-9.3136	-8.9136	-8.768	-5.5063	-3.2354
react	1018	-3.8704	-8.5719	-8.5867	-8.5282	-7.4982	-27.2406	-7.5432	2.1053	2.0092	-5.7626	-19.5322	-14.9911	-55.6107	-9.7269	-10.0009	-9.2809	-9.0609	-9.2609	-8.8609	-8.7153	-5.5136	-3.0593
react	1019	-2.7819	-8.7682	-7.2101	-8.0204	-6.9904	-25.6265	-8.1535	2.3331	1.41	-6.0427	-19.0139	-15.591	-56.0417	-9.6737	-9.9477	-9.2277	-9.0077	-9.2077	-8.8077	-8.6621	-5.0228	-3.538
react	1020	-4.9369	-9.1192	-8.2875	-8.4179	-7.3879	-27.3563	-7.573	1.8261	1.9772	-6.1521	-19.4251	-15.0241	-56.0701	-10.0044	-10.2784	-9.5584	-9.3384	-9.5384	-9.1384	-8.9928	-5.4104	-3.2356
react	1021	-4.7952	-9.1776	-7.0254	-7.9394	-6.9094	-25.9141	-6.6716	3.0476	2.8905	-5.4091	-18.9349	-14.111	-55.6612	-9.8838	-10.1578	-9.4378	-9.2178	-9.4178	-9.0178	-8.8722	-4.9511	-3.2373
react	1022	-3.8559	-9.1857	-6.8418	-7.8617	-6.8317	-25.6826	-6.5939	3.1791	2.9716	-5.3553	-18.8538	-14.0299	-55.5254	-9.496	-9.77	-9.05	-8.83	-9.03	-8.63	-8.4844	-4.8782	-3.2376
react	1023	-4.2168	-8.5502	-8.9754	-8.361	-7.331	-26.4513	-7.6095	2.0653	1.6402	-5.9698	-19.6677	-15.36	-55.8367	-9.9587	-10.2327	-9.5127	-9.2927	-9.4927	-9.0927	-8.9471	-5.6454	-3.2351
react	1024	-3.1906	-8.4761	-7.3087	-8.0562	-7.0262	-25.6804	-8.0989	2.1547	1.4593	-6.1852	-19.0547	-15.5413	-55.7933	-9.9026	-10.1766	-9.4566	-9.2366	-9.4366	-9.0366	-8.891	-5.0602	-3.5378
react	1025	-3.15	-7.627	-7.3202	-8.069	-7.039	-25.4458	-8.3098	2.0585	1.2524	-6.2685	-19.0607	-15.7455	-55.8752	-9.5495	-9.8235	-9.1035	-8.8835	-9.0835	-8.6835	-8.5379	-5.0653	-3.5379
react	1026	-3.7008	-7.3205	-4.9681	-7.8293	-6.7993	-24.4999	-9.1129	2.067	0.484	-10.9273	-22.9105	-16.2105	-55.6563	-8.5563	-8.8303	-8.1103	-7.8903	-8.0903	-7.6902	-7.5446	-4.9815	-3.5394
react	1027	-3.9321	-9.0879	-6.4457	-7.6682	-6.6382	-24.4973	-6.4918	3.0851	3.0684	-5.6429	-18.6654	-13.9329	-54.4842	-9.5317	-9.8057	-9.0857	-8.8657	-9.0657	-8.6657	-8.5201	-4.7122	-3.2387
react	1028	-5.0202	-7.9803	-7.4768	-8.194	-7.164	-25.6309	-10.6381	1.3221	-0.1531	-7.0039	-18.813	-17.5772	-57.175	-9.1627	-9.4367	-8.7167	-8.4967	-8.6967	-8.2967	-8.1511	-5.1646	-3.5375
react	1029	-3.8085	-8.1862	-6.4367	-7.9794	-6.9494	-25.1029	-9.799	1.749	0.4792	-7.5527	-19.5394	-16.918	-56.3282	-9.1332	-9.4072	-8.6872	-8.4672	-8.6672	-8.2672	-8.1216	-4.9912	-3.5383
react	1030	-4.6323	-8.8522	-8.3631	-8.4514	-7.4213	-27.1774	-7.4081	2.3941	2.1475	-5.5507	-19.4526	-14.8532	-55.7319	-9.712	-9.986	-9.266	-9.046	-9.246	-8.846	-8.7004	-5.4367	-3.0594
react	1031	-4.848	-8.5441	-9.8072	-8.9457	-7.9157	-28.4477	-8.1599	1.5166	1.3895	-5.9338	-19.9518	-15.6098	-56.3586	-9.9996	-10.2736	-9.5536	-9.3336	-9.5336	-9.1336	-8.988	-5.9241	-3.0585
react	1032	-3.9939	-8.5958	-7.3154	-8.0951	-7.0651	-25.8439	-6.953	3.3628	2.641	-4.9383	-19.0574	-14.3592	-55.0147	-9.3289	-9.6029	-8.8829	-8.6629	-8.8629	-8.4629	-8.3173	-5.0627	-3.0607
react	1033	-5.4105	-8.7588	-9.3675	-8.4939	-7.4639	-27.3443	-7.6108	1.9681	1.638	-5.9341	-19.8015	-15.3624	-56.7013	-10.3176	-10.5916	-9.8716	-9.6516	-9.8516	-9.4516	-9.306	-5.7766	-3.2348
react	1034	-5.7965	-8.9225	-9.4748	-8.532	-7.502	-27.4711	-7.6671	2.1134	1.5831	-5.7506	-19.8381	-15.4171	-56.6684	-10.3584	-10.6324	-9.9124	-9.6924	-9.8924	-9.4924	-9.3468	-5.8125	-3.0587
react	1035	-5.6256	-8.7254	-9.5791	-8.5682	-7.5381	-27.1156	-7.7259	2.0492	1.5239	-5.7787	-19.8742	-15.4759	-57.2776	-10.2928	-10.5668	-9.8468	-9.6268	-9.8268	-9.4267	-9.2811	-5.8478	-3.2347
react	1036	-4.437	-8.3941	-10.4697	-8.6908	-7.6608	-27.5987	-8.0604	1.6871	1.0102	-6.0181	-20.1743	-15.9878	-56.2891	-10.0784	-10.3524	-9.6324	-9.4124	-9.6124	-9.2123	-9.0667	-6.1443	-3.2343
react	1037	-4.6969	-8.443	-9.6605	-8.8955	-7.8655	-28.5802	-8.4577	1.3963	1.092	-6.1043	-19.9015	-15.9076	-56.5855	-10.0174	-10.2914	-9.5714	-9.3514	-9.5514	-9.1513	-9.0057	-5.8748	-3.2347
react	1038	-10.3152	-8.4939	-3.6779	-10.5841	-9.5541	-39.2776	-11.8153	3.9848	4.1442	-1.8272	-15.6576	-13.3327	-57.2425	-5.6639	-5.9379	-5.2179	-4.9979	-5.1979	-4.7979	-4.6523	-2.3922	-2.7789
react	1039	-5.635	-7.8969	-9.0861	-8.1241	-7.0941	-24.9894	-7.5473	2.8077	1.6597	-5.4642	-20.0711	-15.9383	-56.4599	-9.7816	-10.0556	-9.3356	-9.1156	-9.3156	-8.9155	-8.7699	-6.0428	-2.8365
react	1040	-5.1465	-7.9437	-8.9027	-8.2458	-7.2158	-25.1607	-7.4785	2.4622	1.4723	-5.6881	-19.8484	-15.5251	-55.6886	-9.8387	-10.1127	-9.3927	-9.1727	-9.3727	-8.9727	-8.8271	-5.823	-2.9338
react	1041	-4.3458	-8.9046	-6.5519	-7.7862	-6.7562	-25.5277	-6.5184	3.8355	3.1075	-4.7744	-18.7176	-13.8937	-55.3789	-9.2825	-9.5565	-8.8365	-8.6165	-8.8165	-8.4165	-8.2709	-4.7577	-2.9374
react	1042	-9.858	-9.08	-4.7272	-10.7309	-9.7009	-41.0522	-12.0091	3.885	4.2924	-1.7802	-14.9868	-12.7088	-55.1785	-5.6509	-5.9249	-5.2049	-4.9849	-5.1849	-4.7849	-4.6393	-1.8988	-3.1992
react	1043	-2.818	-9.5242	-6.4639	-7.6818	-6.6518	-24.2438	-6.414	3.2722	3.1496	-5.4422	-18.6756	-13.8517	-54.8327	-9.5518	-9.8258	-9.1058	-8.8858	-9.0858	-8.6858	-8.5402	-4.7205	-3.2386
react	1044	-1.9896	-9.2662	-5.2452	-7.3494	-6.3194	-23.3099	-7.324	3.0015	2.2481	-7.5097	-19.7993	-14.7532	-53.8451	-9.0007	-9.2747	-8.5547	-8.3347	-8.5347	-8.1347	-7.9891	-4.5052	-3.2412
react	1045	-1.8775	-9.175	-5.1132	-7.348	-6.318	-23.4494	-7.3171	3.0057	2.2559	-7.9499	-20.24	-14.7456	-53.8337	-8.9807	-9.2547	-8.5347	-8.3147	-8.5147	-8.1147	-7.9691	-4.5243	-3.2412
react	1046	-4.1477	-9.164	-7.4906	-8.1279	-7.0979	-26.1838	-6.9064	2.7962	2.953	-5.472	-19.1269	-14.3493	-55.258	-9.7162	-9.9902	-9.2702	-9.0502	-9.2502	-8.8502	-8.7046	-5.1275	-3.0604

state	soln	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL
i_soln	101	-50.2895	2.89E+02	4.90E+01	2.00E+00	2.80E+01	7.50E+00	2.04E+01	1.81E+02	4.63E-03	4.39E-09	4.40E-95	1.00E-01	0.00E+00	3.25E-01	6.00E-02	6.45E-02	2.50E+02	1.50E+00	5.00E+00	1.00E+00	1.00E+00	2.55E+01	4.47E+02	1.00E+00	1.00E-01
i_soln	102	-46.2894	3.35E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.95E+01	2.00E+00	8.27E-02	6.67E-07	4.40E-95	1.00E-01	0.00E+00	3.09E+00	2.16E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.70E+02	3.00E+00	1.00E-01
i_soln	103	-47.0894	3.56E+01	7.00E+00	1.00E+00	1.00E+00	1.00E+00	1.35E+01	1.00E+01	2.67E-02	1.36E-07	4.40E-95	1.00E-01	0.00E+00	1.22E+00	3.40E-01	1.00E-03	2.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.40E+01	1.00E+00	1.00E-01
i_soln	104	-46.2894	5.04E+01	1.30E+01	1.00E+00	1.00E+00	1.00E+00	2.04E+01	1.20E+01	8.30E-02	6.77E-07	4.40E-95	1.00E-01	0.00E+00	1.13E+00	2.90E-01	1.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.50E+01	1.00E+00	1.00E-01
react	1001	-48.0634	4.12E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.49E+01	4.00E+00	5.08E-03	1.58E-09	4.40E-95	1.00E-01	0.00E+00	1.69E+00	1.79E+00	2.00E-03	3.80E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	2.65E+02	3.00E+00	1.00E-01
react	1002	-47.8345	4.02E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	2.12E+01	7.00E+00	3.95E-03	1.43E-09	4.40E-95	1.00E-01	0.00E+00	1.22E+00	1.02E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.25E+02	3.00E+00	1.00E-01
react	1003	-48.1592	2.44E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.46E+01	2.00E+00	6.37E-03	3.67E-09	4.40E-95	1.00E-01	0.00E+00	3.42E-01	9.70E-01	1.70E-02	2.30E+02	1.00E+00	1.00E+00	2.00E+00	1.10E+01	1.00E+00	1.52E+02	1.00E+00	1.00E-01
react	1004	-46.9848	2.73E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.70E+01	2.00E+00	4.73E-03	2.03E-09	4.40E-95	1.00E-01	0.00E+00	6.42E-01	1.14E+00	1.70E-02	2.40E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.21E+02	1.00E+00	1.00E-01
react	1005	-48.4059	4.22E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.36E+01	5.00E+00	3.94E-03	1.42E-09	4.40E-95	1.00E-01	0.00E+00	1.17E+00	3.59E+00	3.00E-03	4.60E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.60E+02	3.00E+00	1.00E-01
react	1006	-48.4853	3.62E+01	5.00E+00	2.00E+00	1.00E+00	1.00E+00	2.01E+01	4.00E+00	7.77E-03	3.67E-09	4.40E-95	1.00E-01	0.00E+00	5.71E-01	1.93E+00	3.00E-03	3.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.95E+02	4.00E+00	1.00E-01
react	1007	-32.143	3.68E+01	3.00E+00	1.00E+00	7.00E+00	1.00E+00	9.33E+00	2.00E+00	1.18E+01	1.25E+00	4.40E-95	2.00E-01	0.00E+00	8.87E-03	9.19E-09	1.09E-02	1.60E+02	1.00E+00	1.00E+00	1.00E+00	3.06E-01	1.00E+00	2.70E+01	1.00E+00	1.00E-01
react	1008	-31.8463	4.02E+01	2.00E+00	1.00E+00	8.83E+00	1.00E+00	9.30E+00	3.00E+00	1.33E+01	1.23E+00	4.40E-95	3.00E-01	0.00E+00	7.73E-03	8.43E-09	1.29E-02	1.50E+02	1.00E+00	1.00E+00	1.00E+00	3.33E-01	1.00E+00	2.10E+01	1.00E+00	1.00E-01
react	1009	-32.7267	1.23E+02	3.00E+00	1.00E+00	3.20E+01	1.00E+00	5.21E+00	6.99E+01	1.00E+01	4.47E-01	4.40E-95	5.00E-01	0.00E+00	3.54E-03	5.78E-09	1.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	4.57E-01	1.00E+00	2.00E+01	1.00E+00	1.00E-01
react	1010	-43.7392	1.33E+02	3.00E+00	1.00E+00	3.10E+01	4.00E+00	1.16E+01	7.28E+01	9.07E+00	3.09E-01	4.40E-95	2.00E-01	0.00E+00	2.69E-03	5.40E-09	2.00E-03	1.30E+02	1.00E+00	1.00E+00	1.00E+00	1.01E+00	1.00E+00	2.00E+01	1.00E+00	1.00E-01
react	1011	-53.0806	1.84E+02	9.00E+00	1.00E+00	7.00E+00	2.70E+01	9.29E+00	1.27E+02	3.45E+00	9.86E-02	4.40E-95	3.00E-01	0.00E+00	2.20E-03	3.29E-08	4.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+00	4.80E+01	1.00E+00	1.00E-01
react	1012	-51.0898	2.44E+03	1.50E+01	3.01E+00	5.94E+02	8.52E+01	1.97E+02	1.54E+03	3.25E-03	2.71E-09	4.40E-95	1.00E-01	0.00E+00	6.71E-01	5.01E-02	1.10E-01	5.21E+02	1.00E+00	7.02E+00	1.00E+00	2.00E+00	2.41E+01	8.34E+02	1.00E+00	2.00E-01
react	1013	-42.237	2.34E+03	9.02E+00	1.00E+00	5.74E+02	8.22E+01	1.30E+02	1.52E+03	2.21E+01	9.67E-02	4.40E-95	6.01E-01	0.00E+00	2.68E-04	1.96E-08	1.00E-03	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.01E+00	1.86E+02	1.00E+00	1.00E-01
react	1014	-53.0806	1.84E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	6.42E+00	2.00E+00	2.16E+00	2.56E-01	4.40E-95	1.00E-01	0.00E+00	1.02E-02	1.15E-08	7.00E-03	3.60E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	2.00E+00	2.49E+01	6.23E-01	1.00E-01
react	1015	-40.6238	9.92E+01	2.00E+00	1.00E+00	2.60E+01	1.00E+00	2.11E+01	1.30E+01	3.38E+01	4.83E-01	4.40E-95	7.00E-01	0.00E+00	1.15E-03	4.95E-09	1.00E-03	1.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.30E+01	1.00E+00	1.00E-01
react	1016	-62.4758	2.04E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.43E+00	3.00E+00	3.45E-01	6.20E-06	4.40E-95	1.00E-01	0.00E+00	7.72E-04	1.16E+00	5.00E-03	2.70E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.09E+02	2.00E+00	1.00E-01
react	1017	-47.6959	2.68E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.53E+01	3.00E+00	5.65E-03	2.89E-09	4.40E-95	1.00E-01	0.00E+00	4.49E-01	1.40E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.88E+02	2.00E+00	1.00E-01
react	1018	-47.9006	3.23E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.86E+01	3.00E+00	8.45E-03	4.33E-09	4.40E-95	1.00E-01	0.00E+00	4.57E-01	1.51E+00	1.00E-03	3.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.16E+02	3.00E+00	1.00E-01
react	1019	-49.0167	2.49E+01	4.50E+00	1.00E+00	1.00E+00	1.00E+00	1.31E+01	3.50E+00	5.04E-03	4.60E-09	4.40E-95	1.00E-01	0.00E+00	1.79E-01	2.40E-01	1.20E-02	1.95E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.50E+00	7.40E+01	1.00E+00	1.00E-01
react	1020	-46.6229	2.03E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.30E+01	1.00E+00	6.26E-03	3.52E-09	4.40E-95	1.00E-01	0.00E+00	3.39E-01	4.80E-01	1.00E-03	2.10E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	8.90E+01	1.00E+00	1.00E-01
react	1021	-48.7491	1.88E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.14E+01	1.00E+00	1.09E-02	1.07E-08	4.40E-95	1.00E-01	0.00E+00	1.57E-01	8.59E-01	1.00E-03	2.00E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	3.80E+01	1.00E+00	1.00E-01
react	1022	-48.9642	1.85E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.12E+01	1.00E+00	1.20E-02	1.29E-08	4.40E-95	1.00E-01	0.00E+00	1.43E-01	8.07E-01	4.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	7.70E+01	1.00E+00	1.00E-01
react	1023	-47.5388	3.32E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.96E+01	3.00E+00	4.83E-03	2.13E-09	4.40E-95	1.00E-01	0.00E+00	6.43E-01	1.28E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.73E+02	3.00E+00	1.00E-01
react	1024	-48.2654	3.13E+01	7.00E+00	1.00E+00	1.00E+00	1.00E+00	1.65E+01	4.00E+00	4.85E-03	4.27E-09	4.40E-95	1.00E-01	0.00E+00	1.91E-01	1.90E-01	3.00E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	4.80E+01	1.00E+00	1.00E-01
react	1025	-48.3285	7.20E+01	2.25E+01	1.00E+00	1.00E+00	1.00E+00	3.72E+01	8.46E+00	5.00E-03	4.67E-09	4.40E-95	1.00E-01	0.00E+00	2.04E-01	1.60E-01	1.00E-03	2.15E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	1.10E+02	1.00E+00	1.00E-01
react	1026	-49.489	1.07E+02	3.40E+01	1.00E+00	1.00E+00	2.00E+00	5.08E+01	1.67E+01	7.07E-03	9.53E-09	4.40E-95	1.00E-01	0.00E+00	1.00E-02	5.00E-02	3.00E-03	2.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.00E+00	5.74E+02	1.00E+00	1.00E-01
react	1027	-47.9967	2.01E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.33E+00	4.00E+00	1.49E-02	2.01E-08	4.40E-95	1.00E-01	0.00E+00	1.19E-01	2.70E-01	1.00E-03	2.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	4.60E+01	1.00E+00	1.00E-01
react	1028	-50.2891	6.03E+01	1.40E+01	1.00E+00	1.00E+00	3.00E+00	2.65E+01	1.39E+01	4.44E-03	3.67E-09	4.40E-95	1.00E-01	0.00E+00	2.40E-01	5.00E-02	6.00E-03	1.80E+02	1.00E+00	8.00E+00	1.00E+00	1.00E+00	1.40E+01	3.42E+02	1.00E+00	1.00E-01
react	1029	-49.8892	4.63E+01	1.10E+01	1.00E+00	1.00E+00	2.00E+00	2.08E+01	9.91E+00	5.55E-03	5.69E-09	4.40E-95	1.00E-01	0.00E+00	1.20E-01	5.00E-02	4.00E-03	1.10E+02	1.00E+00	5.00E+00	1.00E+00	1.00E+00	9.00E+00	2.25E+02	1.00E+00	1.00E-01
react	1030	-48.6316	2.73E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.62E+01	2.00E+00	9.20E-03	5.11E-09	4.40E-95	1.00E-01	0.00E+00	3.71E-01	2.05E+00	4.00E-03	3.60E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.86E+02	3.00E+00	1.00E-01
react	1031	-47.6141	4.22E+01	4.00E+00	2.00E+00	1.00E+00	1.00E+00	2.51E+01	4.00E+00	5.31E-03	1.73E-09	4.40E-95	1.00E-01	0.00E+00	1.50E+00	2.68E+00	4.00E-03	4.50E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	1.00E+00	3.03E+02	4.00E+00	1.00E-01
react	1032	-50.8837	3.39E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.76E+01	4.00E+00	1.46E-02	1.29E-08	4.40E-95	1.00E-01	0.00E+00	1.92E-01	3.38E+00	1.00E-03	3.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.81E+02	5.00E+00	1.00E-01
react	1033	-47.4184	3.04E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.02E+01	1.00E+00	4.14E-03	1.56E-09	4.40E-95	1.00E-01	0.00E+00	8.69E-01	1.89E+00	2.00E-03	2.50E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	1.00E+00	1.03E+02	2.00E+00	1.00E-01
react	1034	-48.1887	3.14E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	2.08E+01	1.00E+00	5.97E-03	2.16E-09	4.40E-95	1.00E-01	0.00E+00	9.67E-01	3.14E+00	2.00E-03	2.20E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.02E+02	3.00E+00	1.00E-01
react	1035	-48.1217	3.59E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.19E+01	3.00E+00	3.84E-03	1.35E-09	4.40E-95	1.00E-01	0.00E+00	1.15E+00	3.20E+00	1.00E-03	3.30E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.29E+02	2.00E+00	1.00E-01
react	1036	-47.5877	5.45E+01	4.00E+00	3.00E+00	1.00E+00	1.00E+00	3.59E+01	2.00E+00	2.79E-03	7.24E-10	4.40E-95	1.00E-01	0.00E+00	2.86E+00	3.69E+00	2.00E-03	5.30E+02	1.00E+00	1.00E+00	5.00E+00	3.00E+00	1.00E+00	4.22E+02	7.00E+00	1.00E-01
react	1037	-47.6281	3.99E+01	5.00E+00	2.00E+00	1.00E+00	1.00E+00	2.53E+01	2.00E+00	3.73E-03	1.28E-09	4.40E-95	1.00E-01	0.00E+00	1.21E+00	1.61E+00	1.00E-03	4.30E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.59E+02	3.00E+00	1.00E-01
react	1038	-68.0746	3.84E+01	6.00E+00	2.00E+00	3.00E+00	1.00E+00	1.86E+01	3.34E+00	1.40E+00	6.27E-05	4.40E-95	2.00E-01	0.00E+00	2.02E-04	1.74E+00	4.10E-02	5.70E+02	1.00E+00	3.00E+00	1.10E+01	5.00E+00	9.00E+00	4.09E+02	9.00E+00	1.00E-01
react	1039	-49.9105	8.70E+01	9.00E+00	3.00E+00	3.00E+00	1.00E+00	5.09E+01	5.45E+00	8.05E-03	2.45E-09	4.40E-95	2.00E-01	0.00E+00	2.42E+00	1.05E+01	2.70E-02	8.30E+02	1.00E+00	4.00E+00	1.50E+01	9.00E+00	1.30E+01	6.60E+02	1.20E+01	1.00E-01
react	1040	-48.6341	7.05E+01	1.30E+01	2.00E+00	1.00E+00	1.00E+00	3.12E+01	1.58E+01	8.20E-03	3.13E-09	4.40E-95	2.00E-01	0.00E+00	1.61E+00	3.75E+00	2.00E-03	5.90E+02	1.00E+00	1.00E+00	3.00E+00	4.00E+00	1.00E+00	3.47E+02	8.00E+00	1.00E-01
react	1041	-51.2877	2.42E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.43E+01	1.00E+00	2.82E-02	3.61E-08	4.40E-95	1.00E-01	0.00E+00	1.24E-01	2.25E+00	3.60E-02	2.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	2.00E+00	9.20E+01	2.00E+00	1.00E-01
react	1042	-68.3565	1.84E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.47E+00	9.25E-01	1.12E+00	1.03E-04	4.40E-95	1.00E-01	0.00E+00	2.60E-05	4.12E-01	2.80E-02	2.40E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	3.00E+00	8.00E+01	3.00E+00	1.00E-01
react	1043	-48.6168	1.91E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	5.13E+00	8.00E+00	1.48E-02	1.98E-08	4.40E-95	1.00E-01	0.00E+00	1.23E-01	4.40E-01	4.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.50E+01	1.00E+00	1.00E-01
react	1044	-48.6894	1.96E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	6.19E+00	7.00E+00	2.17E-02	4.29E-08	4.40E-95	1.00E-01	0.00E+00	4.00E-02	5.00E-02	7.00E-03	1.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	7.30E+01	1.00E+00	1.00E-01
react	1045	-48.6894	1.91E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	7.63E+00	5.00E+00	2.17E-02	4.28E-08	4.40E-95	1.00E-01	0.00E+00	3.00E-02	5.00E-02	1.00E-03	1.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	7.60E+01	1.00E+00	1.00E-01
react	1046	-48.5899	2.06E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.18E+01	2.00E+00	1.32E-02	1.05E-08	4.40E-95	1.00E-01	0.00E+00	2.06E-01	1.16E+00	2.40E-02	2.50E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	3.00E+00	8.70E+01	2.00E+00	1.00E-01

state	soln	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
i_soln	101	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	102	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	103	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
i_soln	104	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1001	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1002	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1003	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1004	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1005	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1006	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1007	5.74E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1008	6.67E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1009	2.95E-05	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1010	4.11E-05	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1011	1.14E-04	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1012	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1013	2.80E-02	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1014	4.35E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1015	7.51E-06	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1016	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1017	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1018	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1019	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1020	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1021	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1022	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1023	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1024	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1025	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1026	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1027	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1028	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1029	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1030	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1031	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1032	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1033	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1034	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1035	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1036	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1037	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1038	1.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1039	1.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1040	2.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1041	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1042	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1043	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1044	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1045	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1046	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li	Mg	Mn	Na	N(-3)	N(5)
react	1047	8.759	-5.17	7.87E-05	6E-04	1	3.67E-14	4.35E-09	9.04E-08	7.45E-11	3.42E-05	1.11E-07	2.50E-05	8.90E-10	1.68E-04	1.70E-08	3.85E-08	1.57E-08	5.99E-05	1.58E-05	1.13E-10	2.56E-05	2.88E-07	4.11E-05	1.09E-07	2.61E-04	0.00E+00	0.00E+00
react	1048	8.751	0.19	1.36E-04	7E-04	1	3.93E-15	3.83E-10	8.90E-08	2.42E-14	2.13E-05	1.11E-07	4.99E-05	8.90E-10	2.57E-04	1.70E-08	1.92E-08	1.57E-08	1.20E-04	2.11E-05	1.03E-13	2.56E-05	1.44E-07	4.11E-05	5.46E-08	3.04E-04	0.00E+00	0.00E+00
react	1049	3.902	4.62	-1.28E-04	9E-04	1	-4.95E-16	-3.82E-11	2.74E-05	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	6.28E-04	5.09E-08	7.69E-08	6.29E-08	2.00E-05	5.26E-06	7.32E-05	2.56E-05	2.88E-07	4.11E-05	1.18E-06	1.31E-04	0.00E+00	0.00E+00
react	1050	5.377	-1.15	4.93E-07	0.001	1	-4.42E-19	-2.10E-14	2.93E-07	2.67E-08	4.16E-05	1.11E-07	4.99E-05	8.90E-10	7.87E-04	2.55E-07	2.89E-07	1.57E-07	4.00E-05	1.05E-05	2.18E-04	7.67E-05	1.15E-06	4.11E-05	4.19E-07	3.48E-04	0.00E+00	0.00E+00
react	1051	4.284	3.2	-5.37E-05	0.002	1	1.31E-14	5.72E-10	7.67E-06	2.67E-08	3.70E-05	1.11E-07	4.99E-05	8.90E-10	7.51E-04	6.79E-08	1.73E-07	1.10E-07	3.00E-05	5.26E-06	1.82E-04	5.12E-05	8.64E-07	4.11E-05	2.55E-07	4.79E-04	0.00E+00	0.00E+00
react	1052	3.801	4.59	-1.65E-04	0.002	1	8.38E-14	3.31E-09	8.06E-05	1.33E-08	3.47E-05	1.11E-07	2.50E-05	8.90E-10	9.81E-04	5.94E-08	1.06E-07	7.08E-08	3.00E-05	5.26E-06	1.39E-04	5.12E-05	5.76E-07	4.11E-05	3.19E-07	4.57E-04	0.00E+00	0.00E+00
react	1053	3.991	4.61	-1.06E-04	0.001	1	1.56E-13	9.16E-09	2.63E-05	1.33E-08	3.70E-05	1.11E-07	2.50E-05	8.90E-10	5.24E-04	3.39E-08	5.77E-08	4.72E-08	3.00E-05	5.26E-06	4.74E-05	2.56E-05	5.76E-07	4.11E-05	7.28E-08	4.35E-04	0.00E+00	0.00E+00
react	1054	8.718	2.88	3.13E-04	0.005	1	1.45E-15	1.89E-11	8.60E-08	9.49E-14	2.04E-05	1.11E-07	3.49E-04	8.90E-10	3.12E-03	1.70E-08	1.92E-08	1.28E-08	2.90E-04	3.16E-05	9.24E-14	2.56E-05	1.44E-07	2.06E-04	1.82E-08	2.74E-03	0.00E+00	0.00E+00
react	1055	9.688	3.61	4.76E-04	0.002	1	-1.52E-14	-3.82E-10	7.87E-07	7.28E-15	2.68E-05	1.11E-07	8.36E-05	8.90E-10	1.21E-03	1.70E-08	1.92E-08	4.12E-09	3.24E-04	3.16E-05	3.14E-13	2.56E-05	1.44E-07	4.11E-05	1.80E-08	1.74E-03	0.00E+00	0.00E+00
react	1056	10.11	1.84	8.14E-04	0.002	1	-1.25E-18	-3.51E-14	2.06E-06	2.10E-15	2.41E-05	1.11E-07	2.12E-05	8.90E-10	7.19E-04	1.70E-08	1.92E-08	4.08E-09	4.52E-04	2.63E-05	7.34E-13	2.56E-05	2.88E-07	3.74E-05	2.33E-08	1.65E-03	0.00E+00	0.00E+00
react	1057	3.979	4.49	-1.07E-04	7E-04	1	-1.20E-17	-1.13E-12	1.80E-05	1.33E-08	1.76E-05	1.11E-07	2.50E-05	8.90E-10	5.12E-04	1.70E-08	3.85E-08	4.72E-08	2.00E-05	5.26E-06	6.33E-05	2.56E-05	1.44E-07	4.11E-05	4.19E-07	8.70E-05	0.00E+00	0.00E+00
react	1058	3.795	4.78	-1.64E-04	0.001	1	-3.82E-17	-2.29E-12	5.82E-05	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	7.65E-04	1.70E-08	7.69E-08	1.57E-08	2.00E-05	5.26E-06	9.52E-05	5.12E-05	1.44E-07	4.11E-05	2.00E-07	1.31E-04	0.00E+00	0.00E+00
react	1059	3.74	4.92	-1.86E-04	0.001	1	7.01E-14	3.93E-09	8.22E-05	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	8.29E-04	1.70E-08	7.69E-08	3.15E-08	2.00E-05	5.26E-06	4.33E-05	7.67E-05	2.88E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
react	1060	7.89	1.66	2.17E-05	0.002	1	7.14E-19	2.98E-14	1.26E-08	3.48E-12	1.02E-05	1.11E-07	3.24E-04	8.90E-10	6.42E-05	8.48E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	2.62E-13	2.56E-05	2.88E-07	2.06E-04	4.02E-06	1.74E-04	0.00E+00	0.00E+00
react	1061	6.5	-1.85	1.23E-05	0.001	1	9.94E-14	8.25E-09	8.70E-10	1.33E-08	1.02E-05	1.11E-07	1.75E-04	8.90E-10	6.46E-05	2.55E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	6.41E-07	2.56E-05	1.44E-07	4.11E-05	1.35E-05	1.31E-04	0.00E+00	0.00E+00
react	1062	4.639	3.81	-2.36E-05	0.001	1	5.71E-13	3.51E-08	2.98E-06	1.33E-08	1.48E-05	1.11E-07	1.25E-04	8.90E-10	1.95E-04	1.36E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	5.00E-06	2.56E-05	2.88E-07	1.65E-04	8.72E-06	1.74E-04	0.00E+00	0.00E+00
react	1063	4.5	4	-3.70E-05	0.006	1	1.09E-12	1.70E-08	5.93E-06	1.34E-08	1.67E-05	1.11E-07	1.10E-03	8.90E-10	2.32E-04	5.94E-07	1.92E-08	1.57E-08	2.00E-05	5.26E-06	2.15E-06	2.56E-05	2.88E-07	5.35E-04	3.42E-05	2.61E-04	0.00E+00	0.00E+00
react	1064	6.226	-2.58	1.68E-05	4E-04	1	1.48E-13	2.37E-08	1.71E-09	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	2.68E-04	1.70E-08	5.77E-08	1.57E-08	4.00E-05	1.05E-05	9.54E-06	2.56E-05	2.88E-07	4.11E-05	5.28E-07	1.30E-04	0.00E+00	0.00E+00
react	1065	9.558	-2.06	1.16E-04	4E-04	1	1.34E-16	2.29E-11	5.66E-07	2.65E-15	2.31E-05	1.11E-07	2.50E-05	8.90E-10	1.30E-04	3.39E-08	7.69E-08	3.15E-08	5.00E-05	1.05E-05	2.58E-13	2.56E-05	1.44E-07	4.11E-05	9.47E-07	1.30E-04	0.00E+00	0.00E+00
react	1066	10.44	-2.43	4.94E-04	0.001	1	-2.23E-18	-1.18E-13	4.34E-06	1.27E-15	5.83E-05	2.22E-07	4.99E-05	8.90E-10	1.40E-04	5.09E-08	7.69E-08	1.40E-08	7.99E-05	5.79E-05	1.49E-12	7.67E-05	5.76E-07	4.11E-05	4.00E-07	6.96E-04	0.00E+00	0.00E+00
react	1067	9.64	2.52	4.26E-04	0.001	1	-4.62E-19	-2.70E-14	6.94E-07	3.30E-15	2.04E-05	1.11E-07	7.49E-05	8.90E-10	2.61E-04	1.70E-08	1.92E-08	4.16E-09	3.00E-04	2.11E-05	2.84E-13	2.56E-05	2.88E-07	4.11E-05	1.17E-07	6.09E-04	0.00E+00	0.00E+00
react	1068	9.785	1.58	4.97E-04	0.001	1	-1.04E-15	-4.36E-11	9.73E-07	6.74E-15	1.57E-05	1.11E-07	2.50E-05	8.90E-10	3.59E-04	3.39E-08	7.69E-08	4.02E-09	3.30E-04	2.11E-05	3.75E-13	2.56E-05	8.65E-07	4.11E-05	2.18E-07	1.04E-03	0.00E+00	0.00E+00
react	1069	3.94	4.84	-1.17E-04	7E-04	1	2.07E-15	2.10E-10	2.29E-05	1.33E-08	3.15E-05	1.11E-07	2.50E-05	8.90E-10	4.46E-04	1.70E-08	3.85E-08	1.57E-08	2.00E-05	5.26E-06	2.29E-05	2.56E-05	1.44E-07	4.11E-05	1.55E-07	1.09E-04	0.00E+00	0.00E+00
react	1070	4.007	4.52	-1.00E-04	6E-04	1	-2.96E-17	-3.26E-12	1.91E-05	1.33E-08	1.94E-05	1.11E-07	2.50E-05	8.90E-10	2.98E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.77E-06	2.56E-05	1.44E-07	4.11E-05	9.83E-07	1.31E-04	0.00E+00	0.00E+00
react	1071	4.231	4.36	-5.97E-05	5E-04	1	1.73E-17	2.32E-12	7.49E-06	1.33E-08	1.67E-05	1.11E-07	2.50E-05	8.90E-10	2.49E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.51E-06	2.56E-05	1.44E-07	4.11E-05	2.18E-07	1.30E-04	0.00E+00	0.00E+00
react	1072	9.109	1.71	3.05E-04	9E-04	1	-1.17E-16	-9.30E-12	2.04E-07	8.68E-15	2.13E-05	1.11E-07	2.00E-04	8.90E-10	2.77E-04	1.70E-08	1.92E-08	6.68E-09	2.60E-04	2.11E-05	1.25E-13	2.56E-05	1.44E-07	4.11E-05	1.64E-07	1.31E-04	0.00E+00	0.00E+00
react	1073	9.352	3.52	2.77E-04	0.001	1	-8.20E-14	-5.89E-09	3.57E-07	8.60E-15	2.04E-05	1.11E-07	2.16E-04	8.90E-10	2.20E-04	1.70E-08	1.92E-08	4.62E-09	2.11E-04	1.58E-05	1.74E-13	2.56E-05	1.44E-07	4.11E-05	1.42E-07	1.74E-04	0.00E+00	0.00E+00
react	1074	9.414	3.98	2.68E-04	0.001	1	2.91E-13	2.17E-08	4.11E-07	4.42E-15	1.94E-05	1.11E-07	2.02E-04	8.90E-10	2.58E-04	1.70E-08	1.92E-08	4.35E-09	1.97E-04	2.11E-05	1.91E-13	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
react	1075	9.468	3.45	4.17E-04	0.002	1	-5.98E-19	-1.96E-14	4.73E-07	3.90E-14	3.24E-05	1.11E-07	1.25E-04	8.90E-10	4.22E-04	1.70E-08	3.85E-08	4.65E-09	3.11E-04	4.74E-05	2.11E-13	2.56E-05	2.88E-07	9.92E-05	7.28E-08	1.09E-03	0.00E+00	0.00E+00
react	1076	9.29	3.71	4.25E-04	0.003	1	-1.40E-15	-3.43E-11	3.17E-07	1.31E-13	7.96E-05	1.11E-07	1.50E-04	8.90E-10	4.29E-04	1.70E-08	3.85E-08	5.51E-09	3.20E-04	6.32E-05	1.61E-13	2.56E-05	1.44E-07	1.23E-04	1.82E-08	1.52E-03	0.00E+00	0.00E+00
react	1077	9.913	3.26	5.83E-04	0.002	1	2.04E-18	6.61E-14	1.32E-06	1.14E-14	5.64E-05	1.11E-07	5.74E-05	8.90E-10	3.70E-04	1.70E-08	3.85E-08	3.90E-09	3.32E-04	4.74E-05	4.88E-13	2.56E-05	4.32E-07	4.11E-05	8.13E-09	1.35E-03	0.00E+00	0.00E+00
react	1078	9.813	1.81	4.71E-04	0.002	1	-2.92E-17	-8.77E-13	1.05E-06	1.76E-14	3.24E-05	1.11E-07	2.50E-05	8.90E-10	5.17E-04	1.70E-08	1.92E-08	3.91E-09	2.90E-04	3.68E-05	3.99E-13	2.56E-05	4.32E-07	4.11E-05	1.37E-07	1.52E-03	0.00E+00	0.00E+00
react	1079	4.025	4.84	-9.58E-05	6E-04	1	4.71E-14	5.02E-09	1.52E-05	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	4.09E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.10E-05	2.56E-05	1.44E-07	4.11E-05	2.73E-08	1.30E-04	0.00E+00	0.00E+00
react	1080	4.111	4.77	-7.90E-05	7E-04	1	4.49E-15	4.44E-10	1.15E-05	1.33E-08	2.41E-05	1.11E-07	2.50E-05	8.90E-10	3.85E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.02E-05	2.56E-05	7.20E-07	4.11E-05	1.82E-08	2.17E-04	0.00E+00	0.00E+00
react	1081	4.253	4.75	-5.61E-05	4E-04	1	-1.72E-16	-2.97E-11	6.48E-06	1.33E-08	1.76E-05	1.11E-07	2.50E-05	8.90E-10	2.69E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.16E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	4.35E-05	0.00E+00	0.00E+00
react	1082	4.127	4.71	-7.54E-05	5E-04	1	4.61E-17	6.00E-12	9.50E-06	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	3.64E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.66E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
react	1083	4.052	4.96	-9.00E-05	6E-04	1	2.03E-13	2.28E-08	1.31E-05	1.33E-08	2.59E-05	1.11E-07	2.50E-05	8.90E-10	4.06E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	1.43E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
react	1084	4.217	4.43	-6.14E-05	5E-04	1	9.42E-15	1.29E-09	7.31E-06	1.33E-08	1.85E-05	1.11E-07	2.50E-05	8.90E-10	3.23E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.88E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	8.70E-05	0.00E+00	0.00E+00
react	1085	3.857	4.73	-1.42E-04	1E-03	1	-8.08E-17	-5.49E-12	3.82E-05	3.34E-08	3.61E-05	1.11E-07	2.50E-05	8.90E-10	6.83E-04	1.70E-08	3.85E-08	1.57E-08	2.50E-05	5.26E-06	7.35E-05	5.12E-05	2.16E-07	4.11E-05	3.64E-08	1.52E-04	0.00E+00	0.00E+00
react	1086	4.292	3.33	-5.19E-05	9E-04	1	-2.38E-16	-1.85E-11	6.12E-06	1.33E-08	2.50E-05	1.11E-07	2.50E-05	8.90E-10	6.03E-04	5.09E-08	1.15E-07	6.29E-08	3.00E-05	5.26E-06	1.26E-04	5.12E-05	4.32E-07	4.11E-05	5.82E-07	1.31E-04	0.00E+00	0.00E+00
react	1087	4.003	4.73	-1.01E-04	7E-04	1	-6.94E-16	-6.88E-11	1.65E-05	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	4.65E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.25E-05	2.56E-05	2.88E-07	4.11E-05	2.18E-07	1.30E-04	0.00E+00	0.00E+00
react	1088	4.028	4.65	-9.53E-05	7E-04	1	1.29E-15	1.30E-10	1.51E-05	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	4.39E-04	1.70E-08	3.85E-08	3.15E-08	2.00E-05	5.26E-06	3.39E-05	2.56E-05	2.88E-07	4.11E-05	1.82E-07	1.30E-04	0.00E+00	0.00E+00
react	1089	4.214	4.34	-6.22E-05	7E-04	1	1.44E-14	1.32E-09	7.97E-06	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	4.27E-04	1.70E-08	1.92E-08	3.15E-08	2.00E-05	5.26E-06	2.24E-05	2.56E-05	2.88E-07	4.11E-05	7.28E-08	2.61E-04	0.00E+00	0.00E+00
react	1090	4.356	4.47	-4.81E-05	0.003	1	2.60E-18	7.88E-14	8.14E-06	1.33E-08	1.94E-05	1.11E-07	3.24E-04	8.90E-10	3.69E-04	8.49E-08	1.92E-08	3.15E-08	9.99E-06	5.26E-06	3.22E-06	2.56E-05	2.88E-07	1.65E-04	1.69E-06	6.53E-04	0.00E+00	0.00E+00
react	1091	6.244	-2.36	1.33E-05	0.002	1	2.78E-14	1.09E-09	1.03E-09	1.33E-08	1.94E-05	1.11E-07	2.25E-04	8.90E-10	4.66E-04	1.70E-08	1.92E-08	3.15E-08	3.00E-05	5.26E-06	7.24E-06	2.56E-05	1.44E-07	8.23E-05	4.00E-07	6.53E-04	0.00E+00	0.00E+00
react	1092	4.865	2.58	-1.25E-05	5E-04	1	3.96E-14	5.11E-09	3.14E-06	1.33E-08	3.52E-05	1.11E-07	2.50E-05	8.90E-10	3.20E-04	1.70E-08	1.92E-08	1.57E-08	3.00E-05	1.05E-05	1.51E-05	2.56E-05	1.44E-07	4.11E-05	1.82E-08	1.74E-04	0.00E+00	0.00E+00
react	1093	4.243	4.75	-5.77E-05	5E-04	1	7.23E-17	9.49E-12	6.90E-06	1.33E-08	2.68E-05	1.11E-07	2.50E-05	8.90E-10	3.20E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	7.70E-06	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
react	1094	4.237	4.7	-5.86E-05	5E-04	1	9.36E-16	1.12E-10	7.15E-06	1.33E-08	2.87E-05	1.11E-07	2.50E-05	8.90E-10	3.37E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	4.83E-06	2.56E-05	4.32E-07	4.11E-05	3.64E-08	1.74E-04	0.00E+00	0.00E+00
react	1095	4.5	4	-3.28E-05	0.001	1	1.70E-13	1.23E-08	3.34E-06	1.33E-08	1.39E-05	1.11E-07	1.25E-04	8.90E-10	2.08E-04	3.39E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	8.95E-07	2.56E-05	8.64E-07	8.23E-05	7.46E-07	2.18E-04	0.00E+00	0.00E+00
react	1096	4.214	4.6	-6.23E-05	6E-04	1	3.84E-16	4.54E-11	8.18E-06	1.33E-08	2.13E-05	1.11E-07	2.50E-05	8.90E-10	2.61E-04	1.70E-08	1.92E-08	1.57E-08	1.50E-05	5.26E-06	4.30E-06	2.56E-05	6.48E-07	4.11E-05	6.37E-08	1.74E-04	0.00E+00	0.00E+00

state	soln	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite
react	1047	5.11E-08	0.00E+00	1.01E-08	8.16E-05	0.00E+00	1.96E-07	1.37E-06	6.53E-29	2.13E-22	4.41E-16	2.66E-15	4.26E-29	6.60E-32	-2.83E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1048	1.70E-08	0.00E+00	5.94E-09	5.20E-05	0.00E+00	1.93E-07	5.51E-07	1.42E-27	4.49E-21	9.09E-15	5.38E-14	5.75E-28	5.60E-31	-2.70E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	6.82E-08	0.00E+00	1.93E-08	1.04E-05	0.00E+00	1.96E-07	1.76E-06	3.31E-13	1.45E-11	4.11E-10	3.43E-14	2.28E-14	3.90E-18	-1.26E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	4.09E-07	0.00E+00	6.76E-08	1.32E-04	0.00E+00	3.93E-07	4.96E-06	1.72E-18	2.14E-15	1.76E-12	4.35E-15	1.44E-18	3.25E-21	-1.79E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	2.04E-07	0.00E+00	4.83E-08	2.05E-04	0.00E+00	3.93E-07	4.53E-06	3.24E-14	3.23E-12	2.13E-10	4.25E-14	4.12E-14	1.44E-16	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	9.37E-08	0.00E+00	2.90E-08	1.75E-04	0.00E+00	1.96E-07	4.10E-06	6.15E-13	2.00E-11	4.30E-10	2.81E-14	5.54E-13	1.39E-15	-1.24E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	5.11E-08	0.00E+00	1.45E-08	1.76E-04	0.00E+00	1.96E-07	2.91E-06	2.11E-13	1.11E-11	3.78E-10	3.86E-14	2.42E-13	7.22E-16	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	1.70E-08	0.00E+00	4.83E-09	2.06E-04	0.00E+00	1.96E-07	5.35E-07	2.65E-27	6.21E-21	1.02E-14	5.38E-14	2.37E-27	7.34E-30	-2.69E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	1.70E-08	0.00E+00	3.13E-09	1.54E-04	0.00E+00	1.96E-07	3.76E-07	2.72E-30	6.59E-23	1.08E-15	5.38E-14	2.42E-30	6.33E-33	-2.98E+01	1.62E-05	1.62E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	5.11E-08	0.00E+00	2.18E-09	1.24E-04	0.00E+00	1.96E-07	4.40E-07	1.47E-31	9.47E-24	4.09E-16	5.38E-14	1.09E-31	2.34E-34	-3.10E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-06	3.77E-06	0.00E+00	0.00E+00	0.00E+00
react	1057	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	1.25E-06	2.12E-13	1.13E-11	3.84E-10	3.85E-14	1.57E-14	2.83E-18	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	1.70E-08	0.00E+00	1.93E-08	4.16E-05	0.00E+00	1.96E-07	2.63E-06	6.37E-13	2.13E-11	4.63E-10	3.01E-14	1.49E-13	9.11E-17	-1.23E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	1.70E-08	0.00E+00	2.90E-08	4.16E-05	0.00E+00	1.96E-07	4.30E-06	4.06E-13	1.19E-11	2.27E-10	1.30E-14	8.78E-14	4.97E-17	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	1.38E-06	0.00E+00	2.78E-09	5.92E-04	0.00E+00	1.94E-07	1.56E-06	6.71E-25	2.60E-19	6.75E-14	5.38E-14	2.22E-24	2.14E-26	-2.44E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	3.58E-07	0.00E+00	4.83E-09	2.70E-04	0.00E+00	1.96E-07	1.09E-06	9.66E-22	1.65E-17	1.83E-13	6.04E-15	1.81E-21	8.68E-24	-2.12E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	1.36E-07	0.00E+00	4.83E-09	3.21E-04	0.00E+00	1.96E-07	9.64E-07	3.47E-15	7.93E-13	1.19E-10	5.38E-14	7.21E-15	4.02E-17	-1.46E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	4.09E-07	0.00E+00	4.83E-09	1.73E-03	0.00E+00	1.96E-07	2.78E-06	2.47E-15	3.33E-13	3.23E-11	1.02E-14	1.52E-14	3.49E-16	-1.49E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	5.11E-08	0.00E+00	9.65E-09	8.86E-06	0.00E+00	1.96E-07	1.10E-06	2.63E-21	2.56E-17	1.57E-13	2.80E-15	1.95E-22	3.33E-26	-2.07E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	5.11E-08	0.00E+00	2.43E-09	2.08E-05	0.00E+00	1.96E-07	3.56E-07	5.06E-30	1.06E-22	1.41E-15	5.38E-14	8.92E-31	3.59E-34	-2.94E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	4.43E-07	0.00E+00	1.65E-09	1.41E-04	0.00E+00	1.96E-07	6.14E-07	1.37E-32	2.00E-24	1.90E-16	5.38E-14	1.33E-32	3.39E-35	-3.20E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	5.11E-08	0.00E+00	3.26E-09	8.29E-05	0.00E+00	1.96E-07	3.74E-07	3.29E-30	7.73E-23	1.18E-15	5.38E-14	1.92E-30	2.87E-33	-2.96E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	1.02E-07	0.00E+00	2.78E-09	1.66E-04	0.00E+00	1.96E-07	3.76E-07	1.28E-30	4.07E-23	8.53E-16	5.38E-14	1.40E-30	4.12E-33	-3.01E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	1.70E-08	0.00E+00	4.83E-09	2.60E-05	0.00E+00	1.96E-07	1.45E-06	1.70E-13	8.28E-12	2.59E-10	2.37E-14	3.15E-14	1.41E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	1.70E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	5.35E-07	3.04E-14	1.74E-12	6.37E-11	6.81E-15	1.88E-14	2.78E-17	-1.36E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	1.70E-08	0.00E+00	4.83E-09	6.25E-05	0.00E+00	1.96E-07	4.44E-07	6.04E-15	5.86E-13	3.62E-11	6.48E-15	3.02E-15	3.54E-18	-1.43E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	5.35E-07	1.25E-28	8.79E-22	4.00E-15	5.38E-14	1.86E-29	6.97E-33	-2.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	1.70E-08	0.00E+00	4.51E-09	1.03E-04	0.00E+00	1.96E-07	4.18E-07	2.39E-29	2.90E-22	2.29E-15	5.38E-14	1.71E-29	3.15E-32	-2.88E+01	8.73E-06	8.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	1.70E-08	0.00E+00	3.95E-09	7.27E-05	0.00E+00	1.96E-07	3.67E-07	1.55E-29	2.18E-22	1.99E-15	5.38E-14	7.91E-30	1.03E-32	-2.90E+01	2.24E-05	2.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	3.41E-08	0.00E+00	4.37E-09	3.40E-04	0.00E+00	1.96E-07	4.02E-07	1.22E-29	1.80E-22	1.78E-15	5.38E-14	2.44E-29	1.41E-31	-2.91E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.42E-05	2.42E-05	0.00E+00	0.00E+00	0.00E+00
react	1076	1.70E-08	0.00E+00	4.83E-09	5.91E-04	0.00E+00	1.96E-07	4.72E-07	4.48E-29	4.22E-22	2.70E-15	5.38E-14	1.41E-28	1.36E-30	-2.86E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	3.41E-08	0.00E+00	2.37E-09	2.89E-04	0.00E+00	1.96E-07	3.90E-07	5.58E-31	2.31E-23	6.39E-16	5.38E-14	9.78E-31	4.88E-33	-3.04E+01	1.75E-05	1.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	6.82E-08	0.00E+00	2.55E-09	3.31E-04	0.00E+00	1.96E-07	3.77E-07	1.13E-30	3.68E-23	8.05E-16	5.38E-14	2.24E-30	1.28E-32	-3.01E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	1.34E-06	1.53E-13	9.13E-12	3.49E-10	3.89E-14	3.57E-14	1.99E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	1.70E-08	0.00E+00	9.65E-09	6.25E-05	0.00E+00	1.96E-07	1.38E-06	6.43E-14	4.65E-12	2.15E-10	2.92E-14	3.03E-14	3.45E-17	-1.33E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	1.70E-08	0.00E+00	4.83E-09	1.04E-05	0.00E+00	1.96E-07	8.11E-07	4.16E-14	4.33E-12	2.84E-10	5.38E-14	3.61E-15	7.16E-19	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	1.70E-08	0.00E+00	9.65E-09	1.04E-05	0.00E+00	1.96E-07	2.26E-06	8.93E-14	6.85E-12	3.33E-10	4.71E-14	7.36E-15	1.42E-18	-1.31E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	1.68E-06	1.37E-13	8.73E-12	3.55E-10	4.21E-14	2.17E-14	8.19E-18	-1.30E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	1.70E-08	0.00E+00	4.83E-09	2.08E-05	0.00E+00	1.96E-07	9.94E-07	5.29E-14	4.99E-12	2.99E-10	5.19E-14	8.86E-15	3.46E-18	-1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	1.70E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	3.15E-06	4.35E-13	1.70E-11	4.32E-10	3.25E-14	8.45E-14	4.16E-17	-1.25E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	1.70E-07	0.00E+00	3.38E-08	2.08E-05	0.00E+00	1.96E-07	2.75E-06	2.96E-14	3.19E-12	2.22E-10	4.55E-14	4.43E-15	1.65E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	3.41E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	1.96E-06	1.86E-13	1.05E-11	3.80E-10	4.02E-14	2.84E-14	1.04E-17	-1.28E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	3.41E-08	0.00E+00	1.45E-08	3.12E-05	0.00E+00	1.96E-07	2.17E-06	1.62E-13	9.70E-12	3.72E-10	4.16E-14	3.74E-14	2.08E-17	-1.29E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	1.70E-08	0.00E+00	9.65E-09	6.25E-05	0.00E+00	1.96E-07	1.56E-06	5.19E-14	4.74E-12	2.78E-10	4.77E-14	2.45E-14	2.80E-17	-1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	1.19E-07	0.00E+00	4.83E-09	6.84E-04	0.00E+00	1.96E-07	1.04E-06	1.05E-14	1.16E-12	8.71E-11	2.02E-14	3.78E-14	4.12E-16	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	3.41E-08	0.00E+00	9.65E-09	4.13E-04	0.00E+00	1.96E-07	1.13E-06	3.52E-21	3.13E-17	1.86E-13	3.36E-15	8.64E-21	6.01E-23	-2.06E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	1.70E-08	0.00E+00	9.65E-09	3.12E-05	0.00E+00	1.96E-07	2.16E-06	5.97E-16	2.50E-13	6.65E-11	5.15E-14	1.51E-16	8.97E-20	-1.53E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	1.70E-08	0.00E+00	4.83E-09	3.12E-05	0.00E+00	1.96E-07	1.21E-06	4.51E-14	4.52E-12	2.87E-10	5.31E-14	1.13E-14	6.64E-18	-1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	1.70E-08	0.00E+00	4.83E-09	4.16E-05	0.00E+00	1.96E-07	5.66E-07	2.56E-14	2.51E-12	1.57E-10	2.85E-14	8.45E-15	6.58E-18	-1.37E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	6.82E-08	0.00E+00	4.83E-09	2.48E-04	0.00E+00	1.96E-07	1.70E-06	9.57E-16	1.63E-13	1.80E-11	5.93E-15	1.63E-15	7.21E-18	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	5.96E-08	0.00E+00	4.83E-09	8.33E-05	0.00E+00	1.96E-07	6.19E-07	1.78E-14	1.65E-12	9.74E-11	1.68E-14	1.16E-14	1.80E-17	-1.39E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.77E-06	8.77E-06	0.00E+00	0.00E+00	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.45E-06	6.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-05	1.56E-05	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-06	1.25E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.98E-06	6.98E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.42E-06	8.42E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.48E-07	4.48E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.23E-07	3.23E-07	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.15E-09	5.15E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-05	1.80E-05	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-05	2.79E-05	0.00E+00	0.00E+00	3.16E-06	3.16E-06	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.67E-05	9.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.15E-06	8.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.07E-06	7.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.40E-06	3.40E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-06	2.95E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-06	2.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.24E-06	8.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-06	1.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-05	1.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-05	1.20E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-09	2.94E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.82E-06	5.82E-06	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.30E-07	5.30E-07	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	Fe(VO3)2	d_Fe(VO3)2	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	1.67E-07	1.67E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	9.57E-06	9.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	3.63E-07	3.63E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	4.60E-08	4.60E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	6.66E-08	6.66E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	1.56E-08	1.56E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	3.98E-08	3.98E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	2.28E-08	2.28E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	6.97E-08	6.97E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	7.00E-06	7.00E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	1.18E-07	1.18E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	1.25E-07	1.25E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	1.37E-07	1.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	5.74E-10	5.74E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Al2O3	d_Al2O3	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite
react	1047	0.00E+00	0.00E+00	0.00E+00	1.08E-04	1.08E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	2.73E-05	2.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	1.17E-04	1.17E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	3.93E-04	3.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	2.47E-04	2.47E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	1.98E-04	1.98E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	6.86E-05	6.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	1.33E-05	1.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	4.55E-05	4.55E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.13E-09	6.13E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	4.65E-05	4.65E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.86E-08	2.86E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	7.17E-05	7.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	7.12E-05	7.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	6.98E-05	6.98E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	4.44E-06	4.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	7.04E-06	7.04E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	8.14E-06	8.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	1.22E-04	1.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	1.30E-04	1.30E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	3.89E-04	3.89E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	4.86E-05	4.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.51E-09	3.51E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	3.76E-05	3.76E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.51E-08	8.51E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	3.89E-05	3.89E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	2.21E-05	2.21E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	1.03E-05	1.03E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	2.91E-05	2.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	2.08E-05	2.08E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-09	1.11E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	1.70E-05	1.70E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	8.81E-05	8.81E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	2.82E-05	2.82E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	9.25E-05	9.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-08	2.76E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	5.75E-05	5.75E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-08	1.50E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	3.31E-05	3.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	2.67E-05	2.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	3.32E-05	3.32E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	5.98E-05	5.98E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	4.06E-05	4.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	3.60E-05	3.60E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	9.30E-05	9.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	2.40E-04	2.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	9.69E-05	9.69E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	9.01E-05	9.01E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	6.17E-05	6.17E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	1.15E-05	1.15E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	4.67E-05	4.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	5.91E-05	5.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	2.31E-05	2.31E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	2.06E-05	2.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	1.67E-05	1.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-06	1.09E-06	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.30E-06	3.30E-06	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.76E-06	2.76E-06	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E-06	1.59E-06	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.58E-07	9.58E-07	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.08E-06	2.08E-06	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.18E-06	2.18E-06	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.26E-07	9.26E-07	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.25E-06	1.25E-06	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.73E-07	9.73E-07	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E-06	1.30E-06	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-06	2.56E-06	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.84E-06	4.84E-06	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-07	3.47E-07	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.66E-07	6.66E-07	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.41E-07	6.41E-07	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-07	1.88E-07	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.43E-06	3.43E-06	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-06	2.83E-06	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.54E-06	2.54E-06	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E-06	2.20E-06	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.81E-06	2.81E-06	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.71E-06	2.71E-06	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.42E-06	1.42E-06	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Celestite	Anglesite	d_Anglesite	Ba3(AsO4)2	d_Ba3(AsO4)2	Halite	d_Halite	Fluorite	d_Fluorite	Cu(OH)2	d_Cu(OH)2	Tenorite	d_Tenorite	Brochantite	d_Brochantite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	CoFe2O4	d_CoFe2O4	Hercynite
react	1047	0.00E+00	0.00E+00	0.00E+00	6.64E-09	6.64E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	6.68E-09	6.68E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-09	2.94E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-08	1.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	4.00E-08	4.00E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.74E-08	2.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	2.00E-08	2.00E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.47E-08	6.47E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	1.33E-08	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.16E-08	1.16E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	1.33E-08	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-06	1.51E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.06E-09	9.06E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-08	1.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-08	1.14E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-08	1.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.74E-08	5.74E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	6.67E-09	6.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.91E-08	5.91E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	2.00E-08	2.00E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.18E-08	1.18E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hercynite	Spinel	d_Spinel	Magnesioferrite	d_Magnesioferrite	Minium	d_Minium	Zn(OH)2	d_Zn(OH)2	Zn(OH)2(am)	d_Zn(OH)2 (am)	Zn(OH)2(beta)	d_Zn(OH)2 (beta)	Zn(OH)2(epsilon)	d_Zn(OH)2 (epsilon)	Zn(OH)2(gamma)	d_Zn(OH)2 (gamma)	Zincite	d_Zincite	ZnO(active)	d_ZnO(active)	Be(OH)2(beta)
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.27E-08	3.27E-08	0.00E+00
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.36E-07	2.36E-07	0.00E+00
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-07	2.48E-07	0.00E+00
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-06	1.36E-06	0.00E+00
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.65E-06	3.65E-06	0.00E+00
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.69E-07	2.69E-07	0.00E+00
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.17E-07	8.17E-07	0.00E+00
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-08	1.00E-08	0.00E+00
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.30E-07	7.30E-07	0.00E+00
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-06	1.27E-06	0.00E+00
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-06	1.81E-06	0.00E+00
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.00E-07	8.00E-07	0.00E+00
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Be(OH)2 (beta)	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite
react	1047	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.998	-2.178	-3.6482	-4.1982	-2.8003	-11.2907	-5.5903	-6.7832	-19.198	-2.506	-10.416	-2.612	-3.386	0	-6.1312	-16.8192	-5.206
react	1048	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4071	-1.5871	-2.7675	-3.3175	-2.5105	-9.8305	-5.3005	-6.5114	-18.0568	-1.2	-7.804	0	-2.08	-1.436	-10.1792	-18.2552	-3.9
react	1049	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.7597	-9.9397	-19.1721	-19.7221	-10.5624	-42.3389	-13.3524	-24.2629	-59.9641	-1.3956	-8.1951	-0.3911	-2.2756	-1.6044	-9.9564	-18.4236	-4.0956
react	1050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.2758	-6.4558	-12.504	-13.054	-7.3782	-29.3023	-10.1682	-18.1514	-44.2999	-2.2925	-9.989	-2.185	-3.1725	0	-6.5582	-16.8193	-4.9925
react	1051	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.5523	-8.7323	-17.0557	-17.6057	-9.6534	-38.4046	-12.4435	-22.6188	-55.5931	-1.3025	-8.0089	-0.2049	-2.1825	-0.2929	-8.8312	-17.1121	-4.0025
react	1052	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8173	-9.9973	-19.2855	-19.8355	-10.6182	-42.5639	-13.4082	-24.5509	-60.4195	-1.4822	-8.3684	-0.5644	-2.3622	-1.7367	-9.9155	-18.5559	-4.1822
react	1053	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4261	-9.6061	-18.5026	-19.0526	-10.2265	-40.9977	-13.0165	-23.7669	-58.4604	-1.3447	-8.0934	-0.2894	-2.2247	-1.5351	-9.989	-18.3544	-4.0447
react	1054	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.3222	-0.5022	-0.7416	-1.2916	-1.5694	-5.9224	-4.3596	-5.0202	-13.7425	-1.2	-7.804	0	-2.08	-4.0989	-12.8422	-20.9183	-3.9001
react	1055	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.1694	-0.7194	-1.3194	-4.8502	-4.1095	-3.5135	-11.4857	-1.2	-7.804	0	-2.08	-5.7911	-14.5343	-22.6104	-3.9
react	1056	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.198	-0.378	0	-0.55	-0.952	-3.9461	-3.7421	-2.3793	-9.2494	-1.2	-7.804	0	-2.08	-4.448	-13.1912	-21.2673	-3.9
react	1057	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.5999	-9.7799	-18.8524	-19.4024	-10.4025	-41.6995	-13.1926	-23.9429	-59.1645	-1.346	-8.0961	-0.2921	-2.226	-1.408	-9.8591	-18.2272	-4.046
react	1058	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.984	-10.164	-19.6204	-20.1704	-10.7863	-43.235	-13.5764	-24.7111	-61.0841	-1.4527	-8.3093	-0.5053	-2.3327	-1.83	-10.0679	-18.6492	-4.1527
react	1059	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-10.0959	-10.2759	-19.844	-20.394	-10.8982	-43.6824	-13.6882	-24.935	-61.6436	-1.8174	-9.0389	-1.2349	-2.6974	-3.0137	-10.5221	-19.833	-4.5175
react	1060	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.313	-2.493	-4.687	-5.237	-3.524	-13.7769	-6.314	-8.6104	-23.1964	-1.2	-7.804	0	-2.08	-2.0497	-10.7929	-18.869	-3.9
react	1061	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.1324	-4.3124	-8.7591	-9.3091	-5.7767	-22.3545	-8.5667	-14.3012	-35.6452	-2.1497	-9.7034	-1.8994	-3.0297	0	-6.8438	-16.8192	-4.8497
react	1062	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.6303	-7.8103	-15.0061	-15.5561	-8.5258	-34.0996	-11.3158	-20.1825	-49.7739	-1.2	-7.804	0	-2.08	-0.9438	-9.687	-17.7631	-3.9
react	1063	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.0809	-7.2609	-14.3306	-14.8806	-8.3997	-33.1721	-11.1898	-19.9327	-49.1459	-1.9229	-9.2498	-1.4458	-2.8029	-3.1666	-10.464	-19.9859	-4.623
react	1064	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-5.0383	-5.2183	-9.7297	-10.2797	-5.8413	-23.4543	-8.6313	-14.8764	-36.4144	-2.4841	-10.3722	-2.5682	-3.3641	0	-6.175	-16.8192	-5.1841
react	1065	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.3282	-1.5082	-2.3125	-2.8625	-2.1343	-8.623	-4.9243	-4.5129	-14.9297	-1.2	-7.804	0	-2.08	0	-8.7432	-16.8192	-3.9
react	1066	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.341	-0.521	-0.6616	-1.2116	-1.4707	-5.645	-4.2607	-2.174	-10.6	-1.2	-7.804	0	-2.08	-0.5077	-9.2509	-17.3269	-3.9
react	1067	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.0732	-0.2532	-0.2688	-0.8188	-1.3456	-5.0021	-4.1356	-3.6033	-11.6542	-1.2	-7.804	0	-2.08	-4.6626	-13.4058	-21.4819	-3.9
react	1068	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.4221	-0.6021	-0.4861	-1.0361	-1.214	-4.9561	-4.0041	-3.2047	-10.8608	-1.2	-7.804	0	-2.08	-3.8667	-12.6099	-20.6859	-3.9
react	1069	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6782	-9.8582	-19.0089	-19.5589	-10.4807	-42.0122	-13.2707	-24.0993	-59.5552	-1.5568	-8.5176	-0.7136	-2.4368	-2.3493	-10.3789	-19.1686	-4.2568
react	1070	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.8475	-10.0275	-19.3466	-19.8966	-10.6491	-42.6868	-13.4391	-24.1348	-60.0961	-2.098	-9.6	-1.796	-2.978	-3.7169	-10.6641	-20.5361	-4.798
react	1071	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.3963	-9.5763	-18.4443	-18.9943	-10.1981	-40.8824	-12.9881	-23.2314	-57.8395	-2.1193	-9.6426	-1.8386	-2.9993	-3.8506	-10.7552	-20.6698	-4.8193
react	1072	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.1478	-0.3278	-0.8491	-1.3991	-1.8513	-6.5937	-4.6413	-5.1471	-14.715	-1.2	-7.804	0	-2.08	-3.3207	-12.0639	-20.1399	-3.9
react	1073	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.5864	-1.1364	-1.7364	-6.1013	-4.5265	-4.5579	-13.7813	-1.2	-7.804	0	-2.08	-5.369	-14.1122	-22.1882	-3.9
react	1074	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.5588	-1.1088	-1.7088	-6.0183	-4.4988	-4.4049	-13.5453	-1.2	-7.804	0	-2.08	-5.8921	-14.6353	-22.7114	-3.9
react	1075	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.018	-0.198	0	-0.55	-1.132	-4.3061	-3.9221	-3.3815	-10.7916	-1.2	-7.804	0	-2.08	-5.4191	-14.1623	-22.2384	-3.9
react	1076	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.1108	-0.2908	-0.1666	-0.7166	-1.2058	-4.6202	-3.9959	-3.7366	-11.368	-1.2	-7.804	0	-2.08	-5.5003	-14.2435	-22.3196	-3.9
react	1077	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	-0.18	-0.0026	-0.5526	-1.1526	-4.3498	-3.9427	-2.9106	-10.3825	-1.2	-7.804	0	-2.08	-5.6733	-14.4165	-22.4926	-3.9
react	1078	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-0.4822	-0.6622	-0.6074	-1.1574	-1.2752	-5.1999	-4.0653	-3.2289	-11.0686	-1.2	-7.804	0	-2.08	-4.1193	-12.8626	-20.9386	-3.9
react	1079	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.807	-9.987	-19.2664	-19.8164	-10.6094	-42.5271	-13.3994	-24.0553	-59.8974	-1.3414	-8.0868	-0.2828	-2.2214	-1.7849	-10.2452	-18.6041	-4.0414
react	1080	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6412	-9.8212	-18.9343	-19.4843	-10.443	-41.8623	-13.2331	-23.7222	-59.0653	-1.4656	-8.3352	-0.5312	-2.3456	-2.1796	-10.3915	-18.9988	-4.1656
react	1081	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.0401	-9.2201	-17.7328	-18.2828	-9.8427	-39.4603	-12.6327	-22.8216	-56.3638	-1.2	-7.804	0	-2.08	-1.5005	-10.2437	-18.3197	-3.9
react	1082	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.2964	-9.4764	-18.2455	-18.7955	-10.0991	-40.4856	-12.8891	-23.3352	-57.6464	-1.2579	-7.9197	-0.1157	-2.1379	-1.508	-10.1355	-18.3272	-3.9579
react	1083	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4513	-9.6313	-18.5551	-19.1051	-10.2538	-41.1046	-13.0438	-23.645	-58.4203	-1.3069	-8.0177	-0.2137	-2.1869	-1.8259	-10.3553	-18.6451	-4.0069
react	1084	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.4194	-9.5994	-18.4913	-19.0413	-10.2219	-40.9771	-13.0119	-23.2792	-57.9588	-1.2156	-7.8352	-0.0312	-2.0956	-1.1916	-9.9036	-18.0108	-3.9156
react	1085	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.7567	-9.9367	-19.1657	-19.7157	-10.5591	-42.3259	-13.3491	-24.3533	-60.0445	-1.4194	-8.2429	-0.4389	-2.2994	-1.7449	-10.0492	-18.5641	-4.1194
react	1086	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.806	-8.986	-17.2645	-17.8145	-9.6085	-38.5236	-12.3985	-22.5289	-55.3684	-1.273	-7.9501	-0.1461	-2.153	-0.343	-8.9402	-17.1623	-3.973
react	1087	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.5515	-9.7315	-18.7556	-19.3056	-10.354	-41.5056	-13.144	-23.8457	-58.9218	-1.3266	-8.0572	-0.2532	-2.2066	-1.6106	-10.1006	-18.4299	-4.0266
react	1088	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.5022	-9.6822	-18.6568	-19.2068	-10.3046	-41.3079	-13.0946	-23.7467	-58.6743	-1.3114	-8.0268	-0.2228	-2.1914	-1.5122	-10.0326	-18.3314	-4.0114
react	1089	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.1359	-9.3159	-17.9236	-18.4736	-9.9377	-39.8411	-12.7278	-23.0119	-56.8392	-1.2521	-7.9082	-0.1042	-2.1321	-1.2058	-9.8449	-18.0251	-3.9521
react	1090	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1214	-8.3014	-16.3999	-16.9499	-9.4285	-37.2988	-12.2185	-21.691	-53.9904	-1.6253	-8.6546	-0.8506	-2.5053	-2.5986	-10.4912	-19.4179	-4.3253
react	1091	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.2568	-4.4368	-8.8145	-9.3645	-5.7078	-22.2721	-8.4978	-14.4708	-35.6081	-2.4045	-10.2129	-2.4089	-3.2845	0	-6.3343	-16.8193	-5.1045
react	1092	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.6579	-7.8379	-14.9683	-15.5183	-8.4604	-33.931	-11.2504	-20.2222	-49.6174	-1.2196	-7.8432	-0.0392	-2.0996	0	-8.704	-16.8192	-3.9196
react	1093	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.0664	-9.2464	-17.785	-18.335	-9.8687	-39.5644	-12.6587	-22.8736	-56.4936	-1.206	-7.816	-0.012	-2.086	-1.5075	-10.2387	-18.3268	-3.906
react	1094	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.0819	-9.2619	-17.816	-18.366	-9.8841	-39.6262	-12.6741	-22.9044	-56.5706	-1.476	-8.3559	-0.5519	-2.356	-2.2653	-10.4566	-19.0845	-4.176
react	1095	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1948	-8.3748	-16.437	-16.987	-9.3921	-37.2632	-12.1822	-21.6166	-53.807	-2.1582	-9.7205	-1.9165	-3.0382	-3.8726	-10.6993	-20.6918	-4.8582
react	1096	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.2586	-9.4386	-18.1687	-18.7187	-10.0601	-40.3309	-12.8501	-23.1317	-57.326	-1.7066	-8.8172	-1.0132	-2.5866	-2.83	-10.56	-19.6492	-4.4066

state	soln	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Al2O3	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite
react	1047	-2.7383	-26.9539	-37.2615	-32.9982	-30.4069	-17.1429	-11.5552	-16.8663	-3.927	-1.418	-1.705	0	-5.9064	-23.716	-11.2602	-22.3748	-4.6984	-21.8959	-2.2617	-4.189	-4.439	-6.4548
react	1048	-1.3752	-10.4675	-33.7136	-29.3919	-26.8676	-17.5215	-11.7403	-17.0513	-3.927	-1.418	-1.705	0	-5.9064	-13.3269	-6.2251	-12.6234	-5.0173	-11.8256	-2.2728	-4.0908	-4.3408	-6.6577
react	1049	0	-11.0494	-16.415	-17.3121	-14.4199	-4.4871	-2.7976	-8.1087	-3.927	-1.418	-1.705	0	-5.9064	-22.5246	-15.0044	-38.5431	-13.3783	-29.3843	-8.9862	-5.1485	-5.3984	-7.4147
react	1050	-1.3116	-24.2166	-22.7675	-21.7675	-18.8242	-6.2007	-4.6285	-9.9396	-3.927	-1.418	-1.705	0	-5.9064	-28.6398	-16.8246	-39.7085	-10.9033	-33.0247	-6.2543	-3.7523	-4.0023	-6.3183
react	1051	0	-13.438	-15.051	-15.0066	-12.3777	-2.7242	-2.2553	-7.5663	-3.927	-1.418	-1.705	0	-5.9064	-24.5221	-15.9698	-40.4072	-13.3115	-31.3152	-8.7456	-3.5725	-3.8225	-6.1372
react	1052	0	-11.5224	-13.9432	-14.4032	-11.7541	-1.5614	-1.4317	-6.7428	-3.927	-1.418	-1.705	0	-5.9064	-23.5841	-15.9363	-41.2111	-14.1825	-31.2481	-9.614	-4.0166	-4.2666	-6.281
react	1053	0	-10.7463	-14.1367	-14.4245	-12.0553	-2.2752	-1.7348	-7.0458	-3.927	-1.418	-1.705	0	-5.9064	-23.4089	-15.9722	-41.5298	-14.4294	-31.3198	-9.8616	-3.9277	-4.1777	-6.1917
react	1054	-1.0455	-12.7275	-32.585	-27.3614	-25.7914	-16.4453	-11.1759	-16.487	-3.9271	-1.4181	-1.705	0	-5.9063	-8.6359	-4.1971	-9.2023	-5.6522	-7.7696	-2.517	-2.8324	-3.0823	-5.5434
react	1055	-1.458	-17.871	-36.6094	-30.6047	-28.837	-19.4909	-13.1881	-18.4992	-3.927	-1.418	-1.705	0	-5.9064	-3.3123	-0.5656	0	-3.7129	-0.5066	-1.5843	-3.5158	-3.7657	-6.2988
react	1056	-1.651	-18.1624	-38.4597	-32.0576	-30.2668	-20.9207	-14.1133	-19.4244	-3.927	-1.418	-1.705	0	-5.9064	-5.1031	-1.0133	0	-2.8175	-1.402	-1.0884	-4.2394	-4.4894	-6.4571
react	1057	0	-11.1383	-16.5305	-17.5249	-14.4565	-4.6724	-2.9297	-8.2407	-3.927	-1.418	-1.705	0	-5.9064	-22.9107	-15.3428	-39.5103	-13.6688	-30.061	-9.2771	-5.1204	-5.3704	-7.3865
react	1058	0	-10.9546	-15.056	-16.0624	-12.8691	-2.7652	-2.0325	-7.3436	-3.927	-1.418	-1.705	0	-5.9064	-23.4124	-15.9466	-41.4241	-14.3749	-31.2687	-9.9824	-4.608	-4.858	-6.8738
react	1059	-0.338	-11.0652	-15.9944	-16.9314	-13.687	-2.4886	-1.9545	-7.2655	-3.927	-1.418	-1.705	0	-5.9064	-24.0862	-16.7098	-43.8031	-15.2274	-32.7951	-10.8349	-4.642	-4.8919	-6.9078
react	1060	-1.3006	-8.6977	-28.282	-25.0754	-22.3084	-12.9624	-9.0245	-14.3355	-3.927	-1.418	-1.705	0	-5.9064	-12.0166	-5.5285	-11.1475	-4.9345	-10.4325	-2.1181	-2.3528	-2.6028	-5.0274
react	1061	-1.8305	-23.3906	-26.1762	-24.4768	-21.5847	-9.3896	-6.5471	-11.8581	-3.927	-1.418	-1.705	0	-5.9064	-24.0231	-12.6363	-27.572	-7.1434	-24.648	-3.1416	-2.8803	-3.1303	-5.9881
react	1062	-0.1792	-11.0628	-15.7518	-15.7916	-13.0245	-3.6785	-2.7594	-8.0704	-3.927	-1.418	-1.705	0	-5.9064	-20.3637	-12.7698	-31.7654	-11.0698	-24.9151	-6.6848	-2.9737	-3.2237	-5.3327
react	1063	-0.8429	-11.6243	-16.141	-16.1629	-13.5724	-2.1857	-1.9122	-7.3513	-3.9697	-1.4607	-1.7477	-0.0427	-5.9917	-20.0591	-12.5192	-31.0675	-10.8732	-24.4138	-6.4861	-1.5366	-1.7866	-4.3191
react	1064	-1.8955	-26.7347	-28.9794	-27.548	-24.6557	-11.4575	-7.447	-12.7581	-3.927	-1.418	-1.705	0	-5.9064	-27.9479	-15.5578	-35.3335	-9.0618	-30.4912	-4.6141	-5.1321	-5.3821	-7.3987
react	1065	-1.7052	-13.9457	-37.7116	-32.9477	-30.0553	-20.7093	-13.7393	-19.0503	-3.927	-1.418	-1.705	0	-5.9064	-13.3604	-4.8226	-6.9801	-2.1788	-9.0208	-0.6805	-4.7649	-5.0149	-7.0344
react	1066	-1.9606	-15.5001	-39.6208	-33.2603	-30.6176	-21.2716	-14.6939	-20.0049	-3.927	-1.418	-1.705	0	-5.9064	-11.1696	-3.1395	-2.4385	-1.0034	-5.6545	-0.5168	-3.7205	-3.9705	-6.3138
react	1067	-1.6409	-16.4992	-36.8966	-31.3887	-29.165	-19.819	-13.3318	-18.6428	-3.927	-1.418	-1.705	0	-5.9064	-4.8169	-0.9417	0	-2.9606	-1.259	-0.7945	-3.7701	-4.0201	-6.506
react	1068	-1.6434	-16.2839	-36.887	-31.0034	-29.0138	-19.6677	-13.327	-18.638	-3.927	-1.418	-1.705	0	-5.9064	-5.8782	-1.2071	0	-2.4299	-1.7896	-0.3993	-3.9787	-4.2287	-6.2342
react	1069	-0.2167	-10.4334	-16.2145	-17.1512	-14.1798	-3.7633	-2.4555	-7.7665	-3.927	-1.418	-1.705	0	-5.9064	-22.8031	-15.5442	-40.4235	-14.1792	-30.4638	-9.7873	-4.7247	-4.9747	-6.9906
react	1070	-0.8308	-11.7311	-17.0704	-17.8601	-14.9679	-2.9279	-2.0717	-7.3827	-3.927	-1.418	-1.705	0	-5.9064	-22.3789	-14.864	-38.1272	-13.2432	-29.1036	-9.1526	-4.2089	-4.4589	-6.474
react	1071	-0.942	-11.5386	-18.2298	-18.795	-15.9028	-3.7988	-2.6194	-7.9304	-3.927	-1.418	-1.705	0	-5.9064	-22.4399	-14.9948	-38.5893	-13.4437	-29.3651	-9.3544	-4.304	-4.5539	-6.5693
react	1072	-1.4735	-13.1668	-35.9791	-31.6693	-28.7769	-19.4309	-12.873	-18.1841	-3.927	-1.418	-1.705	0	-5.9064	-8.3786	-3.1615	-5.3174	-3.8384	-5.6985	-1.14	-3.9183	-4.1683	-7.0854
react	1073	-1.577	-16.1113	-35.5692	-30.8928	-28.1254	-18.7794	-12.6681	-17.9791	-3.927	-1.418	-1.705	0	-5.9064	-3.8751	-0.7063	0	-3.4315	-0.788	-1.0924	-3.2061	-3.4561	-6.4061
react	1074	-1.5743	-16.8608	-36.1164	-31.3781	-28.6106	-19.2646	-12.9417	-18.2527	-3.927	-1.418	-1.705	0	-5.9064	-3.2975	-0.6518	-0.3599	-3.9002	-0.6792	-1.6588	-3.3821	-3.6321	-6.5544
react	1075	-1.5285	-16.6459	-35.0403	-29.459	-27.4874	-18.1413	-12.4036	-17.7147	-3.927	-1.418	-1.705	0	-5.9064	-3.8773	-0.7586	-0.2072	-3.534	-0.8927	-1.1626	-2.992	-3.2419	-5.5696
react	1076	-1.4741	-16.0881	-33.8816	-28.336	-26.5107	-17.1647	-11.8243	-17.1353	-3.927	-1.418	-1.705	0	-5.9064	-4.6897	-1.6522	-2.9689	-4.5086	-2.6798	-1.9297	-2.7131	-2.963	-5.2717
react	1077	-1.6789	-18.6164	-36.9452	-30.8254	-28.9468	-19.6008	-13.3561	-18.6671	-3.927	-1.418	-1.705	0	-5.9064	-3.4693	-0.6048	0	-3.6343	-0.5852	-1.775	-3.4144	-3.6644	-6.0306
react	1078	-1.6055	-16.676	-36.4286	-30.3565	-28.5309	-19.1848	-13.0978	-18.4088	-3.927	-1.418	-1.705	0	-5.9064	-5.5413	-1.1228	0	-2.5984	-1.6211	-0.666	-3.7113	-3.9613	-5.968
react	1079	-0.0381	-9.9692	-15.7194	-16.4908	-13.5985	-3.8283	-2.5311	-7.8421	-3.927	-1.418	-1.705	0	-5.9064	-23.2201	-16.0429	-42.0015	-14.7597	-31.4613	-10.6692	-4.6276	-4.8776	-6.8935
react	1080	-0.1959	-10.0228	-15.815	-16.2799	-13.6095	-3.4666	-2.3926	-7.7036	-3.927	-1.418	-1.705	0	-5.9064	-23.1853	-16.0302	-41.9854	-14.7691	-31.4358	-10.679	-4.3229	-4.5728	-6.5882
react	1081	-0.0191	-9.4	-17.1066	-18.1246	-14.7552	-5.4092	-3.4368	-8.7478	-3.927	-1.418	-1.705	0	-5.9064	-22.6487	-15.6114	-40.847	-14.4682	-30.5984	-10.078	-5.066	-5.316	-7.3322
react	1082	0	-9.9578	-16.8006	-17.6449	-14.5766	-5.057	-3.197	-8.508	-3.927	-1.418	-1.705	0	-5.9064	-23.2385	-16.0351	-41.9519	-14.7257	-31.4457	-10.3347	-5.0835	-5.3334	-7.3496
react	1083	-0.0123	-9.5043	-16.0623	-16.807	-13.9148	-4.2482	-2.7543	-8.0654	-3.927	-1.418	-1.705	0	-5.9064	-22.751	-15.7185	-41.173	-14.58	-30.8125	-10.1886	-4.7961	-5.0461	-7.0621
react	1084	0	-10.4791	-16.4185	-17.1733	-14.105	-4.7122	-3.0693	-8.3804	-3.927	-1.418	-1.705	0	-5.9064	-23.4388	-16.0458	-41.7944	-14.5468	-31.4671	-10.4574	-4.7771	-5.0271	-7.0431
react	1085	0	-10.8722	-15.3909	-16.2664	-13.1401	-3.1358	-2.2498	-7.5608	-3.927	-1.418	-1.705	0	-5.9064	-23.9927	-16.5414	-43.2231	-14.9842	-32.4584	-10.4951	-4.6946	-4.9446	-6.9605
react	1086	0	-13.5954	-16.9335	-17.4402	-14.2469	-4.6818	-3.2407	-8.5517	-3.927	-1.418	-1.705	0	-5.9064	-23.8396	-15.4258	-38.9134	-12.9059	-30.227	-8.34	-4.8116	-5.0615	-7.0776
react	1087	0	-10.3411	-15.949	-16.7432	-13.8509	-4.1251	-2.6681	-7.9791	-3.927	-1.418	-1.705	0	-5.9064	-22.6226	-15.3156	-39.6897	-13.9026	-30.0066	-9.5109	-4.8103	-5.0603	-7.0763
react	1088	0	-10.4816	-15.6447	-16.4138	-13.5216	-3.8414	-2.5388	-7.8498	-3.927	-1.418	-1.705	0	-5.9064	-22.7578	-15.398	-39.8841	-13.9322	-30.1714	-9.5406	-4.6316	-4.8815	-6.8974
react	1089	0	-10.8007	-15.5819	-15.8646	-13.2734	-3.7711	-2.5963	-7.9073	-3.927	-1.418	-1.705	0	-5.9064	-23.0447	-15.5565	-40.2312	-13.9622	-30.4884	-9.5718	-4.3216	-4.5716	-6.587
react	1090	-0.4386	-10.3551	-15.3166	-15.0723	-12.8794	-2.2574	-1.9038	-7.2149	-3.927	-1.418	-1.705	0	-5.9064	-20.9265	-13.7114	-34.969	-12.3903	-26.7982	-8.3022	-2.3123	-2.5622	-5.0829
react	1091	-1.7526	-25.9385	-25.5949	-23.4585	-21.2654	-8.306	-5.8742	-11.1852	-3.927	-1.418	-1.705	0	-5.9064	-27.6227	-15.4715	-35.3133	-9.2143	-30.3185	-4.905	-2.6393	-2.8892	-5.5538
react	1092	-0.2	-14.09	-18.661	-18.4664	-15.6991	-6.2943	-4.1846	-9.4956	-3.927	-1.418	-1.705	0	-5.9064	-24.5505	-15.9539	-40.3151	-13.2513	-31.2833	-8.6958	-4.5969	-4.8469	-6.863
react	1093	0	-9.4393	-16.1426	-16.6946	-13.8024	-4.4383	-2.9458	-8.2568	-3.927	-1.418	-1.705	0	-5.9064	-22.396	-15.3477	-40.0448	-14.1934	-30.0709	-9.8032	-4.6013	-4.8513	-6.8672
react	1094	-0.2611	-9.8649	-16.6804	-17.1144	-14.3471	-4.1732	-2.8097	-8.1207	-3.927	-1.418	-1.705	0	-5.9064	-22.5158	-15.4154	-40.1957	-14.209	-30.2062	-9.8187	-4.4809	-4.7309	-6.7466
react	1095	-1.0869	-11.8594	-18.2736	-18.3532	-15.683	-4.2481	-2.8449	-8.9418	-4.189	-1.68	-1.967	-0.262	-6.4303	-21.5893	-14.0494	-35.6583	-12.4035	-27.4743	-8.3171	-3.0631	-3.3131	-5.724
react	1096	-0.5185	-10.4761	-16.6815	-17.1396	-14.3723	-3.5065	-2.4643	-7.7754	-3.927	-1.418	-1.705	0	-5.9064	-22.5785	-15.3509	-39.875	-14.0172	-30.0772	-9.7517	-4.1875	-4.4374	-6.4525

state	soln	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite
react	1047	-10.2176	-12.0165	-65.2704	-9.5069	-9.402	-14.8393	-13.7457	-14.3995	-22.4166	-5.6645	-2.1489	-2.0573	-24.8278	-39.9634	-3.3112	-6.3559	-3.7359	-999.999	-999.999	0	-999.999	-5.7182
react	1048	-10.286	-16.2495	-63.2135	-10.2051	-10.1002	-15.0495	-14.2496	-14.9148	-12.1956	-9.4047	-2.1714	-2.0634	-3.7082	-8.1301	-2.686	-6.5614	-3.4534	-999.999	-999.999	-0.1812	-999.999	-6.2171
react	1049	-11.7809	-7.0841	-36.7767	-10.2826	-10.1777	-15.2542	-13.668	-14.8406	-9.7255	-7.5343	-9.3922	-8.2305	-15.0056	-24.2524	-10.7099	-13.9339	-10.9531	-999.999	-999.999	-1.1058	-999.999	-5.0892
react	1050	-9.8177	-5.5168	-44.0632	-8.4087	-8.3038	-13.4609	-13.024	-13.2956	-12.3152	-3.8792	-5.7593	-4.5171	-16.2662	-26.0149	-7.5426	-9.9721	-7.072	-999.999	-999.999	0	-999.999	-3.4636
react	1051	-9.3555	-5.4165	-34.9635	-8.5291	-8.4242	-13.8546	-13.0589	-13.1546	-8.3811	-6.2353	-8.0748	-6.9408	-13.2276	-21.4985	-9.8062	-12.5488	-9.922	-999.999	-999.999	0	-999.999	-3.4309
react	1052	-9.541	-5.6773	-32.8523	-9.0116	-8.9067	-14.0567	-13.1063	-13.3412	-8.545	-7.3169	-9.0823	-8.1253	-15.1999	-24.4557	-10.7775	-13.8523	-10.9451	-999.999	-999.999	0	-999.999	-3.7945
react	1053	-9.4995	-6.0538	-33.4865	-9.1853	-9.0804	-14.2086	-13.6563	-13.4012	-8.6287	-7.3911	-8.8399	-8.0321	-14.762	-23.7991	-10.3721	-13.7236	-10.7946	-999.999	-999.999	0	-999.999	-4.0037
react	1054	-7.9184	-18.3484	-61.5204	-9.8136	-9.7087	-14.6465	-14.3201	-14.4943	-10.9951	-11.6769	-1.9245	-1.9639	-2.0448	-5.4396	-2.539	-6.3432	-3.224	-999.999	-999.999	0	-999.999	-5.944
react	1055	-8.3681	-22.0526	-67.5571	-10.4561	-10.3513	-15.3374	-14.3931	-16.0324	-13.0073	-14.3757	-2.457	-2.3654	-3.0515	-7.4529	-1.8547	-5.9803	-2.9093	-999.999	-999.999	0	-999.999	-7.3511
react	1056	-8.4983	-21.6347	-70.3326	-10.6908	-10.5859	-16.0919	-14.4229	-16.9576	-13.9324	-13.4321	-2.8565	-2.7649	-3.4509	-8.2519	-1.751	-5.6893	-3.1381	-999.999	-999.999	0	-999.999	-8.2763
react	1057	-12.1075	-7.1189	-37.0738	-10.8565	-10.7516	-15.7026	-14.0906	-14.9593	-9.8242	-7.4374	-9.3792	-8.3702	-14.9392	-24.1528	-10.5463	-14.376	-11.2698	-999.999	-999.999	-1.2314	-999.999	-5.3607
react	1058	-11.2343	-6.4305	-34.5956	-10.3441	-10.2392	-15.1915	-13.8995	-14.1254	-9.7851	-7.6455	-9.4417	-8.4582	-16.6546	-26.7256	-10.9384	-14.7601	-11.6552	-999.999	-999.999	-0.3605	-999.999	-4.5521
react	1059	-11.0177	-6.8066	-35.0911	-10.3782	-10.2733	-15.2257	-14.674	-13.9462	-9.5164	-8.0995	-9.3404	-8.3945	-16.2732	-26.1535	-11.0522	-14.872	-11.7673	-999.999	-999.999	-0.2756	-999.999	-4.4106
react	1060	-9.8005	-14.1475	-55.0661	-7.2948	-7.1899	-13.3551	-11.451	-13.2395	-9.7368	-9.9465	-3.14	-3.1832	-4.1502	-8.7572	-4.3604	-6.2948	-4.4028	-999.999	-999.999	0	-999.999	-4.6931
react	1061	-10.3373	-7.7209	-49.5332	-8.1372	-8.0323	-13.1301	-11.1826	-13.627	-13.3984	-4.812	-4.8194	-4.0943	-15.2428	-24.8032	-5.9082	-8.4293	-5.4698	-999.999	-999.999	0	-999.999	-4.3122
react	1062	-10.0281	-6.7765	-36.2709	-8.5028	-8.3979	-13.3505	-11.3213	-13.6249	-8.8766	-7.2721	-8.2219	-7.4187	-13.3913	-21.8345	-9.2642	-12.1994	-9.0947	-999.999	-999.999	0	-999.999	-4.2321
react	1063	-9.1027	-6.6637	-35.0472	-7.5274	-7.4225	-12.221	-10.2348	-12.6703	-8.3682	-8.0469	-8.155	-7.859	-14.1521	-22.9745	-9.661	-12.1116	-8.8529	-999.999	-999.999	0	-999.999	-3.7847
react	1064	-11.7734	-7.9521	-52.902	-10.3917	-10.2869	-15.7139	-14.001	-15.1425	-17.8005	-3.6973	-4.989	-5.3164	-21.8012	-34.4179	-7.587	-9.3379	-6.7077	-999.999	-999.999	-1.0787	-999.999	-6.8802
react	1065	-11.4005	-16.8125	-69.2105	-10.4833	-10.3784	-15.607	-13.4102	-16.5836	-14.4156	-9.2148	-3.0872	-2.9956	-5.3961	-11.285	-2.4277	-6.0867	-3.2579	-999.999	-999.999	-0.4724	-999.999	-7.9023
react	1066	-9.162	-18.2749	-72.0743	-10.2528	-10.1479	-16.128	-13.1894	-17.5382	-14.5129	-10.7342	-4.0989	-4.0073	-4.6934	-10.7367	-2.39	-5.9132	-3.8361	-999.999	-999.999	0	-999.999	-8.8569
react	1067	-9.5052	-21.0676	-67.988	-10.1509	-10.046	-15.5038	-13.7844	-16.1761	-13.1508	-13.2097	-2.4195	-2.3279	-3.0139	-7.3778	-1.8291	-5.494	-2.8945	-999.999	-999.999	0	-999.999	-7.4947
react	1068	-8.7491	-20.2669	-67.9736	-9.7435	-9.6386	-15.1161	-13.249	-16.1713	-13.146	-12.5492	-2.555	-2.4634	-3.1494	-7.6488	-1.7879	-5.2268	-2.6471	-999.999	-999.999	0	-999.999	-7.4899
react	1069	-11.518	-7.1644	-36.0729	-10.4606	-10.3557	-15.3066	-14.1268	-14.4996	-9.8997	-7.957	-9.3935	-8.75	-16.0383	-25.8015	-10.6223	-14.4541	-11.3478	-999.999	-999.999	-1.0304	-999.999	-5.2664
react	1070	-10.8401	-7.0659	-36.0038	-9.9441	-9.8392	-14.79	-12.807	-14.4171	-9.3873	-8.5435	-9.9961	-8.9219	-16.0826	-26.0186	-10.7863	-14.6227	-11.5163	-999.999	-999.999	-0.1858	-999.999	-4.7533
react	1071	-10.9389	-7.7046	-37.6896	-10.0393	-9.9344	-14.8848	-13.5552	-14.5939	-9.4854	-8.6359	-9.6265	-8.4688	-15.1847	-24.6724	-10.3334	-14.1715	-11.0647	-999.999	-999.999	-0.4908	-999.999	-4.8465
react	1072	-11.4425	-19.267	-66.6118	-10.7952	-10.6903	-15.619	-14.2035	-15.7474	-12.6921	-11.3354	-1.9172	-2.0084	-2.4816	-6.3131	-2.1191	-6.0647	-2.9361	-999.999	-999.999	-0.5352	-999.999	-7.2489
react	1073	-10.5044	-21.1103	-65.997	-10.229	-10.1241	-15.086	-13.5917	-15.5124	-12.4871	-13.7432	-2.2466	-2.155	-2.841	-7.0319	-2.0514	-6.0628	-2.9675	-999.999	-999.999	0	-999.999	-6.8311
react	1074	-10.6541	-21.9071	-66.8178	-10.4178	-10.3129	-15.2872	-14.334	-15.8205	-12.7607	-14.364	-2.3787	-2.2526	-2.9386	-7.2273	-2.0405	-6.0757	-2.9928	-999.999	-999.999	0	-999.999	-7.1047
react	1075	-8.4302	-20.8961	-65.2035	-9.5874	-9.4825	-14.7351	-13.4297	-15.2479	-12.2227	-13.761	-2.2143	-2.1226	-2.8087	-6.9673	-1.9105	-5.6533	-2.8487	-999.999	-999.999	0	-999.999	-6.5666
react	1076	-7.9222	-20.3979	-63.4655	-9.5465	-9.4416	-14.3735	-13.825	-14.6686	-11.6434	-13.6345	-2.0067	-2.0189	-2.6011	-6.5521	-2.0077	-5.9841	-2.8589	-999.999	-999.999	0	-999.999	-6.0911
react	1077	-8.3057	-22.1027	-68.0609	-10.1684	-10.0635	-15.3877	-14.4825	-16.2004	-13.1752	-14.5272	-2.7263	-2.6347	-3.3207	-7.9914	-1.7884	-5.7939	-3.0609	-999.999	-999.999	0	-999.999	-7.5191
react	1078	-8.1429	-20.2904	-67.286	-9.6571	-9.5522	-15.1698	-13.1882	-15.9421	-12.9169	-12.9002	-2.6533	-2.5617	-3.2477	-7.8454	-1.8342	-5.4679	-3.0283	-999.999	-999.999	0	-999.999	-7.2607
react	1079	-11.2629	-7.1064	-35.8687	-10.3634	-10.2585	-15.2093	-14.7829	-14.4382	-9.8025	-8.1247	-9.5579	-8.8788	-15.9943	-25.8863	-10.7499	-14.5828	-11.4763	-999.999	-999.999	-0.7488	-999.999	-5.1694
react	1080	-10.5113	-7.1142	-35.7016	-10.0583	-9.9534	-14.9043	-14.6538	-14.1211	-9.4983	-8.2715	-9.3797	-8.4142	-15.6633	-25.3899	-10.5831	-14.4166	-11.3103	-999.999	-999.999	-0.3691	-999.999	-4.5659
react	1081	-12.6619	-8.0105	-38.303	-10.8019	-10.697	-15.6471	-15.397	-15.0943	-10.2413	-7.8236	-9.0087	-8.1085	-14.761	-23.8864	-9.9781	-13.8159	-10.7088	-999.999	-999.999	-1.4171	-999.999	-5.6044
react	1082	-12.0747	-7.6625	-37.6994	-10.8194	-10.7145	-15.665	-15.4148	-14.6658	-10.2597	-7.7144	-8.8191	-8.065	-15.2763	-24.6589	-10.2378	-14.0724	-10.9656	-999.999	-999.999	-0.9946	-999.999	-5.322
react	1083	-11.4328	-7.4397	-36.4694	-10.532	-10.4271	-15.3777	-14.8264	-14.5073	-9.9699	-7.9339	-9.1028	-8.5222	-15.5817	-25.1169	-10.3941	-14.2272	-11.1206	-999.999	-999.999	-0.769	-999.999	-5.337
react	1084	-11.768	-7.303	-37.2319	-10.5129	-10.408	-15.3585	-15.1083	-14.7168	-9.9579	-7.7842	-9.2994	-8.4894	-15.2298	-24.74	-10.3593	-14.1952	-11.0884	-999.999	-999.999	-0.9491	-999.999	-5.3171
react	1085	-11.1899	-6.629	-35.1809	-10.4307	-10.3258	-15.2777	-14.7261	-14.1336	-9.872	-7.5301	-9.136	-8.3544	-16.2973	-26.1414	-10.7085	-14.5327	-11.4273	-999.999	-999.999	-0.4004	-999.999	-4.7623
react	1086	-11.4431	-6.5109	-37.8608	-9.5476	-9.4428	-14.9171	-13.6387	-14.3091	-9.5164	-6.3443	-8.2439	-7.0344	-13.5276	-21.9485	-9.7553	-12.5821	-9.9992	-999.999	-999.999	-0.4779	-999.999	-4.5099
react	1087	-11.4455	-7.0988	-36.2502	-10.2452	-10.1403	-15.3923	-14.0628	-14.4558	-9.6857	-7.679	-9.1373	-8.1461	-15.1854	-24.5223	-10.4963	-14.0264	-11.2211	-999.999	-999.999	-0.6661	-999.999	-4.8748
react	1088	-11.266	-6.9014	-35.8318	-10.0664	-9.9615	-15.2134	-13.963	-14.2319	-9.5079	-7.611	-9.0429	-8.0972	-15.0886	-24.3771	-10.446	-13.977	-11.1717	-999.999	-999.999	-0.4032	-999.999	-4.6966
react	1089	-10.3508	-6.7712	-35.8857	-10.0571	-9.9522	-14.9032	-14.0506	-14.0655	-9.2047	-7.4244	-8.8201	-7.9095	-14.3684	-23.2974	-10.0792	-13.9114	-10.8052	-999.999	-999.999	-0.1354	-999.999	-4.5652
react	1090	-8.6043	-6.7251	-34.5548	-8.3124	-8.2075	-13.3092	-11.7862	-13.3448	-8.3038	-8.3732	-9.0943	-8.3429	-14.2539	-23.2768	-10.1754	-13.1614	-10.206	-999.999	-999.999	0	-999.999	-4.0038
react	1091	-8.7905	-6.5386	-48.0243	-9.0259	-8.9211	-14.1759	-12.5806	-13.5026	-15.1483	-3.995	-5.0604	-4.8377	-19.7808	-31.4566	-7.2143	-9.6834	-6.881	-999.999	-999.999	0	-999.999	-4.6901
react	1092	-10.9844	-7.2186	-40.5857	-10.3327	-10.2278	-15.1783	-14.928	-14.2003	-10.1955	-6.1185	-7.2015	-6.4287	-13.0084	-21.1748	-8.5976	-12.4336	-9.3268	-999.999	-999.999	-0.3579	-999.999	-4.8377
react	1093	-11.2389	-7.5145	-36.842	-10.337	-10.2321	-15.1826	-14.6313	-14.4562	-9.7769	-7.8185	-8.8616	-8.1372	-14.814	-23.9659	-10.0061	-13.842	-10.7352	-999.999	-999.999	-0.6918	-999.999	-5.1422
react	1094	-10.8669	-7.5963	-36.9738	-10.2165	-10.1116	-15.0622	-14.5108	-14.6652	-9.6571	-8.0363	-9.2065	-8.1539	-14.8464	-24.0144	-10.0222	-13.8575	-10.7508	-999.999	-999.999	-0.5818	-999.999	-5.0229
react	1095	-9.9312	-7.6123	-37.658	-8.8938	-8.7889	-14.0418	-12.4785	-13.4686	-8.9551	-8.583	-8.5406	-7.9791	-14.1999	-23.1967	-9.8292	-13.0654	-10.2612	-999.999	-999.999	0	-999.999	-4.3174
react	1096	-10.5695	-7.3543	-36.3989	-9.3785	-9.2736	-14.7683	-13.9737	-14.3323	-9.3644	-8.2645	-9.3437	-8.333	-15.0766	-24.4222	-10.1961	-13.4896	-10.9271	-999.999	-999.999	-0.1742	-999.999	-4.7318

state	soln	si_Ba3(AsO4)2	si_Halite	si_Fluorite	si_Cu(OH)2	si_Tenorite	si_Brochantite	si_Cupricferrite	si_Cuprousferrite	si_CoFe2O4	si_Hercynite	si_Spinel	si_Magnesioferrite	si_Minium	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zincite	si_ZnO(active)	si_Be(OH)2(beta)	si_CO2(g)
react	1047	0	-8.9836	-3.7889	-12.0723	-11.0423	-50.4734	-13.4165	2.6096	9.1195	-1.7142	-10.0246	-7.8127	-41.9035	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.0106	-5.1903
react	1048	0	-8.7349	-3.2422	-1.6663	-0.6363	-9.0346	-0.3985	8.9676	11.7062	-5.7622	-10.0425	-5.2186	-32.1371	-1.3419	-1.6159	-0.8959	-0.6759	-0.8759	-0.4759	-0.3303	-0.0118	-4.8825
react	1049	-5.5582	-8.7176	-9.1934	-8.1388	-7.1088	-25.982	-7.2622	2.7178	2.1678	-5.5394	-19.7421	-15.3093	-56.4178	-10.2103	-10.4843	-9.7643	-9.5443	-9.7443	-9.3443	-9.1987	-5.7183	-3.2349
react	1050	-12.8796	-8.2028	-3.938	-8.8976	-7.8676	-30.848	-9.8148	5.3573	3.9982	-2.1412	-16.8147	-14.1758	-54.6386	-6.8343	-7.1083	-6.3883	-6.1683	-6.3683	-5.9683	-5.8227	-3.3038	-2.978
react	1051	-6.9596	-8.0864	-6.882	-7.3368	-6.3068	-22.2313	-6.2739	4.6452	3.2113	-4.4141	-19.0069	-14.388	-55.1345	-9.0667	-9.3407	-8.6207	-8.4007	-8.6007	-8.2006	-8.055	-5.0145	-3.0611
react	1052	-6.6314	-7.9918	-9.8632	-8.3242	-7.2942	-25.3576	-7.6208	2.5735	1.826	-5.4984	-19.9743	-15.7148	-56.8867	-10.0768	-10.3508	-9.6308	-9.4108	-9.6108	-9.2108	-9.0652	-5.9455	-3.0585
react	1053	-5.3394	-8.278	-8.7157	-8.1049	-7.0749	-24.7834	-7.1265	2.7193	2.2523	-5.5719	-19.5819	-15.0474	-56.1831	-9.8338	-10.1078	-9.3878	-9.1678	-9.3678	-8.9677	-8.8221	-5.5605	-3.0592
react	1054	0	-6.7336	-2.1809	-1.0301	0	-5.925	0.2378	6.941	11.5449	-8.4251	-9.4922	-4.6683	-27.6851	-1.4858	-1.7598	-1.0398	-0.8198	-1.0198	-0.6197	-0.4741	-0.0213	-4.4918
react	1055	0	-7.3277	-2.7623	-1.03	0	-7.9372	0.2378	5.2488	12.8662	-10.1173	-8.2355	-3.4117	-22.4852	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.2226	-5.4984
react	1056	0	-7.5736	-3.5553	-1.03	0	-8.8624	0.2378	6.5919	13.0369	-8.7742	-7.4687	-2.6448	-25.1714	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.4999	-5.8979
react	1057	-5.7135	-8.9801	-8.7304	-8.1055	-7.0755	-25.9805	-7.1297	2.8485	1.9505	-5.4421	-19.5819	-15.0501	-56.9318	-10.1969	-10.4709	-9.7509	-9.5309	-9.7309	-9.3309	-9.1853	-5.562	-3.2352
react	1058	-5.4054	-8.6367	-9.8502	-8.9635	-7.9335	-28.5155	-8.201	1.7817	1.3512	-5.6509	-19.9663	-15.6477	-56.9933	-10.2601	-10.5341	-9.8141	-9.5941	-9.7941	-9.3941	-9.2485	-5.9385	-3.2346
react	1059	-5.1382	-8.4778	-10.1826	-8.7729	-7.7429	-27.675	-8.7399	1.5182	0.5094	-6.105	-20.0783	-16.4893	-56.6239	-10.159	-10.433	-9.713	-9.493	-9.693	-9.293	-9.1474	-6.0491	-3.2344
react	1060	0	-9.6012	-3.7354	-1.9233	-0.8933	-7.3467	-0.6555	8.0969	10.6849	-6.3759	-11.128	-6.3041	-34.485	-2.3824	-2.6564	-1.9364	-1.7164	-1.9164	-1.5163	-1.3707	-0.3559	-4.8106
react	1061	-6.0138	-9.7092	-3.9375	-8.0623	-7.0323	-29.4252	-8.6938	5.907	6.5331	-2.4268	-14.5661	-11.6416	-50.572	-5.2473	-5.5213	-4.8013	-4.5813	-4.7813	-4.3813	-4.2357	-1.6403	-3.6252
react	1062	-3.3176	-9.1097	-5.1139	-7.3281	-6.2981	-22.701	-6.0603	3.7979	4.4244	-5.27	-17.6983	-12.8744	-54.1088	-9.0328	-9.3068	-8.5868	-8.3668	-8.5668	-8.1668	-8.0212	-4.4016	-3.242
react	1063	-5.757	-8.8941	-4.7645	-7.7096	-6.6796	-23.3369	-7.8876	2.6396	3.2182	-6.1323	-17.6598	-14.1964	-55.3283	-8.9681	-9.2421	-8.5221	-8.3021	-8.5021	-8.1021	-7.9565	-4.7217	-3.2399
react	1064	-10.562	-9.079	-4.1256	-11.5645	-10.5345	-44.3339	-12.8648	3.0736	4.1805	-1.758	-15.0767	-12.8209	-57.5825	-5.8628	-6.1368	-5.4168	-5.1968	-5.3968	-4.9968	-4.8512	-2	-3.1792
react	1065	0	-9.3926	-4.1279	-1.8873	-0.8573	-11.9173	-0.6195	10.1826	13.1478	-4.3262	-8.4202	-3.5963	-34.0675	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.1514	-6.1286
react	1066	0	-8.6473	-2.4169	-1.03	0	-9.4429	0.2378	10.5322	13.5813	-4.8339	-6.7449	-1.921	-33.0521	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.4659	-7.1403
react	1067	0	-8.4341	-3.1152	-1.03	0	-8.0808	0.2378	6.3773	12.8435	-8.9888	-8.2993	-3.4754	-24.7422	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.1938	-5.4609
react	1068	0	-8.067	-3.6223	-1.03	0	-8.076	0.2378	7.1732	13.2264	-8.1928	-8.0322	-3.2083	-26.3341	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.2753	-5.5964
react	1069	-5.937	-8.9422	-8.9543	-8.6551	-7.6251	-27.705	-8.101	1.7791	1.4508	-5.9619	-19.6602	-15.5499	-57.4534	-10.2114	-10.4854	-9.7654	-9.5454	-9.7454	-9.3454	-9.1998	-5.6381	-3.2351
react	1070	-5.0523	-9.0381	-8.568	-8.5266	-7.4966	-26.8072	-9.0548	1.6224	0.5012	-6.2471	-19.5273	-16.4994	-57.5773	-10.5127	-10.7867	-10.0667	-9.8467	-10.0467	-9.6467	-9.5011	-5.5083	-3.5364
react	1071	-4.4523	-9.1132	-7.3571	-8.077	-7.047	-25.5564	-8.6478	1.981	0.9115	-6.3382	-19.0749	-16.0896	-56.0744	-10.1418	-10.4158	-9.6958	-9.4758	-9.6758	-9.2758	-9.1302	-5.0787	-3.5377
react	1072	0	-9.0744	-2.6584	-1.03	0	-7.6221	0.2378	7.7192	12.2695	-7.6469	-9.3374	-4.5135	-28.0646	-1.0416	-1.3156	-0.5956	-0.3756	-0.5756	-0.1756	-0.03	-0.0202	-4.9285
react	1073	0	-9.0527	-2.8896	-1.03	0	-7.4171	0.2378	5.6709	12.5975	-9.6952	-8.8631	-4.0392	-23.3295	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.0756	-5.288
react	1074	0	-8.9816	-2.6639	-1.03	0	-7.6907	0.2378	5.1478	12.67	-10.2183	-8.7377	-3.9138	-22.2832	-1.0461	-1.3201	-0.6001	-0.3801	-0.5801	-0.1801	-0.0345	-0.0958	-5.3856
react	1075	0	-7.986	-2.2327	-1.03	0	-7.1527	0.2378	5.6208	12.6841	-9.7453	-8.291	-3.4671	-23.2292	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.1188	-5.2557
react	1076	0	-7.8404	-1.9361	-1.03	0	-6.5733	0.2378	5.5396	12.4663	-9.8265	-8.5723	-3.7484	-23.3785	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.061	-5.0481
react	1077	0	-7.949	-2.587	-1.03	0	-8.1051	0.2378	5.3666	12.9839	-9.9995	-7.7995	-2.9756	-22.7209	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.3588	-5.7677
react	1078	0	-7.752	-3.1614	-1.03	0	-7.8468	0.2378	6.9206	12.9435	-8.4455	-7.9951	-3.1713	-25.8288	-1.0116	-1.2856	-0.5656	-0.3456	-0.5456	-0.1456	0	-0.2945	-5.6947
react	1079	-4.9159	-8.8993	-8.4602	-8.4824	-7.4524	-27.0898	-7.4975	2.0854	2.0544	-5.8282	-19.4875	-14.9464	-56.7722	-10.0745	-10.3485	-9.6285	-9.4085	-9.6085	-9.2085	-9.0629	-5.4703	-3.5365
react	1080	-4.3183	-8.7048	-7.9959	-8.3167	-7.2867	-26.2883	-7.5801	2.1049	1.9725	-5.9745	-19.3207	-15.0281	-55.3329	-9.8958	-10.1698	-9.4498	-9.2298	-9.4298	-9.0298	-8.8842	-5.3099	-3.5369
react	1081	-4.529	-9.5542	-7.2279	-8.0155	-6.9855	-26.1279	-6.7477	2.5539	2.8051	-5.8267	-19.0205	-14.1966	-55.0805	-9.8248	-10.0988	-9.3788	-9.1588	-9.3588	-8.9588	-8.8132	-5.0292	-3.2369
react	1082	-3.8374	-9.124	-7.8847	-8.2736	-7.2436	-26.9205	-7.1215	2.404	2.4318	-5.7184	-19.2777	-14.5695	-55.2847	-9.6361	-9.9101	-9.1901	-8.9701	-9.1701	-8.7701	-8.6245	-5.2695	-3.236
react	1083	-4.2687	-8.9019	-8.3079	-8.4266	-7.3966	-27.0897	-7.3725	2.0312	2.1784	-5.9383	-19.4328	-14.8226	-56.316	-9.9203	-10.1943	-9.4743	-9.2543	-9.4543	-9.0543	-8.9087	-5.4177	-3.2356
react	1084	-4.3931	-9.1752	-7.42	-8.0996	-7.0696	-26.0967	-6.863	2.8099	2.6952	-5.4866	-19.0989	-14.3062	-56.0323	-9.8147	-10.0887	-9.3687	-9.1487	-9.3487	-8.9487	-8.8031	-5.1014	-3.5376
react	1085	-4.0958	-8.6165	-9.466	-8.8332	-7.8032	-28.2116	-8.0043	1.9307	1.5488	-5.6322	-19.8358	-15.4508	-56.9429	-10.0511	-10.3251	-9.6051	-9.3851	-9.5851	-9.1851	-9.0395	-5.8101	-3.1379
react	1086	-5.4964	-8.7357	-7.0876	-7.4867	-6.4567	-23.8166	-6.365	4.3862	3.193	-4.5232	-18.962	-14.2841	-55.1384	-9.2357	-9.5097	-8.7897	-8.5697	-8.7697	-8.3697	-8.2241	-4.9753	-3.0611
react	1087	-4.3515	-8.8446	-8.5907	-8.2285	-7.1985	-26.2112	-7.2139	2.484	2.0381	-5.6836	-19.5333	-14.9626	-55.737	-9.955	-10.229	-9.509	-9.289	-9.489	-9.089	-8.9434	-5.5147	-3.2353
react	1088	-4.0532	-8.8703	-8.4495	-8.1801	-7.15	-25.888	-7.135	2.6005	2.1181	-5.6156	-19.4837	-14.8826	-55.6959	-9.8604	-10.1344	-9.4144	-9.1944	-9.3944	-8.9944	-8.8488	-5.4666	-3.2355
react	1089	-3.4994	-8.5815	-7.4591	-7.8194	-6.7894	-24.503	-6.6558	3.1488	2.6043	-5.4278	-19.1157	-14.3961	-55.3862	-9.6365	-9.9105	-9.1905	-8.9705	-9.1705	-8.7705	-8.6249	-5.1166	-3.2366
react	1090	-5.156	-8.2723	-5.8147	-7.611	-6.5809	-22.9766	-7.1938	2.7109	2.7595	-6.0742	-18.3041	-14.3308	-55.233	-9.6083	-9.8823	-9.1623	-8.9423	-9.1423	-8.7423	-8.5967	-4.9189	-3.539
react	1091	-11.0892	-8.163	-3.8709	-10.485	-9.455	-38.4433	-11.6262	3.9938	4.3049	-1.9172	-14.8046	-12.3896	-55.253	-5.7957	-6.0697	-5.3497	-5.1297	-5.3297	-4.9297	-4.7841	-1.9468	-3.3178
react	1092	-3.0489	-8.8792	-4.7544	-7.2219	-6.1919	-23.7012	-5.9933	4.8872	3.9826	-4.287	-17.8034	-13.0187	-53.6555	-8.183	-8.457	-7.737	-7.517	-7.717	-7.317	-7.1714	-4.0904	-3.0716
react	1093	-3.8139	-9.0045	-7.2895	-8.0421	-7.0121	-25.7431	-6.7863	2.5323	2.7666	-5.8217	-19.0465	-14.2346	-55.1888	-9.6778	-9.9518	-9.2318	-9.0118	-9.2118	-8.8118	-8.6662	-5.0528	-3.2368
react	1094	-3.8981	-8.8571	-7.3266	-8.0583	-7.0283	-25.6719	-7.3424	2.2982	2.2111	-6.0396	-19.0619	-14.7899	-55.3431	-10.0228	-10.2968	-9.5768	-9.3568	-9.5568	-9.1568	-9.0112	-5.0669	-3.2368
react	1095	-3.5842	-8.9811	-5.2561	-7.5831	-6.5531	-23.5445	-8.2318	2.5307	1.6401	-6.8062	-18.79	-15.3586	-54.786	-9.0529	-9.3269	-8.6069	-8.3869	-8.5869	-8.1869	-8.0413	-4.645	-3.5407
react	1096	-3.7342	-8.9702	-7.4511	-8.1111	-7.0811	-25.5376	-7.8565	2.1421	1.6983	-6.1429	-19.1132	-15.3025	-55.7605	-10.0352	-10.3092	-9.5892	-9.3692	-9.5692	-9.1692	-9.0236	-5.114	-3.3615

state	soln	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL
react	1047	-68.7526	2.72E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	5.97E+00	7.84E+00	3.53E+00	1.01E-01	4.40E-95	3.00E-01	0.00E+00	2.44E-03	6.33E-06	6.00E-03	3.70E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	3.00E+00	8.99E+01	2.10E+00	1.00E-01
react	1048	-47.3366	3.30E+01	7.00E+00	1.00E+00	2.00E+00	1.00E+00	9.10E+00	5.00E+00	7.05E+00	2.00E-01	4.40E-95	4.00E-01	0.00E+00	2.40E-03	5.74E-09	3.00E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.60E+01	1.23E+00	1.00E-01
react	1049	-49.01	3.47E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	2.23E+01	1.00E+00	4.45E-03	1.81E-09	4.40E-95	1.00E-01	0.00E+00	7.39E-01	4.09E+00	6.50E-02	2.70E+02	1.00E+00	3.00E+00	4.00E+00	4.00E+00	4.00E+00	1.15E+02	4.00E+00	1.00E-01
react	1050	-66.1904	6.81E+01	8.00E+00	3.00E+00	2.00E+00	1.00E+00	2.79E+01	1.27E+01	2.43E-01	3.04E-06	4.40E-95	2.00E-01	0.00E+00	7.90E-03	1.22E+01	2.30E-02	4.50E+02	1.00E+00	1.50E+01	1.50E+01	1.00E+01	2.40E+01	3.24E+02	1.40E+01	1.00E-01
react	1051	-53.1387	7.36E+01	1.10E+01	2.00E+00	2.00E+00	1.00E+00	2.66E+01	1.97E+01	1.62E-02	1.65E-08	4.40E-95	1.00E-01	0.00E+00	2.07E-01	1.02E+01	1.40E-02	4.00E+02	1.00E+00	4.00E+00	9.00E+00	7.00E+00	1.20E+01	2.96E+02	1.00E+01	1.00E-01
react	1052	-49.5205	7.69E+01	1.05E+01	2.00E+00	1.00E+00	1.00E+00	3.48E+01	1.68E+01	5.37E-03	1.80E-09	4.40E-95	1.00E-01	0.00E+00	2.17E+00	7.76E+00	1.75E-02	3.75E+02	1.00E+00	3.50E+00	5.50E+00	4.50E+00	5.50E+00	2.68E+02	6.00E+00	1.00E-01
react	1053	-48.6764	5.26E+01	1.00E+01	1.00E+00	1.00E+00	1.00E+00	1.86E+01	1.69E+01	8.23E-03	4.17E-09	4.40E-95	1.00E-01	0.00E+00	7.09E-01	2.65E+00	4.00E-03	4.00E+02	1.00E+00	2.00E+00	3.00E+00	3.00E+00	3.00E+00	1.90E+02	3.00E+00	1.00E-01
react	1054	-36.685	2.32E+02	6.30E+01	1.00E+00	1.40E+01	5.00E+00	1.11E+02	1.98E+01	1.68E+01	5.03E-01	4.40E-95	6.00E-01	0.00E+00	2.32E-03	5.16E-09	1.00E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	8.14E-01	1.00E+00	3.50E+01	1.00E+00	1.00E-01
react	1055	-29.9162	1.23E+02	4.00E+01	1.00E+00	3.35E+00	1.00E+00	4.27E+01	1.48E+01	1.51E+01	3.99E+00	4.40E-95	6.00E-01	0.00E+00	2.12E-02	1.75E-08	9.89E-04	2.90E+02	1.00E+00	1.00E+00	1.00E+00	2.62E-01	1.00E+00	2.46E+01	6.49E-01	1.00E-01
react	1056	-35.2886	1.06E+02	3.80E+01	1.00E+00	8.49E-01	9.09E-01	2.55E+01	1.19E+01	1.58E+01	1.09E+01	4.40E-95	5.00E-01	0.00E+00	5.57E-02	4.10E-08	1.28E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	2.59E-01	3.00E+00	2.88E+01	4.52E-01	1.00E-01
react	1057	-49.2011	2.86E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.82E+01	1.00E+00	5.30E-03	2.55E-09	4.40E-95	1.00E-01	0.00E+00	4.86E-01	3.54E+00	2.30E-02	1.90E+02	1.00E+00	1.00E+00	2.00E+00	3.00E+00	1.00E+00	8.20E+01	2.00E+00	1.00E-01
react	1058	-48.7924	4.56E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	2.71E+01	4.00E+00	3.50E-03	1.13E-09	4.40E-95	1.00E-01	0.00E+00	1.57E+00	5.32E+00	1.10E-02	2.70E+02	1.00E+00	1.00E+00	4.00E+00	1.00E+00	1.00E+00	1.72E+02	4.00E+00	1.00E-01
react	1059	-48.435	4.78E+01	4.00E+00	3.00E+00	1.00E+00	1.00E+00	2.94E+01	4.00E+00	3.09E-03	8.81E-10	4.40E-95	1.00E-01	0.00E+00	2.22E+00	2.42E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	4.00E+00	2.00E+00	1.00E+00	2.81E+02	6.00E+00	1.00E-01
react	1060	-44.8817	8.40E+01	4.00E+00	1.00E+00	1.30E+01	5.00E+00	2.27E+00	5.69E+01	1.17E+00	4.91E-03	4.40E-95	1.00E-01	0.00E+00	3.41E-04	1.46E-08	2.21E-01	1.10E+02	1.00E+00	5.00E+00	1.00E+00	1.00E+00	8.10E+01	1.02E+02	5.76E-01	1.00E-01
react	1061	-64.4767	4.20E+01	3.00E+00	1.00E+00	7.00E+00	1.00E+00	2.29E+00	2.59E+01	7.22E-01	1.18E-04	4.40E-95	1.00E-01	0.00E+00	2.35E-05	3.58E-02	7.44E-01	1.10E+02	1.00E+00	1.50E+01	1.00E+00	1.00E+00	2.10E+01	7.10E+01	1.00E+00	1.00E-01
react	1062	-49.3052	5.30E+01	4.00E+00	1.00E+00	5.00E+00	4.00E+00	6.90E+00	3.09E+01	2.41E-02	5.49E-08	4.40E-95	1.00E-01	0.00E+00	8.04E-02	2.79E-01	4.79E-01	1.60E+02	1.00E+00	8.00E+00	1.00E+00	1.00E+00	8.00E+00	6.30E+01	1.00E+00	1.00E-01
react	1063	-49.0892	2.41E+02	6.00E+00	1.00E+00	4.40E+01	1.30E+01	8.24E+00	1.66E+02	1.83E-02	3.43E-08	4.40E-95	1.00E-01	0.00E+00	1.60E-01	1.20E-01	1.88E+00	1.80E+02	1.00E+00	3.50E+01	1.00E+00	1.00E+00	2.40E+01	1.82E+02	1.00E+00	1.00E-01
react	1064	-68.4895	1.85E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	9.49E+00	8.51E-01	1.06E+00	8.77E-05	4.40E-95	2.00E-01	0.00E+00	4.60E-05	5.33E-01	2.90E-02	2.30E+02	1.00E+00	1.00E+00	3.00E+00	1.00E+00	3.00E+00	7.20E+01	2.00E+00	1.00E-01
react	1065	-53.0806	1.62E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	4.61E+00	2.00E+00	2.55E+00	4.55E-01	4.40E-95	2.00E-01	0.00E+00	1.53E-02	1.44E-08	5.20E-02	2.50E+02	1.00E+00	2.00E+00	4.00E+00	2.00E+00	3.00E+00	2.33E+01	5.04E-01	1.00E-01
react	1066	-51.0498	4.71E+01	1.60E+01	3.00E+00	2.00E+00	1.00E+00	4.97E+00	1.35E+01	1.90E+00	2.69E+00	4.40E-95	1.10E+00	0.00E+00	1.17E-01	8.32E-08	2.20E-02	6.30E+02	2.00E+00	3.00E+00	4.00E+00	8.87E-01	2.60E+01	4.02E+01	3.42E-01	1.00E-01
react	1067	-34.4302	5.47E+01	1.40E+01	1.00E+00	3.00E+00	1.00E+00	9.26E+00	7.97E+00	1.45E+01	3.28E+00	4.40E-95	4.00E-01	0.00E+00	1.87E-02	1.58E-08	6.42E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	2.64E-01	3.00E+00	2.44E+01	6.76E-01	1.00E-01
react	1068	-37.614	7.60E+01	2.40E+01	1.00E+00	1.00E+00	1.00E+00	1.27E+01	1.59E+01	1.49E+01	4.77E+00	4.40E-95	4.00E-01	0.00E+00	2.63E-02	2.10E-08	1.20E-02	1.70E+02	1.00E+00	2.00E+00	4.00E+00	2.56E-01	6.00E+00	2.46E+01	5.75E-01	1.00E-01
react	1069	-47.9651	2.63E+01	2.50E+00	1.00E+00	1.00E+00	1.00E+00	1.58E+01	2.50E+00	4.84E-03	2.12E-09	4.40E-95	1.00E-01	0.00E+00	6.19E-01	1.28E+00	8.50E-03	3.40E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	9.50E+01	1.00E+00	1.00E-01
react	1070	-48.9889	2.60E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.06E+01	8.00E+00	2.82E-03	1.44E-09	4.40E-95	1.00E-01	0.00E+00	5.14E-01	4.90E-01	5.40E-02	2.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+01	1.00E+00	1.00E-01
react	1071	-48.71	2.15E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	8.83E+00	6.00E+00	4.69E-03	3.98E-09	4.40E-95	1.00E-01	0.00E+00	2.02E-01	1.40E-01	1.20E-02	1.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.90E+01	1.00E+00	1.00E-01
react	1072	-39.7978	4.10E+01	3.00E+00	1.00E+00	8.00E+00	1.00E+00	9.81E+00	2.00E+00	1.45E+01	9.55E-01	4.40E-95	4.00E-01	0.00E+00	5.50E-03	6.98E-09	9.00E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	4.25E-01	1.00E+00	3.50E+01	1.00E+00	1.00E-01
react	1073	-31.6046	4.54E+01	4.00E+00	1.00E+00	8.65E+00	1.00E+00	7.78E+00	9.94E+00	1.12E+01	1.29E+00	4.40E-95	3.00E-01	0.00E+00	9.64E-03	9.71E-09	7.82E-03	2.20E+02	1.00E+00	1.00E+00	1.00E+00	2.94E-01	1.00E+00	2.73E+01	9.34E-01	1.00E-01
react	1074	-29.512	4.25E+01	4.00E+00	1.00E+00	8.10E+00	1.00E+00	9.15E+00	6.98E+00	1.03E+01	1.36E+00	4.40E-95	4.00E-01	0.00E+00	1.11E-02	1.07E-08	2.00E-03	2.10E+02	1.00E+00	1.00E+00	1.00E+00	2.77E-01	1.00E+00	2.40E+01	8.19E-01	1.00E-01
react	1075	-31.4041	1.01E+02	2.50E+01	1.00E+00	5.03E+00	2.41E+00	1.50E+01	3.27E+01	1.59E+01	2.51E+00	4.40E-95	9.00E-01	0.00E+00	1.28E-02	1.18E-08	4.00E-03	3.50E+02	1.00E+00	1.00E+00	2.00E+00	2.96E-01	2.00E+00	2.63E+01	9.05E-01	1.00E-01
react	1076	-31.0795	1.38E+02	3.50E+01	1.00E+00	6.00E+00	3.00E+00	1.52E+01	5.67E+01	1.72E+01	1.84E+00	4.40E-95	1.20E+00	0.00E+00	8.54E-03	8.98E-09	1.00E-03	8.60E+02	1.00E+00	1.00E+00	2.00E+00	3.50E-01	1.00E+00	3.09E+01	1.00E+00	1.00E-01
react	1077	-30.3874	9.73E+01	3.10E+01	1.00E+00	2.30E+00	1.00E+00	1.31E+01	2.78E+01	1.36E+01	5.97E+00	4.40E-95	9.00E-01	0.00E+00	3.55E-02	2.73E-08	4.47E-04	6.10E+02	1.00E+00	1.00E+00	2.00E+00	2.48E-01	2.00E+00	2.55E+01	4.91E-01	1.00E-01
react	1078	-36.6033	1.07E+02	3.50E+01	1.00E+00	1.00E+00	1.00E+00	1.83E+01	3.18E+01	1.28E+01	4.47E+00	4.40E-95	7.00E-01	0.00E+00	2.82E-02	2.23E-08	7.53E-03	3.50E+02	1.00E+00	1.00E+00	1.00E+00	2.48E-01	4.00E+00	2.47E+01	5.28E-01	1.00E-01
react	1079	-47.6381	2.56E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.45E+01	3.00E+00	2.94E-03	1.56E-09	4.40E-95	1.00E-01	0.00E+00	4.11E-01	1.17E+00	1.50E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	8.75E+01	1.00E+00	1.00E-01
react	1080	-47.5497	2.90E+01	5.00E+00	1.00E+00	1.00E+00	1.00E+00	1.37E+01	6.00E+00	3.58E-03	2.32E-09	4.40E-95	1.00E-01	0.00E+00	3.10E-01	5.70E-01	1.00E-03	2.60E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	9.00E+01	2.00E+00	1.00E-01
react	1081	-47.0786	1.55E+01	1.00E+00	1.00E+00	1.00E+00	1.00E+00	9.53E+00	1.00E+00	9.85E-03	8.70E-09	4.40E-95	1.00E-01	0.00E+00	1.75E-01	4.00E-01	1.00E-03	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.30E+01	1.00E+00	1.00E-01
react	1082	-47.743	2.07E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.29E+01	1.00E+00	7.41E-03	4.94E-09	4.40E-95	1.00E-01	0.00E+00	2.56E-01	9.28E-01	1.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.48E+02	2.00E+00	1.00E-01
react	1083	-47.0595	2.41E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.44E+01	2.00E+00	6.24E-03	3.52E-09	4.40E-95	1.00E-01	0.00E+00	3.55E-01	8.00E-01	2.00E-03	2.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.10E+02	1.00E+00	1.00E-01
react	1084	-48.5014	2.01E+01	2.00E+00	1.00E+00	1.00E+00	1.00E+00	1.15E+01	2.00E+00	4.54E-03	3.72E-09	4.40E-95	1.00E-01	0.00E+00	1.97E-01	1.05E+00	1.00E-03	2.00E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	6.50E+01	1.00E+00	1.00E-01
react	1085	-48.7343	4.06E+01	3.50E+00	2.00E+00	1.00E+00	1.00E+00	2.42E+01	3.00E+00	5.04E-03	1.86E-09	4.40E-95	1.00E-01	0.00E+00	1.03E+00	4.11E+00	2.00E-03	3.90E+02	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.00E+00	2.06E+02	3.00E+00	1.00E-01
react	1086	-52.5849	3.82E+01	3.00E+00	2.00E+00	1.00E+00	1.00E+00	2.14E+01	2.00E+00	1.63E-02	1.63E-08	4.40E-95	1.00E-01	0.00E+00	1.65E-01	7.05E+00	3.20E-02	2.70E+02	1.00E+00	3.00E+00	6.00E+00	4.00E+00	1.00E+01	1.80E+02	7.00E+00	1.00E-01
react	1087	-48.1574	2.73E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.65E+01	2.00E+00	5.59E-03	2.83E-09	4.40E-95	1.00E-01	0.00E+00	4.45E-01	1.81E+00	1.20E-02	3.10E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	2.00E+00	1.28E+02	3.00E+00	1.00E-01
react	1088	-48.3686	2.74E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.55E+01	3.00E+00	5.92E-03	3.18E-09	4.40E-95	1.00E-01	0.00E+00	4.08E-01	1.89E+00	1.00E-02	3.10E+02	1.00E+00	1.00E+00	2.00E+00	2.00E+00	2.00E+00	1.42E+02	3.00E+00	1.00E-01
react	1089	-48.8824	3.22E+01	6.00E+00	1.00E+00	1.00E+00	1.00E+00	1.51E+01	6.00E+00	9.07E-03	7.50E-09	4.40E-95	1.00E-01	0.00E+00	2.15E-01	1.25E+00	4.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	2.00E+00	1.00E+00	1.02E+02	2.00E+00	1.00E-01
react	1090	-47.7898	1.13E+02	1.50E+01	1.00E+00	1.30E+01	4.00E+00	1.31E+01	6.57E+01	6.44E-03	8.02E-09	4.40E-95	1.00E-01	0.00E+00	2.20E-01	1.80E-01	9.30E-02	2.10E+02	1.00E+00	5.00E+00	1.00E+00	2.00E+00	7.00E+00	6.80E+01	1.00E+00	1.00E-01
react	1091	-67.5343	8.49E+01	1.50E+01	1.00E+00	9.00E+00	2.00E+00	1.65E+01	3.97E+01	8.21E-01	7.71E-05	4.40E-95	1.00E-01	0.00E+00	2.78E-05	4.04E-01	2.20E-02	2.10E+02	1.00E+00	1.00E+00	1.00E+00	2.00E+00	2.00E+00	7.40E+01	2.00E+00	1.00E-01
react	1092	-53.3159	2.31E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	1.13E+01	3.00E+00	5.92E-02	2.16E-07	4.40E-95	2.00E-01	0.00E+00	8.46E-02	8.41E-01	1.00E-03	3.80E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.41E+02	2.00E+00	1.00E-01
react	1093	-47.1226	2.14E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.13E+01	3.00E+00	9.66E-03	8.42E-09	4.40E-95	1.00E-01	0.00E+00	1.86E-01	4.30E-01	2.00E-03	2.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	7.90E+01	1.00E+00	1.00E-01
react	1094	-47.331	2.39E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	1.20E+01	4.00E+00	9.53E-03	8.21E-09	4.40E-95	1.00E-01	0.00E+00	1.93E-01	2.70E-01	2.00E-03	3.10E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.70E+01	1.00E+00	1.00E-01
react	1095	-49.0891	4.48E+01	5.00E+00	1.00E+00	5.00E+00	2.00E+00	7.36E+00	2.39E+01	8.77E-03	1.43E-08	4.40E-95	1.00E-01	0.00E+00	9.00E-02	5.00E-02	4.10E-02	1.50E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	4.00E+00	1.11E+02	1.00E+00	1.00E-01
react	1096	-47.84	2.51E+01	4.00E+00	1.00E+00	1.00E+00	1.00E+00	9.24E+00	8.00E+00	6.78E-03	5.55E-09	4.40E-95	1.00E-01	0.00E+00	2.21E-01	2.40E-01	3.50E-03	2.30E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	3.50E+00	4.05E+01	1.00E+00	1.00E-01

state	soln	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
react	1047	5.58E-03	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1048	1.81E-06	0.00E+00	9.81E+00	6.20E-95	1.80E-95	9.50E-95
react	1049	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1050	2.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1051	2.00E+00	0.00E+00	2.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1052	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1053	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1054	7.11E-06	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1055	5.45E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1056	1.57E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1057	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1058	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1059	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1060	2.61E-04	0.00E+00	9.90E+00	6.20E-95	1.80E-95	9.50E-95
react	1061	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1062	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1063	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1064	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1065	1.99E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1066	9.55E-08	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1067	2.47E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1068	5.05E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1069	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1070	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1071	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1072	6.50E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1073	6.44E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1074	3.31E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1075	2.92E-06	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1076	9.85E-06	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1077	8.57E-07	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1078	1.32E-06	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1079	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1080	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1081	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1082	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1083	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1084	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1085	2.50E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1086	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1087	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1088	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1089	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1090	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1091	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1092	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1093	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1094	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1095	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	1096	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Al	As	B	Be	Ca	Cd	Cl	Co	Cr	Cu	C(4)	F	Fe	K	Li	Mg	Mn	Na	N(-3)	N(5)
react	**1097**	4.321	4.37	-4.92E-05	8E-04	1	9.75E-16	9.06E-11	6.51E-06	1.33E-08	1.76E-05	1.11E-07	7.49E-05	8.90E-10	2.15E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	1.79E-06	2.56E-05	5.76E-07	4.11E-05	2.55E-07	2.17E-04	0.00E+00	0.00E+00
react	**1098**	4.316	4.48	-4.99E-05	9E-04	1	5.07E-15	4.20E-10	6.82E-06	1.33E-08	1.62E-05	1.11E-07	7.49E-05	8.90E-10	2.10E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	2.06E-06	2.56E-05	7.20E-07	4.11E-05	2.73E-07	2.83E-04	0.00E+00	0.00E+00
react	**1099**	7.411	-3.35	1.22E-04	0.006	1	5.57E-18	8.45E-14	4.43E-09	1.34E-08	2.22E-05	1.11E-07	1.45E-03	8.90E-10	8.46E-05	1.70E-08	1.92E-08	1.57E-08	1.30E-04	1.05E-05	3.38E-08	2.56E-05	4.32E-07	2.06E-04	3.64E-08	4.58E-04	0.00E+00	0.00E+00
react	**1100**	4.223	4.24	-6.64E-05	0.003	1	1.99E-13	4.47E-09	1.59E-05	1.33E-08	1.94E-05	1.11E-07	2.25E-04	8.90E-10	6.68E-04	3.39E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	6.09E-06	2.56E-05	1.44E-06	1.65E-04	2.37E-07	1.39E-03	0.00E+00	0.00E+00
react	**1101**	4.2	4	-7.60E-05	0.007	1	6.07E-14	7.62E-10	1.20E-05	1.34E-08	2.31E-05	1.66E-07	6.99E-04	8.90E-10	5.76E-04	8.49E-08	1.92E-08	1.57E-08	9.99E-06	5.27E-06	1.07E-06	5.12E-05	2.23E-06	3.09E-04	1.17E-06	2.13E-03	0.00E+00	0.00E+00
react	**1102**	3.887	4.95	-1.32E-04	8E-04	1	-6.28E-18	-5.34E-13	3.04E-05	1.33E-08	3.24E-05	1.11E-07	2.50E-05	8.90E-10	5.51E-04	1.70E-08	5.77E-08	3.15E-08	2.00E-05	5.26E-06	3.87E-05	2.56E-05	1.44E-07	4.11E-05	3.64E-08	1.30E-04	0.00E+00	0.00E+00
react	**1103**	4.113	4.84	-7.91E-05	8E-04	1	7.27E-15	6.24E-10	1.24E-05	1.33E-08	2.31E-05	1.11E-07	2.50E-05	8.90E-10	3.82E-04	1.70E-08	1.92E-08	1.57E-08	9.99E-06	5.26E-06	6.09E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	3.04E-04	0.00E+00	0.00E+00
react	**1104**	4.199	4.91	-6.52E-05	0.001	1	7.16E-15	4.37E-10	9.32E-06	1.33E-08	2.96E-05	1.11E-07	2.50E-05	8.90E-10	5.76E-04	1.70E-08	1.92E-08	1.57E-08	2.00E-05	5.26E-06	5.19E-06	2.56E-05	1.44E-07	4.11E-05	1.82E-08	5.65E-04	0.00E+00	0.00E+00

state	soln	Ni	P	Pb	S(6)	U	V	Zn	m_Fe+3	m_FeOH+2	m_Fe(OH)2+	m_Fe(OH)3	m_FeSO4+	m_Fe(SO4)2-	la_Fe+3	Calcite	d_Calcite	Aragonite	d_Aragonite	Dolomite(ordered)	d_Dolomite(ordered)	Dolomite(disordered)	d_Dolomite(disordered)	Magnesite
react	**1097**	3.41E-08	0.00E+00	4.83E-09	1.66E-04	0.00E+00	1.96E-07	5.35E-07	4.42E-15	5.11E-13	3.80E-11	8.32E-15	5.41E-15	1.64E-17	-1.45E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1098**	4.26E-08	0.00E+00	4.83E-09	2.02E-04	0.00E+00	1.96E-07	6.96E-07	6.57E-15	7.44E-13	5.45E-11	1.18E-14	9.58E-15	3.51E-17	-1.43E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1099**	1.70E-08	0.00E+00	4.83E-09	1.79E-03	0.00E+00	1.96E-07	7.19E-07	1.74E-24	1.90E-19	1.50E-14	3.85E-15	1.10E-23	2.61E-25	-2.41E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1100**	1.87E-07	0.00E+00	4.83E-09	8.30E-04	0.00E+00	1.96E-07	3.29E-06	1.18E-14	9.31E-13	5.05E-11	8.59E-15	4.81E-14	6.25E-16	-1.42E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1101**	4.35E-07	0.00E+00	4.83E-09	1.88E-03	0.00E+00	1.96E-07	6.83E-06	1.23E-15	8.19E-14	3.95E-12	6.23E-16	8.33E-15	2.16E-16	-1.52E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1102**	1.70E-08	0.00E+00	1.45E-08	2.08E-05	0.00E+00	1.96E-07	2.60E-06	3.71E-13	1.59E-11	4.37E-10	3.53E-14	5.18E-14	1.77E-17	-1.26E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1103**	1.70E-08	0.00E+00	4.83E-09	1.04E-04	0.00E+00	1.96E-07	8.26E-07	4.51E-14	3.24E-12	1.50E-10	2.04E-14	3.46E-14	6.50E-17	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1104**	1.70E-08	0.00E+00	4.83E-09	1.25E-04	0.00E+00	1.96E-07	8.41E-07	4.57E-14	3.92E-12	2.18E-10	3.59E-14	4.03E-14	9.03E-17	-1.35E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Magnesite	Huntite	d_Huntite	Nesquehonite	d_Nesquehonite	Artinite	d_Artinite	Hydromagnesite	d_Hydromagnesite	Goethite	d_Goethite	Maghemite	d_Maghemite	Hematite	d_Hematite	Lepidocrocite	d_Lepidocrocite	Magnetite	d_Magnetite	Fe(OH)2	d_Fe(OH)2	Fe3(OH)8
react	1097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1098	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1099	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.23E-06	4.23E-06	0.00E+00	0.00E+00	0.00E+00
react	1100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Fe3(OH)8	Ferrihydrite	d_Ferrihydrite	Fe(OH)2.7Cl.3	d_Fe(OH)2.7Cl.3	Fe(VO3)2	d_Fe(VO3)2	H-Jarosite	d_H-Jarosite	Na-Jarosite	d_Na-Jarosite	K-Jarosite	d_K-Jarosite	Alunite	d_Alunite	AlOHSO4	d_AlOHSO4	Al4(OH)10SO4	d_Al4(OH)10SO4	Al(OH)3(am)	d_Al(OH)3(am)	Gibbsite
react	1097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1098	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1099	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1102	0.00E+00	0.00E+00	0.00E+00	1.93E-08	1.93E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Gibbsite	Boehmite	d_Boehmite	Diaspore	d_Diaspore	Al2O3	d_Al2O3	Pyrolusite	d_Pyrolusite	Manganite	d_Manganite	Hausmannite	d_Hausmannite	Pyrochroite	d_Pyrochroite	Bixbyite	d_Bixbyite	Rhodochrosite	d_Rhodochrosite	Gypsum	d_Gypsum	Anhydrite
react	**1097**	0.00E+00	0.00E+00	0.00E+00	8.69E-06	8.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1098**	0.00E+00	0.00E+00	0.00E+00	1.12E-05	1.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1099**	0.00E+00	0.00E+00	0.00E+00	3.48E-05	3.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1100**	0.00E+00	0.00E+00	0.00E+00	7.79E-06	7.79E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1101**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1102**	0.00E+00	0.00E+00	0.00E+00	8.41E-05	8.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1103**	0.00E+00	0.00E+00	0.00E+00	3.28E-05	3.28E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1104**	0.00E+00	0.00E+00	0.00E+00	3.26E-05	3.26E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Anhydrite	Epsomite	d_Epsomite	Mirabilite	d_Mirabilite	Melanterite	d_Melanterite	Fe2(SO4)3	d_Fe2(SO4)3	Retgersite	d_Retgersite	Morenosite	d_Morenosite	CoSO4	d_CoSO4	MnSO4	d_MnSO4	Zincosite	d_Zincosite	Chalcanthite	d_Chalcanthite	Siderite
react	**1097**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1098**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1099**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1100**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1101**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1102**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1103**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1104**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Siderite	Smithsonite	d_Smithsonite	Cerussite	d_Cerussite	Malachite	d_Malachite	Azurite	d_Azurite	Otavite	d_Otavite	NiCO3	d_NiCO3	CoCO3	d_CoCO3	Strengite	d_Strengite	Vivianite	d_Vivianite	Barite	d_Barite	Celestite
react	1097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.77E-07	5.77E-07	0.00E+00
react	1098	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.93E-07	6.93E-07	0.00E+00
react	1099	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.95E-06	2.95E-06	0.00E+00
react	1100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.91E-06	2.91E-06	0.00E+00
react	1101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.62E-06	3.62E-06	0.00E+00
react	1102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Celestite	Anglesite	d_Anglesite	Ba3(AsO4)2	d_Ba3(AsO4)2	Halite	d_Halite	Fluorite	d_Fluorite	Cu(OH)2	d_Cu(OH)2	Tenorite	d_Tenorite	Brochantite	d_Brochantite	Cupricferrite	d_Cupricferrite	Cuprousferrite	d_Cuprousferrite	CoFe2O4	d_CoFe2O4	Hercynite
react	1097	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1098	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1099	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1100	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1101	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1102	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1103	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	1104	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Hercynite	Spinel	d_Spinel	Magnesioferrite	d_Magnesioferrite	Minium	d_Minium	Zn(OH)2	d_Zn(OH)2	Zn(OH)2(am)	d_Zn(OH)2 (am)	Zn(OH)2(beta)	d_Zn(OH)2 (beta)	Zn(OH)2(epsilon)	d_Zn(OH)2 (epsilon)	Zn(OH)2(gamma)	d_Zn(OH)2 (gamma)	Zincite	d_Zincite	ZnO(active)	d_ZnO(active)	Be(OH)2(beta)
react	**1097**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1098**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1099**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1100**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1101**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1102**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1103**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
react	**1104**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

state	soln	d_Be(OH)2 (beta)	CO2(g)	d_CO2(g)	O2(g)	d_O2(g)	si_Calcite	si_Aragonite	si_Dolomite(ordered)	si_Dolomite(disordered)	si_Magnesite	si_Huntite	si_Nesquehonite	si_Artinite	si_Hydromagnesite	si_Goethite	si_Maghemite	si_Hematite	si_Lepidocrocite	si_Magnetite	si_Fe(OH)2	si_Fe3(OH)8	si_Ferrihydrite
react	**1097**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7588	-8.9388	-17.6451	-18.1951	-10.0363	-39.7597	-12.8263	-22.9071	-57.03	-2.0108	-9.4256	-1.6216	-2.8908	-3.6199	-10.7415	-20.4391	-4.7108
react	**1098**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.7733	-8.9533	-17.6735	-18.2235	-10.0502	-39.8159	-12.8402	-22.935	-57.0996	-1.8595	-9.1231	-1.3191	-2.7395	-3.2715	-10.6956	-20.0907	-4.5596
react	**1099**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.4592	-1.6392	-3.6219	-4.1719	-3.3126	-12.2891	-6.1027	-9.4417	-23.3937	-2.3455	-10.0949	-2.2909	-3.2255	0	-6.4523	-16.8193	-5.0455
react	**1100**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.5615	-8.7415	-17.1193	-17.6693	-9.7078	-38.5768	-12.4978	-22.2509	-55.3882	-1.9971	-9.3982	-1.5942	-2.8771	-3.3494	-10.4984	-20.1687	-4.6971
react	**1101**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-8.1865	-8.3665	-16.5831	-17.1331	-9.5466	-37.7183	-12.3367	-21.9288	-54.5826	-3.1366	-11.6773	-3.8733	-4.0166	-6.5077	-11.3777	-23.3271	-5.8367
react	**1102**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.7865	-9.9665	-19.2255	-19.7755	-10.589	-42.4456	-13.379	-24.3162	-60.0972	-1.383	-8.17	-0.366	-2.263	-1.8834	-10.2606	-18.7027	-4.083
react	**1103**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.6437	-9.8237	-18.9386	-19.4886	-10.4449	-41.8704	-13.2349	-23.7259	-59.0746	-1.6216	-8.6472	-0.8432	-2.5016	-2.7189	-10.6189	-19.5382	-4.3216
react	**1104**	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.1808	-9.3608	-18.0126	-18.5626	-9.9818	-40.0181	-12.7718	-23.1001	-57.0594	-1.376	-8.1559	-0.3519	-2.256	-2.135	-10.5263	-18.9542	-4.076

state	soln	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_H-Jarosite	si_Na-Jarosite	si_K-Jarosite	si_Alunite	si_AlOHSO4	si_Al4(OH)10SO4	si_Al(OH)3(am)	si_Gibbsite	si_Boehmite	si_Diaspore	si_Al2O3	si_Pyrolusite	si_Manganite	si_Hausmannite	si_Pyrochroite	si_Bixbyite	si_Rhodochrosite	si_Gypsum	si_Anhydrite	si_Epsomite
react	**1097**	-0.8805	-11.1452	-17.4401	-17.6965	-15.0262	-3.2478	-2.3873	-7.6983	-3.927	-1.418	-1.705	0	-5.9064	-22.0214	-14.6711	-37.713	-13.2148	-28.7177	-9.1263	-3.4336	-3.6836	-6.1746
react	**1098**	-0.7312	-10.6786	-16.8033	-16.9511	-14.3948	-3.0702	-2.2958	-7.6069	-3.927	-1.418	-1.705	0	-5.9064	-21.7948	-14.5499	-37.4547	-13.199	-28.4753	-9.1105	-3.3566	-3.6066	-6.0971
react	**1099**	-2.2704	-25.3483	-29.0244	-25.8916	-23.5451	-10.7627	-7.6774	-12.9885	-3.927	-1.418	-1.705	0	-5.9064	-26.0822	-14.108	-31.3999	-8.0278	-27.5915	-3.9575	-1.406	-1.656	-4.7231
react	**1100**	-0.694	-11.8199	-15.7493	-15.3114	-13.4476	-1.7103	-1.5624	-6.8735	-3.927	-1.418	-1.705	0	-5.9064	-22.7922	-15.2125	-39.1077	-13.5268	-29.8004	-9.4375	-2.4123	-2.6622	-5.0221
react	**1101**	-1.8486	-13.7391	-18.4779	-17.8891	-15.9098	-2.2032	-1.7005	-8.461	-4.4102	-1.9012	-2.1881	-0.4831	-6.8726	-22.7347	-14.8947	-37.8942	-12.9488	-29.165	-8.8593	-1.6925	-1.9424	-4.5162
react	**1102**	0	-10.1016	-15.7167	-16.6275	-13.7353	-3.8403	-2.4673	-7.7784	-3.927	-1.418	-1.705	0	-5.9064	-23.4293	-16.2259	-42.5244	-14.9166	-31.8274	-10.5244	-4.845	-5.095	-7.111
react	**1103**	-0.354	-9.9669	-15.8551	-16.1726	-13.6484	-3.0375	-2.1786	-7.4896	-3.927	-1.418	-1.705	0	-5.9064	-23.0447	-15.9609	-41.849	-14.7712	-31.2973	-10.6811	-4.1113	-4.3613	-6.3761
react	**1104**	-0.0811	-9.2619	-15.309	-15.2739	-13.0185	-3.1446	-2.274	-7.5851	-3.927	-1.418	-1.705	0	-5.9064	-22.5766	-15.6459	-41.057	-14.6092	-30.6673	-10.2187	-4.0444	-4.2943	-6.3089

state	soln	si_Mirabilite	si_Melanterite	si_Fe2(SO4)3	si_Retgersite	si_Morenosite	si_CoSO4	si_MnSO4	si_Zincosite	si_Chalcanthite	si_Siderite	si_Smithsonite	si_Cerussite	si_Malachite	si_Azurite	si_Otavite	si_NiCO3	si_CoCO3	si_Strengite	si_Vivianite	si_Barite	si_Celestite	si_Anglesite
react	**1097**	-10.0893	-7.4588	-36.7763	-9.3441	-9.2392	-14.4914	-13.0942	-14.1187	-9.0914	-8.623	-9.3842	-8.3159	-14.8616	-24.1882	-10.1717	-13.7092	-10.9042	-999.999	-999.999	0	-999.999	-4.4607
react	**1098**	-9.7805	-7.3215	-36.1993	-9.1698	-9.0649	-14.4143	-12.9869	-13.9276	-9.012	-8.5771	-9.2845	-8.3328	-14.8857	-24.2244	-10.1859	-13.6264	-10.9186	-999.999	-999.999	0	-999.999	-4.3861
react	**1099**	-8.6013	-8.4599	-53.3159	-8.9023	-8.7974	-13.7581	-13.1973	-13.2577	-14.5175	-4.3519	-3.2512	-2.5663	-15.1515	-24.632	-4.1731	-7.9953	-4.8989	-999.999	-999.999	0	-999.999	-3.9831
react	**1100**	-7.876	-6.391	-34.2742	-8.0559	-7.9511	-13.6484	-12.5813	-12.7852	-8.5539	-8.3791	-8.8748	-8.6317	-15.4355	-25.0486	-10.4642	-13.2451	-10.8853	-999.999	-999.999	0	-999.999	-3.9524
react	**1101**	-7.2294	-6.9254	-35.5182	-7.4601	-7.3552	-13.0257	-11.6583	-12.2403	-8.333	-9.2582	-8.6747	-8.7772	-15.6834	-25.4204	-10.579	-12.994	-10.6075	-999.999	-999.999	0	-999.999	-3.753
react	**1102**	-11.478	-7.058	-35.7607	-10.581	-10.4761	-15.4274	-14.876	-14.3673	-9.7183	-7.8385	-9.2491	-8.3819	-15.6518	-25.2216	-10.7341	-14.5625	-11.4565	-999.999	-999.999	-0.6925	-999.999	-4.9104
react	**1103**	-10.0028	-7.1275	-35.3718	-9.8464	-9.7415	-14.6927	-14.4419	-14.1313	-9.286	-8.4988	-9.6039	-8.7208	-15.6666	-25.3949	-10.5853	-14.4187	-11.3126	-999.999	-999.999	-0.158	-999.999	-4.6585
react	**1104**	-9.3929	-7.1304	-35.1667	-9.7795	-9.6746	-14.6264	-14.3753	-14.0564	-9.2191	-8.1057	-9.1332	-8.2618	-15.0416	-24.3071	-10.1288	-13.9559	-10.8505	-999.999	-999.999	-0.1247	-999.999	-4.5953

state	soln	si_Ba3(AsO4)2	si_Halite	si_Fluorite	si_Cu(OH)2	si_Tenorite	si_Brochantite	si_Cupricferrite	si_Cuprousferrite	si_CoFe2O4	si_Hercynite	si_Spinel	si_Magnesioferrite	si_Minium	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zincite	si_ZnO(active)	si_Be(OH)2(beta)	si_CO2(g)
react	**1097**	-3.7101	-8.9613	-6.4868	-7.915	-6.885	-24.6765	-8.2689	2.1566	1.2898	-6.3245	-18.9124	-15.7101	-55.4237	-9.8987	-10.1727	-9.4527	-9.2327	-9.4327	-9.0327	-8.8871	-4.9288	-3.5385
react	**1098**	-3.9061	-8.8591	-6.5167	-7.9271	-6.8971	-24.6334	-7.9784	2.1903	1.5779	-6.2786	-18.9263	-15.4215	-55.2636	-9.7991	-10.0731	-9.3531	-9.1331	-9.3331	-8.9331	-8.7875	-4.9411	-3.5385
react	**1099**	-4.983	-9.0896	-2.6064	-8.0509	-7.0209	-30.5101	-9.074	6.31	6.6439	-2.0352	-12.1706	-9.6376	-47.3683	-3.7476	-4.0216	-3.3016	-3.0816	-3.2816	-2.8815	-2.7359	-0.7493	-3.5567
react	**1100**	-6.3812	-7.6908	-6.6414	-8.2024	-7.1724	-25.001	-8.5288	2.1123	1.3353	-6.0814	-18.5846	-15.3549	-56.8323	-9.3901	-9.6641	-8.9441	-8.7241	-8.9241	-8.5241	-8.3785	-5.1773	-3.5377
react	**1101**	-8.0562	-7.5903	-5.6088	-8.3264	-7.2964	-25.1521	-10.9318	1.109	-0.666	-7.9269	-19.3898	-17.473	-57.7896	-9.1902	-9.4642	-8.7442	-8.5242	-8.7242	-8.3241	-8.1785	-5.1158	-3.5376
react	**1102**	-4.754	-8.7733	-9.2705	-8.4619	-7.4319	-26.9441	-7.5602	2.0905	1.6894	-5.8436	-19.7687	-15.3108	-56.2389	-10.0673	-10.3413	-9.6213	-9.4013	-9.6013	-9.2013	-9.0557	-5.7443	-3.2349
react	**1103**	-4.296	-8.5645	-7.9973	-8.3183	-7.2883	-26.081	-7.8938	1.8759	1.6582	-6.2019	-19.3226	-15.3419	-56.1101	-10.12	-10.394	-9.674	-9.454	-9.654	-9.254	-9.1084	-5.3112	-3.5369
react	**1104**	-4.0253	-8.1211	-7.5665	-8.1561	-7.126	-25.5273	-7.2402	2.1308	2.3112	-6.1092	-19.1599	-14.6879	-55.3281	-9.9497	-10.2237	-9.5037	-9.2837	-9.4837	-9.0837	-8.9381	-5.1572	-3.2365

state	soln	si_O2(g)	TDS_mgL	Na_mgL	K_mgL	Ca_mgL	Mg_mgL	Cl_mgL	SO4_mgL	HCO3_mgL	CO3_mgL	CO2_mgL	F_mgL	Si_mgL	Al_mgL	Fe_mgL	Mn_mgL	B_ugL	Be_ugL	Co_ugL	Cr_ugL	Cu_ugL	Ni_ugL	Zn_ugL	Pb_ugL	Cd_ugL
react	**1097**	-48.3307	3.42E+01	5.00E+00	1.00E+00	3.00E+00	1.00E+00	7.62E+00	1.59E+01	5.80E-03	6.17E-09	4.40E-95	1.00E-01	0.00E+00	1.76E-01	1.00E-01	1.40E-02	1.90E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.00E+00	3.50E+01	1.00E+00	1.00E-01
react	**1098**	-47.909	3.90E+01	6.50E+00	1.00E+00	3.00E+00	1.00E+00	7.44E+00	1.94E+01	5.75E-03	6.09E-09	4.40E-95	1.00E-01	0.00E+00	1.84E-01	1.15E-01	1.50E-02	1.75E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	2.50E+00	4.55E+01	1.00E+00	1.00E-01
react	**1099**	-66.8262	2.57E+02	1.05E+01	1.00E+00	5.80E+01	5.00E+00	3.00E+00	1.72E+02	7.20E+00	1.10E-02	4.40E-95	2.00E-01	0.00E+00	1.20E-04	1.89E-03	2.00E-03	2.40E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	4.70E+01	1.00E+00	1.00E-01
react	**1100**	-49.2483	1.51E+02	3.20E+01	1.00E+00	9.00E+00	4.00E+00	2.37E+01	7.97E+01	4.78E-03	4.46E-09	4.40E-95	1.00E-01	0.00E+00	4.30E-01	3.40E-01	1.30E-02	2.10E+02	1.00E+00	2.00E+00	1.00E+00	1.00E+00	1.10E+01	2.15E+02	1.00E+00	1.00E-01
react	**1101**	-50.2892	2.88E+02	4.90E+01	2.00E+00	2.80E+01	7.50E+00	2.04E+01	1.80E+02	4.63E-03	4.39E-09	4.40E-95	1.00E-01	0.00E+00	3.25E-01	6.00E-02	6.45E-02	2.50E+02	1.50E+00	5.00E+00	1.00E+00	1.00E+00	2.55E+01	4.47E+02	1.00E+00	1.00E-01
react	**1102**	-47.7429	3.12E+01	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.95E+01	2.00E+00	4.30E-03	1.68E-09	4.40E-95	1.00E-01	0.00E+00	8.20E-01	2.16E+00	2.00E-03	3.50E+02	1.00E+00	1.00E+00	3.00E+00	2.00E+00	1.00E+00	1.70E+02	3.00E+00	1.00E-01
react	**1103**	-47.2644	3.46E+01	7.00E+00	1.00E+00	1.00E+00	1.00E+00	1.35E+01	1.00E+01	3.60E-03	2.37E-09	4.40E-95	1.00E-01	0.00E+00	3.35E-01	3.40E-01	1.00E-03	2.50E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.40E+01	1.00E+00	1.00E-01
react	**1104**	-46.6522	4.95E+01	1.30E+01	1.00E+00	1.00E+00	1.00E+00	2.04E+01	1.20E+01	8.81E-03	7.15E-09	4.40E-95	1.00E-01	0.00E+00	2.51E-01	2.90E-01	1.00E-03	3.20E+02	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	5.50E+01	1.00E+00	1.00E-01

state	soln	As_ugL	U_ugL	V_ugL	NO3_mgL	NH4_mgL	PO4_mgL
react	**1097**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1098**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1099**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1100**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1101**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1102**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1103**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95
react	**1104**	1.00E+00	0.00E+00	1.00E+01	6.20E-95	1.80E-95	9.50E-95

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Al(OH)3(am)	si_Al2O3	si_Al4(OH)10SO4	si_AlAsO4:2H2O	si_AlOHSO4	si_Alunite	si_Anglesite
i_soln	1	4.7	4	3.3E-05	1.2E-03	1	1.10E-16	7.18E-12	1.74E-04	5.12E-05	2.50E-05	4.11E-05	7.03E-04	4.16E-05	3.00E-05	5.26E-06	3.21E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.988	-0.029	2.562	-5.387	-0.944	3.257	-4.715
i_soln	2	4.8	4	3.4E-05	1.0E-03	1	-1.47E-19	-1.03E-14	2.61E-04	2.56E-05	2.50E-05	4.11E-05	5.97E-04	7.29E-05	2.00E-05	5.26E-06	1.83E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.858	0.232	3.169	-5.335	-0.728	3.618	-4.431
i_soln	3	5	4	3.1E-05	6.3E-04	1	8.62E-14	9.59E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.11E-04	2.08E-05	2.00E-05	5.26E-06	1.74E-05	1.73E-07	0.00E+00	0.00E+00	3.09E-07	-0.659	0.631	3.088	-5.318	-1.407	2.663	-5.364
i_soln	4	5.1	4	7.6E-05	7.4E-04	1	3.99E-13	3.85E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.81E-04	2.08E-05	2.00E-05	5.26E-06	2.04E-05	3.15E-08	0.00E+00	0.00E+00	3.09E-07	-0.204	1.541	4.688	-4.962	-1.172	3.688	-5.389
i_soln	5	4.7	4	1.8E-05	1.1E-03	1	5.02E-17	3.36E-12	1.74E-04	5.12E-05	2.50E-05	4.11E-05	6.65E-04	5.20E-05	2.00E-05	5.26E-06	6.43E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-1.128	-0.307	2.133	-5.526	-0.955	3.096	-4.587
i_soln	6	4.5	4	-2.0E-05	8.8E-04	1	3.55E-17	2.79E-12	2.17E-04	5.12E-05	2.50E-05	4.11E-05	5.66E-04	4.16E-05	3.00E-05	5.26E-06	3.46E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-1.949	-1.951	-0.807	-6.254	-1.429	1.127	-4.506
i_soln	7	9.1	4	3.5E-04	8.3E-04	1	-1.08E-19	-9.23E-15	1.31E-04	2.56E-05	1.75E-04	4.11E-05	2.63E-04	2.08E-05	2.20E-04	1.05E-05	6.98E-06	1.57E-08	0.00E+00	0.00E+00	2.00E-07	-1.995	-2.042	-10.432	-12.933	-10.918	-13.598	-7.201
i_soln	8	9.1	4	3.8E-04	9.4E-04	1	-1.36E-15	-1.07E-10	8.70E-05	2.56E-05	2.25E-04	4.11E-05	2.62E-04	3.12E-05	2.50E-04	1.58E-05	8.24E-06	1.57E-08	0.00E+00	0.00E+00	2.37E-07	-2.056	-2.165	-10.509	-12.998	-10.811	-13.445	-7.057
i_soln	9	8.8	4	2.3E-04	3.1E-03	1	-2.47E-15	-7.31E-11	1.31E-04	2.56E-05	7.99E-04	4.11E-05	1.47E-04	7.29E-04	1.80E-04	2.63E-05	1.43E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.139	-2.331	-8.945	-12.534	-8.997	-10.213	-5.372
i_soln	10	8.1	4	2.6E-04	3.4E-03	1	-1.09E-17	-2.90E-13	1.31E-04	2.56E-05	7.74E-04	1.65E-04	3.28E-04	7.60E-04	1.60E-04	1.05E-05	6.63E-06	4.72E-08	0.00E+00	0.00E+00	3.64E-08	-0.941	0.066	-2.740	-9.960	-6.388	-4.497	-4.695
i_soln	11	7.4	4	2.2E-04	5.1E-03	1	2.83E-15	5.18E-11	3.92E-04	2.56E-05	1.75E-04	1.11E-03	2.62E-04	1.32E-03	6.00E-05	1.58E-05	1.59E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-0.037	1.874	2.493	-7.765	-3.867	0.742	-4.020
i_soln	12	4	4	-1.8E-04	4.9E-02	1	1.28E-15	2.48E-12	6.54E-04	7.69E-05	1.48E-02	3.51E-03	5.55E-03	1.61E-02	1.00E-05	5.28E-06	8.97E-07	3.15E-08	0.00E+00	0.00E+00	2.01E-06	-5.200	-8.452	-10.634	-10.012	-1.503	-2.679	-3.544
i_soln	13	7.8	4	4.3E-04	4.6E-02	1	-3.08E-18	-6.33E-15	3.92E-04	2.56E-05	1.43E-02	3.38E-03	3.68E-03	1.59E-02	4.21E-04	3.17E-05	8.97E-07	1.58E-08	0.00E+00	0.00E+00	1.82E-08	-2.129	-2.310	-5.944	-10.871	-6.026	-5.331	-3.848
i_soln	14	7.2	4	7.3E-04	5.0E-04	1	1.24E-15	1.56E-10	1.31E-04	5.12E-05	2.50E-05	4.11E-05	1.81E-04	2.08E-05	4.00E-05	5.26E-06	7.14E-05	3.15E-08	0.00E+00	0.00E+00	1.27E-07	0.804	3.556	4.585	-6.200	-4.298	0.847	-4.871
i_soln	15	8.3	4	8.8E-04	2.4E-03	1	5.60E-13	1.80E-08	8.70E-05	2.56E-05	6.99E-04	4.11E-05	5.94E-04	1.35E-04	6.30E-04	3.68E-05	4.48E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.678	0.592	-2.817	-10.069	-7.254	-5.761	-5.911
i_soln	16	6.3	4	2.3E-04	5.0E-04	1	8.73E-15	1.16E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.66E-04	3.12E-05	4.00E-05	5.26E-06	2.40E-05	1.57E-08	0.00E+00	0.00E+00	9.10E-08	1.030	4.008	7.464	-5.008	-2.097	4.273	-4.862
i_soln	17	4.9	4	2.4E-05	7.0E-04	1	3.42E-13	3.52E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.31E-04	3.12E-05	2.00E-05	5.26E-06	2.51E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.847	0.254	2.697	-5.411	-1.233	2.722	-4.905
i_soln	18	4.9	4	2.4E-05	8.0E-04	1	2.83E-14	2.44E-09	2.17E-04	2.56E-05	2.50E-05	4.11E-05	5.25E-04	3.12E-05	3.00E-05	5.26E-06	2.70E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.845	0.257	2.700	-5.410	-1.235	2.719	-4.737
i_soln	19	4.45	4	-3.4E-05	5.7E-04	1	6.77E-18	7.72E-13	1.96E-04	2.56E-05	2.50E-05	4.11E-05	3.68E-04	3.64E-05	9.99E-06	5.26E-06	4.30E-06	1.57E-08	0.00E+00	0.00E+00	2.18E-07	-2.781	-3.615	-4.031	-7.084	-2.158	-1.511	-5.092
i_soln	20	5.2	4	6.4E-05	5.4E-04	1	1.81E-15	2.33E-10	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.68E-04	1.04E-05	2.00E-05	5.26E-06	8.60E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.154	1.641	4.419	-5.010	-1.591	3.001	-5.649
i_soln	21	5.3	4	3.7E-05	4.7E-04	1	3.08E-13	4.50E-08	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.21E-04	1.04E-05	2.00E-05	5.26E-06	1.54E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.264	1.421	3.801	-5.220	-1.879	2.416	-5.623
i_soln	22	5.6	4	7.0E-05	4.5E-04	1	8.85E-14	1.30E-08	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.15E-04	1.04E-05	2.00E-05	5.26E-06	1.45E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	0.287	2.521	5.410	-4.979	-1.920	3.183	-5.617
i_soln	23	4.9	4	3.5E-05	8.5E-04	1	-1.45E-19	-1.20E-14	2.17E-04	2.56E-05	2.50E-05	4.11E-05	5.53E-04	3.12E-05	2.00E-05	5.26E-06	2.29E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-08	-0.733	0.482	3.134	-5.299	-1.138	3.025	-4.754
i_soln	24	4.6	4	-2.0E-05	6.9E-04	1	6.88E-17	6.32E-12	3.04E-04	2.56E-05	2.50E-05	4.11E-05	4.66E-04	4.16E-05	9.99E-06	5.26E-06	3.40E-06	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-2.173	-2.398	-1.850	-6.507	-1.802	-0.041	-5.050
i_soln	25	4.6	4	-2.2E-05	1.4E-03	1	3.52E-15	1.45E-10	9.79E-04	2.56E-05	2.50E-05	4.11E-05	1.05E-03	8.85E-05	9.99E-06	5.26E-06	2.87E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.258	-2.567	-1.879	-6.597	-1.577	0.319	-4.775
i_soln	26	4.4	4	-4.2E-05	2.1E-03	1	8.89E-16	2.49E-11	1.48E-03	2.56E-05	2.50E-05	8.23E-05	1.43E-03	1.77E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-6.141	-10.333	-16.712	-10.461	-4.761	-10.137	-4.506
i_soln	27	4.7	4	-1.7E-05	4.7E-04	1	6.01E-19	8.72E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.63E-04	4.16E-05	2.00E-05	5.26E-06	4.83E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.265	-2.583	-2.399	-6.658	-2.073	-0.575	-5.019
i_soln	28	4.2	4	-6.5E-05	1.3E-03	1	6.96E-15	3.38E-10	6.09E-04	2.56E-05	2.50E-05	1.23E-04	7.47E-04	1.46E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.09E-07	-3.990	-6.033	-7.786	-8.479	-2.285	-3.231	-4.553
i_soln	29	4.3	4	-5.2E-05	1.0E-03	1	1.61E-15	1.02E-10	4.78E-04	2.56E-05	2.50E-05	8.23E-05	5.86E-04	1.04E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-4.370	-6.793	-9.636	-8.749	-2.996	-4.929	-4.668
i_soln	30	5.5	4	1.4E-04	6.8E-04	1	-1.66E-19	-1.66E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.57E-04	2.08E-05	3.00E-05	5.26E-06	3.67E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	0.484	2.916	6.677	-4.681	-1.245	4.629	-4.873
i_soln	31	5	4	1.0E-04	1.1E-03	1	3.01E-20	1.94E-15	1.74E-04	5.12E-05	2.50E-05	4.11E-05	7.08E-04	4.16E-05	3.00E-05	5.26E-06	4.80E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-0.224	1.501	5.052	-4.887	-0.748	4.713	-4.560
i_soln	32	5.8	4	1.5E-04	7.8E-04	1	5.68E-19	4.82E-14	2.17E-04	2.56E-05	2.50E-05	4.11E-05	4.97E-04	4.16E-05	3.00E-05	5.26E-06	6.11E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.761	3.469	7.493	-4.419	-1.259	5.176	-4.354
i_soln	33	5.1	4	9.9E-05	8.4E-04	1	1.56E-18	1.32E-13	1.30E-04	2.56E-05	2.50E-05	4.11E-05	5.70E-04	1.04E-05	2.00E-05	5.26E-06	3.38E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	-0.100	1.748	4.783	-4.859	-1.387	3.360	-5.410
i_soln	34	5.3	4	1.8E-04	8.7E-04	1	-1.39E-18	-1.14E-13	8.70E-05	2.56E-05	2.50E-05	4.11E-05	5.87E-04	1.04E-05	3.00E-05	5.26E-06	5.62E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	0.383	2.714	6.330	-4.578	-1.290	4.236	-5.223
i_soln	35	4.7	4	2.1E-05	1.0E-03	1	2.15E-13	1.61E-08	1.31E-04	2.56E-05	2.50E-05	4.11E-05	6.19E-04	3.12E-05	2.00E-05	5.26E-06	5.73E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-08	-1.098	-0.248	2.027	-5.496	-1.150	2.435	-4.983
i_soln	36	4.9	4	1.3E-04	1.6E-03	1	7.51E-15	3.61E-10	1.74E-04	7.67E-05	2.50E-05	4.11E-05	1.01E-03	2.08E-05	2.00E-05	5.26E-06	6.61E-05	4.72E-08	0.00E+00	0.00E+00	3.64E-08	-0.260	1.427	4.726	-4.530	-0.963	4.319	-4.707
i_soln	37	4.9	4	6.4E-05	1.1E-03	1	8.97E-19	6.01E-14	2.17E-04	5.12E-05	2.50E-05	4.11E-05	7.12E-04	2.08E-05	2.00E-05	5.26E-06	2.88E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.523	0.901	3.755	-5.091	-1.146	3.518	-4.979
i_soln	38	6.5	4	1.4E-03	1.2E-03	1	2.89E-15	1.62E-10	2.61E-04	5.12E-05	7.49E-05	4.11E-05	5.25E-04	4.16E-05	7.99E-05	1.05E-05	1.16E-04	7.87E-08	0.00E+00	0.00E+00	7.46E-07	1.742	5.431	10.004	-4.553	-1.692	6.291	-4.163
i_soln	39	5.9	4	1.1E-03	2.1E-03	1	1.61E-15	4.97E-11	3.92E-04	7.67E-05	7.49E-05	4.11E-05	1.44E-03	6.25E-05	5.00E-05	1.05E-05	1.90E-04	1.42E-07	0.00E+00	0.00E+00	4.91E-07	1.691	5.329	11.132	-3.910	-0.410	8.374	-3.902
i_soln	40	5.3	4	1.8E-04	1.6E-03	1	1.01E-14	4.31E-10	5.66E-04	5.12E-05	2.50E-05	4.11E-05	8.80E-04	1.67E-04	4.00E-05	1.05E-05	6.72E-05	6.30E-08	0.00E+00	0.00E+00	3.64E-08	0.370	2.688	7.463	-4.296	-0.117	6.865	-3.652
i_soln	41	6	4	2.0E-04	5.8E-04	1	5.43E-16	6.05E-11	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.03E-04	1.04E-05	4.00E-05	5.26E-06	4.12E-05	1.57E-08	0.00E+00	0.00E+00	6.55E-07	0.969	3.885	7.334	-4.727	-2.042	4.021	-5.335
i_soln	42	6.8	4	4.2E-04	5.1E-04	1	6.66E-14	8.43E-09	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.67E-04	1.04E-05	4.00E-05	5.26E-06	6.20E-05	3.15E-08	0.00E+00	0.00E+00	5.10E-07	0.939	3.826	5.621	-5.750	-3.666	1.544	-5.210
i_soln	43	4.9	4	-5.5E-06	4.8E-04	1	6.31E-15	1.03E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	1.45E-04	8.33E-05	2.00E-05	5.26E-06	7.88E-06	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-1.598	-1.249	0.169	-6.160	-1.507	1.425	-4.725
i_soln	44	4.6	4	-2.5E-05	4.6E-04	1	1.32E-19	2.04E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	1.75E-04	7.29E-05	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.27E-07	-4.659	-7.371	-11.523	-8.992	-4.016	-6.954	-4.771
i_soln	45	4.6	4	-2.5E-05	4.4E-04	1	9.12E-21	1.42E-15	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.15E-04	5.20E-05	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-4.881	-7.814	-12.555	-9.213	-4.382	-7.908	-4.912
i_soln	46	5.5	4	8.5E-05	5.2E-04	1	6.64E-14	8.82E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.32E-04	2.08E-05	3.00E-05	5.26E-06	2.08E-05	1.57E-08	0.00E+00	0.00E+00	4.37E-07	0.273	2.495	5.849	-4.889	-1.441	4.027	-5.028
i_soln	47	6.8	4	4.7E-04	6.4E-04	1	3.67E-14	3.85E-09	2.61E-04	2.56E-05	2.50E-05	4.11E-05	1.68E-04	8.33E-05	5.99E-05	1.58E-05	2.63E-05	1.57E-08	0.00E+00	0.00E+00	1.09E-07	1.013	3.974	6.817	-5.679	-2.693	3.563	-4.110
i_soln	48	7.7	4	2.6E-04	6.7E-04	1	3.93E-15	3.75E-10	3.04E-04	2.56E-05	4.99E-05	4.11E-05	2.57E-04	5.20E-05	1.20E-04	2.11E-05	1.29E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-0.394	1.160	-0.817	-8.588	-6.106	-3.770	-5.093
i_soln	49	5.5	4	2.2E-04	8.9E-04	1	2.54E-20	1.95E-15	1.31E-04	2.56E-05	2.50E-05	4.11E-05	6.28E-04	1.04E-05	2.00E-05	5.26E-06	7.34E-05	6.29E-08	0.00E+00	0.00E+00	1.18E-06	0.695	3.337	7.199	-4.472	-1.355	4.617	-5.077
i_soln	50	6.4	4	1.3E-03	1.7E-03	1	4.06E-19	1.61E-14	3.48E-04	7.67E-05	4.99E-05	4.11E-05	7.87E-04	1.35E-04	4.00E-05	1.05E-05	2.65E-04	1.57E-07	0.00E+00	0.00E+00	4.19E-07	1.763	5.473	10.778	-4.112	-0.980	7.807	-3.491

state	soln	si_Anhydrite	si_Antlerite	si_Aragonite	si_Arsenolite	si_Artinite	si_As2O5	si_Atacamite	si_Azurite	si_Ba(OH)2:8H2O	si_Ba2V2O7:2H2O	si_Ba3(AsO4)2	si_Ba3(VO4)2:4H2O	si_BaCrO4	si_BaF2	si_Barite	si_Be(OH)2(alpha)	si_Be(OH)2(am)	si_Be(OH)2(beta)	si_Bianchite	si_Birnessite	si_Bixbyite	si_Boehmite	si_Brochantite
i_soln	1	-4.897	-18.296	-8.186	-32.844	-20.922	-27.504	-12.276	-21.046	-20.792	-26.311	-1.080	-39.777	-31.894	-16.096	-0.403	-4.589	-4.889	-4.189	-8.282	-24.151	-28.876	1.234	-23.238
i_soln	2	-4.611	-17.601	-8.163	-33.958	-20.697	-27.661	-12.039	-20.792	-20.572	-25.471	-0.578	-38.717	-31.346	-15.734	-0.098	-4.404	-4.704	-4.004	-8.067	-24.050	-28.874	1.364	-22.339
i_soln	3	-5.072	-14.095	-7.754	-36.284	-19.873	-28.024	-9.475	-16.423	-20.372	-24.272	-0.341	-37.317	-30.130	-15.123	-0.776	-4.037	-4.337	-3.637	-8.698	-22.003	-25.180	1.564	-17.372
i_soln	4	-5.096	-15.953	-7.563	-37.482	-19.485	-28.223	-10.601	-18.071	-20.179	-23.485	0.040	-36.337	-29.447	-15.439	-0.803	-3.869	-4.169	-3.469	-8.821	-21.607	-24.588	2.019	-19.776
i_soln	5	-4.768	-18.164	-8.361	-32.842	-21.096	-27.503	-12.297	-21.393	-20.831	-26.391	-1.199	-39.896	-32.109	-15.857	-0.315	-4.588	-4.888	-4.188	-8.161	-23.974	-28.522	1.095	-23.104
i_soln	6	-4.814	-18.989	-8.574	-30.867	-21.703	-27.316	-12.947	-22.206	-21.238	-28.004	-2.231	-41.916	-33.524	-15.414	-0.374	-4.957	-5.257	-4.557	-8.332	-24.767	-29.707	0.273	-24.320
i_soln	7	-4.218	-7.562	-0.461	-94.201	-5.238	-40.583	-3.965	-5.188	-12.049	-9.532	12.069	-14.255	-5.735	-10.024	-0.629	-0.419	-0.719	-0.019	-10.140	-5.814	-1.000	0.227	-5.936
i_soln	8	-3.945	-7.449	-0.305	-94.216	-5.194	-40.590	-4.005	-5.139	-12.051	-9.542	12.055	-14.267	-5.737	-9.675	-0.461	-0.419	-0.719	-0.019	-10.087	-5.745	-0.864	0.166	-5.842
i_soln	9	-2.173	-5.936	-0.277	-89.627	-6.384	-39.496	-4.224	-5.218	-12.645	-9.778	11.369	-15.097	-7.160	-9.251	0.842	-0.412	-0.712	-0.012	-8.515	-8.131	-5.036	0.083	-4.457
i_soln	10	-2.179	-4.861	-1.032	-78.524	-7.323	-36.744	-3.400	-4.229	-13.999	-10.441	10.057	-17.114	-10.835	-10.012	0.898	-0.630	-0.930	-0.230	-8.237	-10.631	-8.636	1.281	-3.493
i_soln	11	-2.650	-7.038	-2.873	-67.759	-8.294	-34.162	-5.332	-7.530	-15.248	-11.334	8.895	-19.255	-14.767	-9.573	1.267	-1.159	-1.459	-0.759	-7.629	-13.170	-12.314	2.185	-6.936
i_soln	12	-0.313	-19.408	-7.723	-28.892	-21.157	-28.329	-13.922	-26.746	-22.101	-31.732	-5.827	-46.506	-38.216	-12.577	1.942	-6.338	-6.638	-5.938	-5.986	-25.701	-30.575	-2.978	-25.938
i_soln	13	-0.322	-6.529	-0.099	-75.013	-5.947	-36.189	-4.250	-6.196	-14.814	-11.593	8.174	-19.079	-12.841	-9.503	1.635	-0.866	-1.166	-0.466	-6.649	-12.537	-11.847	0.093	-6.234
i_soln	14	-5.021	-8.034	-3.945	-63.265	-11.659	-32.715	-5.087	-7.199	-15.822	-12.005	8.617	-20.501	-15.632	-10.597	-0.580	-1.316	-1.616	-0.916	-8.560	-13.583	-12.740	3.026	-7.840
i_soln	15	-2.910	-7.899	-0.235	-81.613	-7.252	-37.489	-4.611	-5.339	-13.743	-10.440	10.080	-16.857	-9.863	-9.051	0.025	-0.534	-0.834	-0.134	-8.696	-10.094	-7.960	1.544	-7.168
i_soln	16	-4.847	-11.854	-5.111	-52.201	-14.625	-30.783	-7.883	-11.724	-17.704	-14.449	4.902	-24.827	-21.706	-11.649	-0.488	-2.237	-2.537	-1.837	-8.618	-17.330	-18.433	3.252	-13.591
i_soln	17	-4.914	-17.468	-7.953	-35.106	-20.275	-27.835	-11.845	-20.149	-20.422	-24.772	-0.303	-37.869	-30.982	-15.196	-0.465	-4.215	-4.515	-3.815	-8.447	-23.336	-27.645	1.375	-21.989
i_soln	18	-4.921	-17.488	-7.780	-35.109	-20.106	-27.837	-11.772	-19.814	-20.343	-24.615	-0.069	-37.632	-30.907	-15.127	-0.389	-4.218	-4.518	-3.818	-8.394	-23.640	-28.254	1.377	-22.015
i_soln	19	-4.800	-19.139	-9.140	-30.458	-22.357	-27.311	-13.250	-23.412	-21.158	-28.044	-1.987	-41.876	-33.989	-13.907	-0.191	-5.047	-5.347	-4.647	-8.738	-24.353	-28.779	-0.559	-24.555
i_soln	20	-5.357	-16.696	-7.361	-38.674	-19.076	-28.419	-10.997	-18.356	-20.229	-23.185	-0.306	-36.088	-28.999	-15.189	-1.322	-3.698	-3.998	-3.298	-9.216	-22.429	-26.432	2.069	-20.610
i_soln	21	-5.332	-16.262	-7.165	-39.875	-18.677	-28.620	-10.748	-17.759	-20.219	-22.766	-0.478	-35.659	-28.324	-14.600	-1.490	-3.538	-3.838	-3.138	-9.560	-22.026	-25.825	1.958	-19.972
i_soln	22	-5.323	-15.060	-6.599	-43.511	-17.510	-29.237	-9.860	-16.034	-19.345	-19.826	1.527	-31.844	-26.495	-13.705	-1.208	-3.093	-3.393	-2.693	-9.245	-20.223	-22.820	2.509	-18.172
i_soln	23	-4.937	-16.606	-7.958	-35.111	-20.285	-27.838	-11.152	-19.269	-20.386	-24.700	-0.197	-37.759	-30.650	-15.392	-0.447	-4.218	-4.518	-3.818	-8.507	-23.642	-28.258	1.489	-20.835
i_soln	24	-4.757	-18.513	-8.847	-31.786	-21.769	-27.375	-12.713	-22.538	-21.043	-27.214	-1.706	-40.932	-33.114	-14.396	-0.328	-4.766	-5.066	-4.366	-8.883	-24.360	-29.093	0.049	-23.635
i_soln	25	-4.471	-18.317	-8.871	-31.805	-21.816	-27.384	-12.441	-22.652	-20.942	-27.011	-1.411	-40.627	-33.043	-14.172	0.083	-4.787	-5.087	-4.387	-8.238	-24.862	-30.098	-0.036	-23.477
i_soln	26	-4.192	-18.905	-9.288	-30.130	-22.049	-27.347	-12.968	-23.933	-21.117	-28.163	-1.900	-41.953	-34.314	-10.470	0.607	-5.381	-5.681	-4.981	-7.242	-25.206	-30.386	-3.919	-24.494
i_soln	27	-4.728	-18.053	-8.340	-32.821	-21.053	-27.493	-12.633	-21.301	-21.383	-27.493	-2.842	-41.550	-32.937	-14.202	-0.847	-4.577	-4.877	-4.177	-8.873	-24.428	-29.429	-0.043	-22.963
i_soln	28	-4.249	-19.673	-9.669	-29.202	-22.460	-27.683	-13.776	-25.023	-21.661	-30.052	-3.869	-44.387	-35.845	-13.138	0.388	-5.565	-5.865	-5.165	-7.523	-25.685	-30.944	-1.768	-25.627
i_soln	29	-4.368	-19.360	-9.458	-29.562	-22.391	-27.463	-13.550	-24.381	-21.482	-29.293	-3.111	-43.449	-35.127	-12.132	0.236	-5.391	-5.691	-4.991	-7.824	-25.450	-30.673	-2.148	-25.099
i_soln	30	-5.055	-15.217	-6.619	-42.306	-17.740	-29.035	-10.024	-16.290	-19.376	-20.285	1.634	-32.335	-26.707	-14.446	-0.761	-3.238	-3.538	-2.838	-8.594	-20.633	-23.440	2.706	-18.541
i_soln	31	-4.865	-17.067	-7.595	-36.302	-19.731	-28.033	-11.374	-19.266	-20.183	-23.893	0.217	-36.750	-29.783	-15.818	-0.363	-4.050	-4.350	-3.650	-8.192	-22.650	-26.473	1.999	-21.409
i_soln	32	-4.751	-13.737	-6.076	-44.768	-16.601	-29.066	-9.108	-14.623	-18.625	-17.612	3.857	-28.911	-24.556	-13.193	-0.301	-2.830	-3.130	-2.430	-8.302	-20.041	-22.855	2.983	-16.471
i_soln	33	-5.418	-16.287	-7.565	-37.486	-19.491	-28.225	-10.538	-18.086	-20.292	-23.712	-0.302	-36.678	-29.563	-15.762	-1.235	-3.871	-4.171	-3.471	-9.213	-22.540	-26.453	2.122	-20.115
i_soln	34	-5.405	-15.481	-7.004	-39.892	-18.531	-28.628	-9.929	-16.568	-19.918	-22.164	0.417	-34.756	-28.037	-15.561	-1.248	-3.545	-3.845	-3.145	-9.205	-21.741	-25.255	2.605	-18.911
i_soln	35	-4.989	-17.472	-8.357	-32.840	-21.089	-27.502	-11.716	-20.476	-21.045	-26.818	-1.838	-40.537	-32.142	-16.125	-0.753	-4.585	-4.885	-4.185	-8.687	-24.447	-29.468	1.125	-22.106
i_soln	36	-5.254	-16.465	-7.977	-33.928	-20.323	-27.246	-10.601	-18.830	-20.284	-24.495	0.701	-37.453	-30.170	-16.263	-0.642	-4.234	-4.534	-3.834	-8.437	-23.362	-27.698	1.962	-20.547
i_soln	37	-5.161	-17.756	-7.964	-35.118	-20.297	-27.841	-11.664	-20.201	-20.367	-24.663	-0.145	-37.704	-30.637	-15.800	-0.646	-4.223	-4.523	-3.823	-8.556	-23.649	-28.271	1.699	-22.295
i_soln	38	-4.299	-9.010	-4.066	-54.829	-13.680	-31.297	-5.693	-8.192	-16.651	-11.808	7.548	-21.133	-18.771	-10.705	0.260	-2.026	-2.326	-1.626	-7.974	-15.641	-15.455	3.964	-9.696
i_soln	39	-4.188	-10.530	-5.238	-47.249	-16.074	-29.907	-6.564	-10.946	-17.709	-14.813	5.764	-25.196	-22.333	-13.088	0.534	-2.713	-3.013	-2.313	-7.655	-18.247	-19.467	3.913	-12.168
i_soln	40	-4.247	-13.493	-6.908	-38.711	-18.460	-28.038	-9.225	-15.518	-19.311	-20.951	2.827	-32.936	-27.459	-14.376	0.546	-3.563	-3.863	-3.163	-7.515	-21.770	-25.312	2.592	-16.657
i_soln	41	-5.332	-13.510	-5.594	-48.432	-15.711	-30.098	-8.585	-13.261	-18.342	-16.339	3.676	-27.355	-23.359	-12.694	-1.008	-2.578	-2.878	-2.178	-9.177	-17.675	-18.523	3.191	-15.838
i_soln	42	-5.324	-9.604	-4.417	-58.803	-12.931	-32.084	-5.896	-8.611	-16.659	-12.878	6.739	-22.211	-18.263	-10.719	-0.920	-1.710	-2.010	-1.310	-9.231	-14.581	-13.935	3.161	-10.098
i_soln	43	-4.432	-16.956	-7.949	-35.096	-20.265	-27.830	-12.294	-20.115	-20.571	-25.070	-0.746	-38.315	-31.128	-13.910	-0.136	-4.215	-4.515	-3.815	-8.586	-23.029	-27.031	0.624	-21.467
i_soln	44	-4.478	-18.201	-8.540	-31.778	-21.455	-27.371	-13.110	-21.897	-21.139	-27.406	-1.990	-41.219	-33.222	-11.219	-0.151	-4.905	-5.205	-4.505	-8.422	-23.984	-28.342	-2.437	-23.310
i_soln	45	-4.620	-18.341	-8.537	-31.777	-21.450	-27.371	-13.016	-21.892	-21.102	-27.332	-1.878	-41.107	-33.183	-11.052	-0.259	-4.924	-5.224	-4.524	-8.547	-24.827	-30.028	-2.659	-23.449
i_soln	46	-5.035	-15.176	-6.613	-42.299	-17.727	-29.031	-10.143	-16.263	-19.473	-20.478	1.348	-32.625	-27.099	-14.143	-0.844	-3.236	-3.536	-2.836	-8.903	-19.849	-21.871	2.495	-18.491
i_soln	47	-4.436	-9.651	-4.253	-58.817	-12.776	-32.090	-6.729	-9.208	-16.408	-12.380	7.484	-21.462	-18.015	-9.666	0.230	-1.733	-2.033	-1.333	-8.282	-15.260	-15.294	3.235	-10.461
i_soln	48	-4.340	-7.714	-2.641	-72.025	-9.666	-35.094	-4.817	-6.245	-14.809	-11.054	9.278	-18.537	-13.133	-9.378	-0.176	-0.892	-1.192	-0.492	-8.919	-11.961	-10.496	1.828	-7.210
i_soln	49	-5.382	-13.763	-6.802	-42.314	-17.929	-29.039	-8.704	-14.867	-19.384	-20.299	1.609	-32.356	-26.418	-14.867	-1.090	-3.241	-3.541	-2.841	-9.130	-19.430	-21.033	2.917	-16.495
i_soln	50	-4.004	-8.040	-4.708	-52.348	-14.363	-30.456	-5.235	-8.406	-17.024	-12.488	7.272	-22.186	-19.441	-11.237	0.578	-2.136	-2.436	-1.736	-7.604	-16.311	-16.596	3.985	-8.634

state	soln	si_Brucite	si_Bunsenite	si_Ca(VO3)2	si_Ca2V2O7	si_Ca2V2O7:2H2O	si_Ca3(AsO4)2:4H2O	si_Ca3(VO4)2	si_Ca3(VO4)2:4H2O	si_CaCrO4	si_Calcite	si_Cd(BO2)2	si_Cd(OH)2	si_Cd(OH)2(am)	si_Cd3(OH)2(SO4)2	si_Cd3(OH)4SO4	si_Cd4(OH)6SO4	si_CdCl2	si_CdCl2:1H2O	si_CdCl2:2.5H2O	si_CdF2	si_Cdmetal(alpha)	si_Cdmetal(gamma)	si_CdOHCl
i_soln	1	-11.898	-10.883	-18.575	-25.687	-29.739	-28.912	-42.418	-43.318	-38.172	-8.006	-18.492	-13.388	-13.474	-33.911	-35.776	-41.360	-14.825	-13.790	-13.570	-24.050	-30.658	-30.762	-11.151
i_soln	2	-11.696	-10.682	-17.974	-24.884	-28.936	-28.466	-41.415	-42.315	-37.643	-7.983	-18.180	-13.183	-13.269	-33.128	-35.078	-40.457	-14.960	-13.925	-13.705	-23.703	-30.654	-30.757	-11.116
i_soln	3	-11.281	-10.266	-16.758	-23.252	-27.304	-27.580	-39.366	-40.266	-36.211	-7.574	-18.301	-12.761	-12.847	-33.617	-34.689	-39.646	-15.254	-14.220	-14.000	-22.869	-30.632	-30.735	-11.052
i_soln	4	-11.084	-10.069	-16.162	-22.460	-26.512	-27.190	-38.377	-39.277	-35.525	-7.383	-18.070	-12.567	-12.653	-33.475	-34.327	-39.090	-15.127	-14.093	-13.873	-23.185	-30.638	-30.741	-10.892
i_soln	5	-11.897	-10.882	-18.575	-25.686	-29.738	-28.910	-42.417	-43.317	-38.347	-8.181	-18.324	-13.386	-13.472	-33.650	-35.643	-41.225	-14.870	-13.836	-13.616	-23.770	-30.657	-30.760	-11.173
i_soln	6	-12.290	-11.275	-19.768	-27.272	-31.324	-29.901	-44.396	-45.296	-39.749	-8.394	-19.002	-13.776	-13.862	-34.126	-36.466	-42.438	-14.997	-13.963	-13.743	-23.310	-30.647	-30.750	-11.431
i_soln	7	-3.094	-2.299	-9.634	-7.099	-11.151	-13.050	-14.184	-15.084	-11.108	-0.281	-11.036	-4.688	-4.774	-25.750	-18.646	-15.530	-15.773	-14.739	-14.519	-18.020	-30.759	-30.862	-7.275
i_soln	8	-3.099	-2.315	-9.537	-6.898	-10.950	-12.746	-13.878	-14.778	-11.005	-0.125	-11.106	-4.701	-4.787	-25.449	-18.515	-15.411	-15.790	-14.756	-14.536	-17.683	-30.771	-30.875	-7.290
i_soln	9	-3.770	-2.845	-8.710	-6.196	-10.248	-12.027	-13.301	-14.202	-11.959	-0.097	-11.249	-5.293	-5.379	-23.433	-18.395	-15.885	-16.308	-15.274	-15.054	-17.258	-30.764	-30.867	-7.846
i_soln	10	-4.571	-4.180	-8.082	-6.984	-11.036	-13.526	-15.507	-16.407	-15.696	-0.852	-12.767	-6.665	-6.751	-24.726	-21.099	-19.960	-15.587	-14.552	-14.333	-18.036	-30.736	-30.839	-8.171
i_soln	11	-5.179	-5.126	-8.566	-9.556	-13.608	-17.206	-20.166	-21.066	-20.469	-2.693	-13.772	-8.097	-8.183	-25.789	-23.779	-24.072	-15.824	-14.789	-14.569	-17.780	-30.768	-30.871	-9.005
i_soln	12	-11.781	-11.328	-20.450	-26.631	-30.683	-26.944	-42.431	-43.332	-42.256	-7.543	-19.818	-14.999	-15.085	-31.441	-36.958	-44.153	-13.376	-12.342	-12.122	-20.835	-30.869	-30.973	-11.232
i_soln	13	-4.195	-4.641	-7.299	-5.894	-9.946	-12.047	-14.108	-15.009	-16.582	0.081	-13.425	-7.681	-7.767	-24.676	-22.599	-22.476	-14.013	-12.978	-12.759	-17.729	-31.151	-31.255	-7.892
i_soln	14	-6.876	-5.562	-9.186	-11.275	-15.327	-19.056	-22.984	-23.884	-21.857	-3.765	-13.507	-8.348	-8.434	-29.087	-25.805	-26.349	-15.952	-14.918	-14.698	-18.481	-30.619	-30.722	-9.195
i_soln	15	-4.735	-3.810	-8.194	-6.699	-10.751	-13.076	-14.823	-15.723	-14.583	-0.055	-12.336	-6.262	-6.348	-25.775	-21.019	-19.476	-15.058	-14.023	-13.804	-16.927	-30.732	-30.836	-7.704
i_soln	16	-8.676	-7.662	-9.666	-13.556	-17.608	-22.527	-27.066	-27.966	-27.850	-4.931	-15.554	-10.152	-10.238	-30.547	-29.240	-31.588	-15.622	-14.587	-14.368	-19.454	-30.622	-30.726	-9.931
i_soln	17	-11.484	-10.469	-17.361	-24.058	-28.110	-28.001	-40.376	-41.276	-37.215	-7.773	-18.140	-12.965	-13.051	-33.505	-34.938	-40.099	-15.220	-14.185	-13.966	-23.096	-30.635	-30.739	-11.137
i_soln	18	-11.487	-10.472	-17.365	-24.065	-28.117	-28.013	-40.386	-41.286	-37.222	-7.600	-18.122	-12.971	-13.057	-33.532	-34.962	-40.129	-15.056	-14.022	-13.802	-23.112	-30.642	-30.745	-11.058
i_soln	19	-12.379	-11.188	-20.057	-27.650	-31.702	-30.164	-44.863	-45.763	-40.382	-8.960	-19.542	-13.858	-13.944	-34.166	-36.610	-42.664	-15.347	-14.313	-14.093	-21.965	-30.629	-30.732	-11.647
i_soln	20	-10.876	-9.861	-15.554	-21.644	-25.696	-26.762	-37.354	-38.254	-34.819	-7.181	-17.974	-12.355	-12.441	-33.779	-34.161	-38.712	-15.344	-14.309	-14.089	-22.674	-30.626	-30.729	-10.894
i_soln	21	-10.673	-9.658	-14.951	-20.838	-24.890	-26.353	-36.344	-37.244	-33.950	-6.985	-17.812	-12.150	-12.236	-33.519	-33.724	-38.070	-15.456	-14.422	-14.202	-21.889	-30.621	-30.724	-10.848
i_soln	22	-10.073	-9.058	-13.158	-18.444	-22.496	-25.169	-33.350	-34.250	-32.394	-6.419	-17.129	-11.550	-11.636	-32.901	-32.514	-36.259	-15.472	-14.438	-14.218	-21.267	-30.620	-30.724	-10.555
i_soln	23	-11.489	-10.474	-17.366	-24.068	-28.120	-28.018	-40.390	-41.290	-36.924	-7.778	-17.970	-12.974	-13.060	-33.569	-34.984	-40.153	-15.015	-13.980	-13.760	-23.337	-30.644	-30.748	-11.039
i_soln	24	-12.084	-10.768	-19.162	-26.460	-30.512	-29.342	-43.377	-44.278	-39.327	-8.667	-19.000	-13.567	-13.653	-33.795	-35.986	-41.749	-15.153	-14.118	-13.899	-22.277	-30.637	-30.741	-11.404
i_soln	25	-12.107	-10.792	-19.186	-26.508	-30.560	-29.424	-43.449	-44.349	-39.382	-8.691	-19.207	-13.609	-13.695	-33.303	-35.804	-41.609	-14.500	-13.466	-13.246	-22.197	-30.680	-30.783	-11.099
i_soln	26	-12.226	-11.036	-20.406	-28.148	-32.200	-30.647	-45.510	-46.410	-40.897	-9.108	-19.408	-14.039	-14.125	-33.197	-36.396	-42.632	-14.268	-13.234	-13.014	-18.750	-30.710	-30.813	-11.198
i_soln	27	-11.875	-10.559	-18.553	-25.643	-29.695	-28.834	-42.352	-43.252	-38.603	-8.160	-18.854	-13.351	-13.437	-33.507	-35.519	-41.066	-15.629	-14.594	-14.375	-21.528	-30.622	-30.725	-11.535
i_soln	28	-12.432	-10.749	-21.589	-29.713	-33.765	-32.129	-47.457	-48.357	-42.266	-9.489	-20.154	-14.401	-14.487	-33.631	-37.156	-43.753	-14.787	-13.753	-13.533	-21.235	-30.672	-30.775	-11.639
i_soln	29	-12.397	-10.729	-20.977	-28.890	-32.942	-31.275	-46.423	-47.323	-41.516	-9.278	-20.366	-14.185	-14.271	-33.644	-36.839	-43.220	-14.978	-13.944	-13.724	-20.192	-30.656	-30.759	-11.626
i_soln	30	-10.282	-9.268	-13.764	-19.260	-23.312	-25.597	-34.376	-35.276	-32.784	-6.439	-16.915	-11.764	-11.850	-32.589	-32.680	-36.640	-15.167	-14.133	-13.913	-22.192	-30.635	-30.738	-10.511
i_soln	31	-11.297	-10.283	-16.775	-23.286	-27.338	-27.640	-39.417	-40.317	-36.070	-7.415	-17.745	-12.788	-12.874	-33.249	-34.545	-39.529	-14.818	-13.784	-13.564	-23.781	-30.658	-30.762	-10.848
i_soln	32	-9.687	-8.673	-11.999	-16.900	-20.952	-23.843	-31.421	-32.321	-30.790	-5.896	-16.298	-11.171	-11.257	-31.390	-31.190	-34.557	-15.102	-14.068	-13.848	-21.096	-30.641	-30.745	-10.181
i_soln	33	-11.087	-10.072	-16.165	-22.465	-26.517	-27.201	-38.386	-39.286	-35.530	-7.385	-18.040	-12.573	-12.659	-34.130	-34.663	-39.432	-14.987	-13.953	-13.733	-23.401	-30.644	-30.747	-10.825
i_soln	34	-10.688	-9.673	-14.966	-20.868	-24.920	-26.407	-36.389	-37.289	-33.979	-6.824	-17.753	-12.174	-12.260	-33.708	-33.855	-38.225	-14.963	-13.928	-13.709	-23.175	-30.645	-30.748	-10.613
i_soln	35	-11.893	-10.879	-18.571	-25.678	-29.730	-28.897	-42.405	-43.305	-38.162	-8.177	-18.607	-13.381	-13.467	-34.085	-35.852	-41.429	-14.926	-13.892	-13.672	-23.818	-30.651	-30.755	-11.198
i_soln	36	-11.507	-10.493	-17.385	-24.106	-28.158	-27.483	-40.446	-41.346	-36.566	-7.797	-17.821	-13.007	-13.093	-34.264	-35.381	-40.583	-14.532	-13.498	-13.278	-24.344	-30.677	-30.781	-10.814
i_soln	37	-11.494	-10.480	-17.372	-24.080	-28.132	-28.038	-40.407	-41.307	-36.936	-7.784	-17.981	-12.985	-13.071	-34.037	-35.234	-40.415	-14.808	-13.774	-13.554	-23.775	-30.655	-30.759	-10.941
i_soln	38	-8.299	-6.332	-8.277	-11.313	-15.365	-20.477	-23.968	-24.868	-25.114	-3.886	-14.536	-9.783	-9.869	-30.053	-28.440	-30.419	-15.073	-14.039	-13.819	-19.194	-30.654	-30.757	-9.473
i_soln	39	-9.521	-7.393	-10.388	-14.646	-18.698	-22.754	-28.523	-29.423	-28.840	-5.058	-15.458	-11.033	-11.119	-31.137	-30.857	-34.086	-14.260	-13.225	-13.006	-21.770	-30.704	-30.807	-9.691
i_soln	40	-10.715	-9.701	-14.995	-20.925	-24.977	-25.903	-36.476	-37.376	-34.037	-6.728	-16.933	-12.212	-12.298	-31.446	-32.779	-37.187	-14.658	-13.624	-13.404	-22.634	-30.682	-30.785	-10.479
i_soln	41	-9.278	-7.963	-10.884	-15.376	-19.428	-23.646	-29.487	-30.387	-29.468	-5.414	-16.159	-10.758	-10.844	-32.133	-30.943	-33.897	-15.268	-14.234	-14.014	-20.468	-30.629	-30.732	-10.058
i_soln	42	-7.675	-6.185	-9.186	-12.075	-16.127	-20.824	-24.583	-25.483	-24.451	-4.237	-14.657	-9.151	-9.237	-30.500	-27.715	-29.061	-15.617	-14.582	-14.362	-18.569	-30.621	-30.725	-9.428
i_soln	43	-11.478	-10.464	-17.357	-24.050	-28.102	-27.983	-40.363	-41.263	-37.208	-7.769	-18.612	-12.950	-13.036	-32.506	-34.418	-39.564	-16.148	-15.114	-14.894	-21.646	-30.621	-30.724	-11.594
i_soln	44	-12.077	-10.761	-19.156	-26.447	-30.499	-29.319	-43.359	-44.259	-39.332	-8.360	-19.731	-13.550	-13.636	-33.201	-35.664	-41.410	-15.984	-14.950	-14.730	-18.987	-30.621	-30.724	-11.812
i_soln	45	-12.075	-10.759	-19.153	-26.442	-30.494	-29.311	-43.351	-44.251	-39.329	-8.357	-19.460	-13.549	-13.635	-33.488	-35.806	-41.551	-15.801	-14.767	-14.547	-18.857	-30.620	-30.723	-11.720
i_soln	46	-10.276	-8.784	-13.758	-19.247	-23.299	-25.574	-34.357	-35.257	-33.074	-6.433	-17.222	-11.754	-11.840	-32.529	-32.634	-36.584	-15.431	-14.397	-14.177	-21.781	-30.625	-30.728	-10.637
i_soln	47	-7.686	-6.196	-9.200	-12.100	-16.152	-20.864	-24.620	-25.520	-24.465	-4.073	-14.288	-9.158	-9.244	-28.723	-26.838	-28.192	-16.028	-14.994	-14.774	-17.773	-30.629	-30.732	-9.638
i_soln	48	-5.885	-4.881	-8.971	-9.769	-13.821	-17.562	-20.187	-21.087	-19.080	-2.461	-12.929	-7.363	-7.449	-27.351	-23.460	-23.019	-15.667	-14.633	-14.413	-17.290	-30.634	-30.737	-8.560
i_soln	49	-10.289	-8.672	-13.770	-19.272	-23.324	-25.619	-34.394	-35.294	-32.495	-6.622	-17.177	-11.776	-11.862	-33.267	-33.037	-37.009	-14.906	-13.872	-13.652	-22.618	-30.647	-30.750	-10.386
i_soln	50	-8.517	-6.124	-8.608	-12.040	-16.092	-20.824	-25.091	-25.991	-25.807	-4.528	-14.968	-10.010	-10.096	-29.354	-28.432	-30.638	-14.756	-13.722	-13.502	-19.581	-30.681	-30.784	-9.428

state	soln	si_CdSO4	si_CdSO4:1H2O	si_CdSO4:2.67H2O	si_Cerussite	si_CH4(g)	si_Chalcanthite	si_Claudetite	si_Co(BO2)2	si_Co(OH)2	si_Co(OH)3	si_CO2(g)	si_Co3(AsO4)2	si_Co3O4	si_CoCl2	si_CoCl2:6H2O	si_CoCO3	si_CoF2	si_CoF3	si_CoFe2O4	si_CoO	si_CoSO4	si_CoSO4:6H2O	si_Cotunnite
i_soln	1	-13.557	-12.003	-11.856	-6.604	-49.769	-9.853	-32.539	-34.421	-11.536	-19.833	-3.067	-29.159	-32.232	-22.449	-16.719	-9.677	-22.364	-58.962	6.090	-12.029	-15.230	-9.955	-9.480
i_soln	2	-13.267	-11.714	-11.567	-6.583	-50.748	-9.565	-33.653	-34.111	-11.335	-19.532	-3.246	-28.711	-31.426	-22.587	-16.856	-9.653	-22.020	-58.448	6.406	-11.827	-14.944	-9.669	-9.619
i_soln	3	-13.723	-12.169	-12.022	-6.646	-52.355	-8.981	-35.979	-34.238	-10.917	-18.914	-3.253	-27.822	-29.775	-22.887	-17.156	-9.243	-21.191	-57.213	8.014	-11.410	-15.404	-10.129	-10.392
i_soln	4	-13.749	-12.195	-12.048	-6.456	-53.160	-9.747	-37.177	-34.005	-10.722	-18.619	-3.258	-27.434	-28.987	-22.758	-17.027	-9.052	-21.505	-57.681	8.942	-11.214	-15.428	-10.153	-10.264
i_soln	5	-13.427	-11.873	-11.726	-6.780	-49.945	-9.724	-32.537	-34.254	-11.536	-19.833	-3.243	-29.156	-32.229	-22.496	-16.766	-9.852	-22.085	-58.544	6.697	-12.028	-15.101	-9.826	-9.527
i_soln	6	-13.470	-11.916	-11.769	-6.867	-48.165	-9.767	-30.562	-34.935	-11.928	-20.425	-3.064	-30.146	-33.806	-22.625	-16.894	-10.065	-21.628	-57.862	4.580	-12.420	-15.147	-9.872	-9.530
i_soln	7	-13.826	-12.272	-12.125	-2.044	-86.892	-12.254	-93.896	-27.066	-2.938	-6.835	-4.990	-16.442	2.364	-23.499	-17.768	-3.001	-16.436	-49.969	27.771	-3.430	-15.600	-10.325	-12.645
i_soln	8	-13.669	-12.115	-11.968	-2.016	-86.839	-12.103	-93.911	-27.133	-2.947	-6.844	-4.937	-16.477	2.337	-23.512	-17.782	-2.957	-16.095	-49.453	27.904	-3.439	-15.440	-10.165	-12.674
i_soln	9	-12.365	-10.811	-10.664	-2.077	-84.287	-10.334	-89.322	-27.229	-3.494	-7.691	-4.785	-17.022	0.097	-23.985	-18.254	-3.351	-15.623	-48.773	26.058	-3.986	-14.090	-8.815	-12.813
i_soln	10	-12.326	-10.772	-10.625	-2.147	-78.024	-9.036	-78.219	-28.717	-4.834	-9.731	-4.123	-18.293	-5.326	-23.232	-17.502	-4.030	-16.371	-49.923	25.988	-5.327	-14.020	-8.745	-11.452
i_soln	11	-12.141	-10.587	-10.440	-2.843	-72.178	-8.683	-67.454	-29.719	-6.264	-11.861	-3.876	-19.999	-11.014	-23.466	-17.736	-5.213	-16.112	-49.521	24.420	-6.756	-13.832	-8.557	-11.199
i_soln	12	-11.516	-9.962	-9.815	-9.554	-44.637	-7.790	-28.587	-35.194	-12.594	-21.592	-3.536	-33.156	-36.805	-20.447	-14.718	-11.203	-18.595	-53.481	-3.325	-13.086	-12.635	-7.362	-8.901
i_soln	13	-11.792	-10.239	-10.092	-2.225	-74.999	-8.560	-74.708	-29.364	-5.840	-11.037	-3.498	-20.754	-8.941	-21.647	-15.918	-4.410	-16.054	-49.245	22.886	-6.332	-13.476	-8.202	-9.565
i_soln	14	-13.664	-12.110	-11.963	-2.394	-70.550	-9.863	-62.960	-29.454	-6.514	-12.311	-3.848	-19.303	-12.165	-23.594	-17.863	-5.436	-16.812	-50.645	25.119	-7.007	-15.354	-10.079	-10.655
i_soln	15	-13.051	-11.497	-11.351	-1.835	-79.225	-10.801	-81.308	-28.286	-4.431	-9.128	-3.723	-17.828	-3.716	-22.704	-16.973	-3.227	-15.263	-48.263	26.159	-4.924	-14.746	-9.471	-11.414
i_soln	16	-13.493	-11.939	-11.792	-3.726	-62.715	-9.820	-51.896	-31.496	-8.313	-15.010	-3.214	-22.769	-19.362	-23.259	-17.529	-6.600	-17.781	-52.099	18.634	-8.806	-15.179	-9.904	-10.488
i_soln	17	-13.565	-12.011	-11.864	-6.545	-51.551	-9.864	-34.801	-34.077	-11.121	-19.218	-3.249	-28.243	-30.585	-22.852	-17.121	-9.443	-21.418	-57.550	7.523	-11.613	-15.246	-9.971	-10.057
i_soln	18	-13.575	-12.021	-11.874	-6.197	-51.375	-9.873	-34.804	-34.056	-11.125	-19.222	-3.073	-28.257	-30.596	-22.685	-16.955	-9.270	-21.431	-57.569	7.578	-11.617	-15.253	-9.978	-9.715
i_soln	19	-13.449	-11.895	-11.748	-8.032	-48.242	-9.748	-30.153	-35.480	-12.016	-20.563	-3.540	-30.405	-34.170	-22.981	-17.250	-10.629	-20.288	-55.859	2.405	-12.508	-15.131	-9.856	-10.486
i_soln	20	-14.007	-12.453	-12.306	-6.252	-53.966	-10.308	-38.369	-33.913	-10.513	-18.310	-3.264	-27.004	-28.162	-22.977	-17.247	-8.850	-20.997	-56.923	9.016	-11.006	-15.689	-10.414	-10.482
i_soln	21	-13.979	-12.425	-12.278	-6.056	-54.773	-10.281	-39.570	-33.752	-10.310	-18.007	-3.271	-26.595	-27.351	-23.092	-17.361	-8.654	-20.214	-55.750	10.333	-10.802	-15.663	-10.388	-10.597
i_soln	22	-13.970	-12.417	-12.270	-5.493	-57.208	-10.275	-43.206	-33.068	-9.709	-17.106	-3.306	-25.411	-24.950	-23.107	-17.377	-8.088	-19.592	-54.818	12.680	-10.201	-15.655	-10.380	-10.615
i_soln	23	-13.592	-12.038	-11.892	-6.375	-51.551	-9.589	-34.806	-33.903	-11.126	-19.223	-3.249	-28.262	-30.601	-22.643	-16.913	-9.448	-21.656	-57.904	7.429	-11.619	-15.270	-9.995	-9.673
i_soln	24	-13.409	-11.855	-11.708	-7.741	-49.444	-9.707	-31.481	-34.935	-11.721	-20.118	-3.542	-29.585	-32.986	-22.784	-17.053	-10.336	-20.597	-56.319	3.387	-12.214	-15.088	-9.813	-10.291
i_soln	25	-13.142	-11.588	-11.441	-7.775	-49.444	-9.436	-31.500	-35.126	-11.747	-20.144	-3.542	-29.672	-33.064	-22.114	-16.384	-10.363	-20.501	-56.162	3.159	-12.240	-14.805	-9.530	-9.629
i_soln	26	-12.873	-11.320	-11.173	-8.202	-47.841	-9.166	-29.825	-35.318	-12.169	-20.766	-3.539	-30.900	-34.729	-21.874	-16.143	-10.781	-17.045	-50.967	0.483	-12.661	-14.528	-9.253	-9.397
i_soln	27	-13.373	-11.819	-11.672	-7.231	-49.945	-9.674	-32.516	-34.795	-11.512	-19.809	-3.243	-29.074	-32.158	-23.266	-17.535	-9.828	-19.854	-55.210	4.519	-12.004	-15.059	-9.784	-10.771
i_soln	28	-12.910	-11.356	-11.209	-8.572	-46.239	-9.205	-28.897	-35.178	-11.645	-20.442	-3.538	-29.665	-33.558	-21.508	-15.777	-10.256	-18.645	-53.829	-0.154	-12.138	-13.679	-8.404	-9.927
i_soln	29	-13.024	-11.470	-11.324	-8.358	-47.040	-9.321	-29.257	-35.598	-11.638	-20.335	-3.538	-29.422	-33.335	-21.906	-16.176	-10.249	-17.810	-52.481	0.479	-12.130	-14.001	-8.727	-10.118
i_soln	30	-13.707	-12.153	-12.006	-5.037	-56.218	-10.009	-42.001	-32.851	-9.920	-17.417	-3.116	-25.840	-25.781	-22.799	-17.068	-8.109	-20.513	-56.194	12.657	-10.412	-15.387	-10.112	-9.830
i_soln	31	-13.526	-11.972	-11.825	-5.890	-52.179	-9.823	-35.997	-33.673	-10.936	-18.933	-3.077	-27.887	-29.831	-22.443	-16.712	-9.086	-22.095	-58.558	8.842	-11.429	-15.199	-9.924	-9.349
i_soln	32	-13.404	-11.851	-11.704	-4.279	-58.670	-9.710	-44.463	-32.233	-9.325	-16.522	-3.168	-24.087	-23.397	-22.733	-17.002	-7.566	-19.416	-54.545	15.476	-9.817	-15.083	-9.808	-9.548
i_soln	33	-14.074	-12.520	-12.373	-6.158	-53.160	-10.071	-37.181	-33.973	-10.725	-18.622	-3.258	-27.446	-28.997	-22.616	-16.885	-9.056	-21.719	-58.000	9.372	-11.217	-15.750	-10.475	-9.820
i_soln	34	-14.062	-12.508	-12.361	-5.422	-54.597	-10.060	-39.587	-33.685	-10.326	-18.023	-3.095	-26.652	-27.400	-22.591	-16.860	-8.494	-21.492	-57.660	11.409	-10.818	-15.738	-10.463	-9.621
i_soln	35	-13.647	-12.093	-11.946	-6.951	-49.945	-9.643	-32.535	-34.538	-11.532	-19.829	-3.243	-29.143	-32.217	-22.553	-16.823	-9.848	-22.135	-58.621	6.609	-12.024	-15.322	-10.048	-9.759
i_soln	36	-13.923	-12.369	-12.222	-6.030	-51.551	-9.741	-33.623	-33.743	-11.148	-19.245	-3.249	-27.735	-30.665	-22.149	-16.418	-9.470	-22.650	-59.385	8.287	-11.640	-15.589	-10.314	-8.812
i_soln	37	-13.821	-12.267	-12.120	-6.382	-51.551	-10.118	-34.813	-33.910	-11.133	-19.230	-3.249	-28.285	-30.621	-22.433	-16.702	-9.455	-22.088	-58.550	7.609	-11.625	-15.494	-10.219	-9.462
i_soln	38	-13.430	-11.876	-11.729	-2.529	-64.125	-9.076	-54.524	-29.995	-7.462	-13.959	-3.023	-20.728	-16.407	-22.228	-16.497	-5.558	-17.039	-51.211	21.910	-7.954	-14.633	-9.359	-9.302
i_soln	39	-13.347	-11.793	-11.646	-3.552	-59.275	-8.694	-46.944	-30.767	-8.561	-15.658	-2.973	-22.636	-20.906	-21.264	-15.534	-6.607	-19.463	-54.899	17.748	-9.054	-14.400	-9.125	-8.311
i_soln	40	-12.912	-11.358	-11.211	-4.913	-54.473	-8.607	-38.406	-32.858	-10.356	-18.053	-2.971	-26.151	-27.489	-22.278	-16.548	-8.400	-20.944	-56.822	11.472	-10.848	-14.581	-9.306	-8.894
i_soln	41	-13.982	-12.429	-12.282	-4.197	-60.198	-10.294	-48.127	-32.097	-8.915	-15.912	-3.096	-23.890	-21.768	-22.901	-17.171	-7.084	-18.791	-53.613	16.753	-9.408	-15.664	-10.389	-10.117
i_soln	42	-13.969	-12.415	-12.269	-2.903	-67.023	-10.055	-58.498	-30.600	-7.313	-13.510	-3.521	-21.069	-15.361	-23.255	-17.524	-5.907	-16.897	-50.773	22.965	-7.805	-15.656	-10.381	-10.353
i_soln	43	-13.073	-11.519	-11.372	-6.842	-51.551	-9.375	-34.791	-34.557	-11.115	-19.212	-3.249	-28.221	-30.567	-23.789	-18.058	-9.437	-19.977	-55.392	6.533	-11.607	-14.762	-9.487	-11.297
i_soln	44	-13.120	-11.566	-11.419	-7.433	-49.143	-9.422	-31.473	-35.675	-11.714	-20.111	-3.241	-29.558	-32.963	-23.624	-17.893	-10.028	-17.317	-51.402	2.248	-12.206	-14.808	-9.533	-11.131
i_soln	45	-13.264	-11.710	-11.563	-7.429	-49.143	-9.566	-31.472	-35.403	-11.711	-20.108	-3.241	-29.550	-32.956	-23.440	-17.709	-10.025	-17.185	-51.206	2.256	-12.204	-14.951	-9.676	-10.946
i_soln	46	-13.682	-12.129	-11.982	-5.206	-56.218	-9.986	-41.994	-32.860	-9.612	-17.109	-3.116	-24.913	-24.858	-22.765	-17.035	-7.801	-19.805	-55.286	12.483	-10.104	-15.065	-9.790	-10.273
i_soln	47	-13.078	-11.524	-11.377	-2.527	-66.848	-9.472	-58.512	-30.235	-7.324	-13.521	-3.346	-21.108	-15.394	-23.670	-17.939	-5.743	-16.105	-49.580	22.197	-7.816	-14.768	-9.493	-10.557
i_soln	48	-13.289	-11.735	-11.588	-1.994	-74.538	-10.163	-71.720	-28.876	-5.530	-10.827	-3.836	-18.731	-8.213	-23.310	-17.579	-4.439	-15.622	-48.853	25.483	-6.023	-14.980	-9.705	-10.968
i_soln	49	-14.040	-12.486	-12.340	-5.096	-56.394	-9.739	-42.009	-32.631	-9.450	-16.947	-3.292	-24.434	-24.371	-22.056	-16.325	-7.815	-20.457	-56.344	13.715	-9.942	-15.238	-9.963	-9.439
i_soln	50	-12.967	-11.413	-11.266	-2.795	-63.571	-8.293	-52.043	-29.721	-6.983	-13.580	-3.270	-18.450	-15.170	-21.204	-15.474	-5.325	-16.719	-51.071	22.528	-7.475	-13.464	-8.189	-8.777

state	soln	si_Cr(OH)2	si_Cr(OH)3	si_Cr(OH)3(am)	si_Cr2O3	si_CrCl2	si_CrCl3	si_CrF3	si_Crmetal	si_CrO3	si_Cryolite	si_Cu(OH)2	si_Cu2SO4	si_Cu3(AsO4)2:2H2O	si_CuCO3	si_CuCrO4	si_CuF	si_CuF2	si_CuF2:2H2O	si_Cumetal	si_CuOCuSO4	si_Cupricferrite	si_Cuprite	si_Cuprousferrite	si_CuSO4
i_soln	1	-20.462	-5.226	-3.140	-5.423	-39.474	-42.614	-30.831	-57.526	-41.956	-30.132	-7.182	-21.071	-22.421	-8.222	-38.234	-12.371	-25.141	-19.476	-4.462	-21.304	-3.491	-7.629	4.902	-15.432
i_soln	2	-20.534	-5.198	-3.112	-5.367	-39.886	-43.096	-30.590	-57.798	-41.628	-28.746	-6.978	-20.779	-21.967	-8.197	-37.702	-12.197	-24.796	-19.131	-4.458	-20.812	-3.174	-7.422	5.063	-15.144
i_soln	3	-20.318	-4.782	-2.696	-4.535	-40.387	-43.755	-29.557	-57.982	-40.612	-27.604	-5.517	-19.134	-17.947	-6.743	-35.225	-10.730	-22.923	-17.258	-3.397	-18.768	-0.522	-4.900	6.919	-14.561
i_soln	4	-20.229	-4.592	-2.507	-4.156	-40.365	-43.666	-30.132	-58.093	-40.122	-28.381	-6.063	-20.646	-19.784	-7.294	-35.282	-11.631	-23.979	-18.314	-4.143	-20.079	-0.336	-6.192	6.639	-15.327
i_soln	5	-20.638	-5.402	-3.316	-5.774	-39.698	-42.862	-30.590	-57.702	-42.132	-29.435	-7.180	-20.940	-22.416	-8.397	-38.408	-12.231	-24.861	-19.196	-4.460	-21.173	-2.884	-7.626	5.206	-15.303
i_soln	6	-20.846	-5.810	-3.724	-6.591	-39.643	-42.875	-29.724	-57.511	-43.140	-28.012	-7.571	-20.974	-23.400	-8.607	-39.807	-11.997	-24.403	-18.738	-4.451	-21.607	-4.999	-8.008	4.153	-15.347
i_soln	7	-20.646	-1.009	1.076	3.010	-49.306	-52.870	-30.620	-66.510	-24.539	-26.317	-0.614	-25.704	-15.797	-3.577	-14.250	-11.539	-21.244	-15.579	-6.694	-17.137	16.158	-3.294	13.610	-17.833
i_soln	8	-20.646	-1.010	1.076	3.009	-49.311	-52.877	-30.095	-66.510	-24.540	-25.859	-0.633	-25.572	-15.861	-3.543	-14.269	-11.383	-20.912	-15.248	-6.713	-17.005	16.282	-3.332	13.663	-17.683
i_soln	9	-20.275	-0.939	1.147	3.151	-48.866	-52.695	-28.498	-65.539	-25.369	-23.298	-0.761	-23.331	-15.150	-3.519	-15.226	-10.702	-20.023	-14.358	-6.241	-15.364	14.855	-2.988	13.185	-15.914
i_soln	10	-19.795	-1.159	0.927	2.711	-46.293	-49.775	-27.828	-63.660	-27.689	-22.422	-0.873	-20.744	-12.734	-2.968	-17.658	-9.817	-19.541	-13.876	-4.953	-14.177	16.014	-1.811	14.409	-14.615
i_soln	11	-19.680	-1.744	0.342	1.541	-44.982	-48.567	-25.881	-62.144	-30.374	-17.142	-2.137	-20.257	-13.946	-3.986	-21.608	-9.538	-19.118	-13.453	-4.817	-15.090	14.610	-2.941	13.775	-14.263
i_soln	12	-22.677	-8.141	-6.056	-11.253	-38.630	-40.939	-26.507	-58.341	-46.971	-20.477	-8.770	-19.194	-28.010	-10.278	-44.837	-10.846	-21.903	-16.239	-4.649	-20.827	-13.437	-9.405	-0.165	-13.368
i_soln	13	-19.789	-1.453	0.632	2.123	-43.696	-46.184	-26.138	-63.053	-28.883	-19.305	-1.945	-20.739	-15.396	-3.415	-19.924	-9.928	-19.291	-13.626	-5.425	-14.772	12.845	-3.355	12.588	-14.138
i_soln	14	-19.170	-1.433	0.652	2.163	-44.349	-48.072	-26.244	-61.234	-30.663	-19.608	-2.045	-20.945	-12.223	-3.867	-21.805	-9.470	-19.475	-13.810	-4.325	-16.178	15.651	-2.357	14.541	-15.443
i_soln	15	-19.880	-1.044	1.042	2.942	-46.252	-49.471	-26.655	-64.144	-26.974	-19.958	-1.509	-23.546	-15.388	-3.205	-17.579	-10.301	-19.472	-13.807	-5.989	-16.579	15.145	-3.484	13.456	-16.381
i_soln	16	-19.762	-2.926	-0.840	-0.822	-42.808	-46.364	-26.491	-60.026	-34.856	-19.593	-3.977	-21.033	-16.086	-5.164	-27.929	-10.087	-20.577	-14.912	-4.457	-18.066	9.034	-4.420	11.167	-15.400
i_soln	17	-20.720	-5.283	-3.198	-5.538	-40.550	-43.899	-30.092	-58.184	-41.413	-28.162	-6.762	-21.062	-21.492	-7.984	-37.271	-11.886	-24.190	-18.525	-4.442	-20.895	-2.054	-7.189	5.630	-15.444
i_soln	18	-20.723	-5.287	-3.201	-5.545	-40.384	-43.647	-30.111	-58.187	-41.417	-27.527	-6.767	-21.077	-21.511	-7.813	-37.281	-11.896	-24.206	-18.541	-4.447	-20.910	-2.002	-7.201	5.654	-15.453
i_soln	19	-21.191	-6.204	-4.119	-7.380	-40.255	-43.670	-27.977	-57.755	-43.684	-24.842	-7.656	-20.940	-23.650	-9.168	-40.436	-11.318	-23.060	-17.395	-4.436	-21.673	-7.171	-8.077	3.075	-15.328
i_soln	20	-20.131	-4.394	-2.309	-3.760	-40.694	-44.110	-29.484	-58.195	-39.624	-27.654	-6.154	-21.498	-20.253	-7.391	-34.875	-11.672	-23.770	-18.105	-4.434	-20.731	-0.561	-6.574	6.381	-15.887
i_soln	21	-19.865	-4.029	-1.943	-3.029	-40.747	-44.221	-28.249	-58.130	-38.959	-25.723	-5.950	-21.468	-19.843	-7.195	-34.006	-11.278	-22.987	-17.322	-4.430	-20.501	0.756	-6.367	7.041	-15.861
i_soln	22	-20.110	-3.974	-1.888	-2.919	-41.608	-45.090	-28.163	-58.974	-38.004	-24.209	-5.352	-21.463	-18.666	-6.631	-32.452	-10.970	-22.367	-16.702	-4.432	-19.897	3.101	-5.770	8.213	-15.855
i_soln	23	-20.424	-4.987	-2.902	-4.946	-40.040	-43.282	-30.145	-57.888	-41.117	-28.084	-6.468	-20.494	-20.615	-7.690	-36.682	-11.709	-24.130	-18.465	-4.148	-20.327	-1.849	-6.603	5.879	-15.169
i_soln	24	-21.030	-5.894	-3.809	-6.760	-40.192	-43.507	-28.572	-57.895	-42.924	-25.021	-7.363	-20.906	-22.835	-8.878	-39.383	-11.476	-23.370	-17.705	-4.443	-21.339	-6.191	-7.791	3.561	-15.287
i_soln	25	-21.062	-5.925	-3.840	-6.822	-39.528	-42.495	-28.420	-57.926	-42.955	-23.235	-7.401	-20.672	-22.958	-8.916	-39.452	-11.453	-23.286	-17.621	-4.481	-21.106	-6.430	-7.867	3.423	-15.015
i_soln	26	-21.357	-6.420	-4.335	-7.812	-39.161	-41.997	-23.098	-57.821	-44.050	-15.557	-7.829	-20.431	-24.207	-9.342	-40.976	-9.743	-19.837	-14.172	-4.509	-21.264	-9.113	-8.325	2.067	-14.745
i_soln	27	-20.915	-5.678	-3.593	-6.328	-40.768	-44.328	-27.556	-57.979	-42.408	-24.310	-7.150	-20.860	-22.313	-8.366	-38.655	-11.097	-22.624	-16.959	-4.430	-21.093	-5.055	-7.565	4.136	-15.253
i_soln	28	-21.543	-6.807	-4.722	-8.585	-39.505	-42.619	-26.671	-57.608	-45.037	-21.522	-8.194	-20.435	-25.637	-9.705	-42.328	-10.970	-22.326	-16.661	-4.474	-21.668	-10.639	-8.654	1.322	-14.784
i_soln	29	-21.405	-6.569	-4.483	-8.109	-39.774	-42.991	-25.192	-57.669	-44.499	-19.428	-7.979	-20.536	-24.773	-9.491	-41.575	-10.442	-21.284	-15.619	-4.459	-21.570	-9.799	-8.425	1.749	-14.901
i_soln	30	-19.890	-3.854	-1.768	-2.679	-40.869	-44.191	-29.108	-58.554	-38.184	-25.920	-5.564	-21.209	-19.099	-6.653	-32.844	-11.437	-23.289	-17.624	-4.444	-19.842	3.076	-5.994	8.194	-15.589
i_soln	31	-20.160	-4.624	-2.539	-4.219	-39.767	-42.903	-30.726	-57.825	-40.454	-29.460	-6.582	-21.041	-21.151	-7.632	-36.133	-12.237	-24.873	-19.208	-4.462	-20.674	-0.741	-7.030	6.277	-15.402
i_soln	32	-19.691	-3.355	-1.269	-1.680	-41.198	-44.485	-27.855	-58.955	-36.785	-22.573	-4.974	-20.920	-17.359	-6.115	-30.855	-10.895	-22.196	-16.531	-4.454	-18.953	5.891	-5.414	9.597	-15.289
i_soln	33	-20.231	-4.595	-2.509	-4.161	-40.222	-43.450	-30.450	-58.096	-40.125	-28.910	-6.068	-20.975	-19.801	-7.299	-35.290	-11.741	-24.194	-18.529	-4.148	-20.408	0.093	-6.202	6.850	-15.651
i_soln	34	-19.880	-4.043	-1.958	-3.058	-40.244	-43.459	-30.157	-58.144	-38.973	-28.873	-5.670	-20.966	-19.011	-6.739	-33.740	-11.629	-23.968	-18.303	-4.150	-19.999	2.129	-5.807	7.868	-15.639
i_soln	35	-20.457	-5.220	-3.135	-5.412	-39.578	-42.772	-30.489	-57.521	-41.950	-29.940	-6.874	-20.553	-21.497	-8.091	-37.921	-11.952	-24.610	-18.945	-4.154	-20.786	-2.670	-7.015	5.466	-15.222
i_soln	36	-20.046	-4.610	-2.525	-4.191	-39.147	-42.131	-31.228	-57.511	-40.740	-30.836	-6.322	-20.499	-19.584	-7.544	-36.159	-12.049	-24.956	-19.291	-4.002	-20.332	-0.824	-6.310	6.465	-15.320
i_soln	37	-20.430	-4.993	-2.908	-4.958	-39.829	-42.962	-30.791	-57.894	-41.123	-29.158	-6.779	-21.333	-21.550	-8.001	-36.999	-12.233	-24.866	-19.201	-4.459	-21.166	-1.973	-7.224	5.662	-15.697
i_soln	38	-18.680	-1.643	0.442	1.742	-41.545	-44.812	-25.373	-59.344	-32.973	-17.722	-2.927	-19.639	-13.449	-3.923	-24.996	-9.291	-19.636	-13.971	-3.807	-16.272	12.509	-2.719	13.229	-14.656
i_soln	39	-18.784	-2.347	-0.262	0.334	-39.586	-42.421	-28.065	-58.248	-35.477	-23.037	-3.878	-19.008	-14.912	-4.824	-28.452	-10.305	-21.912	-16.247	-3.558	-16.841	8.495	-3.422	11.347	-14.274
i_soln	40	-19.908	-4.072	-1.986	-3.115	-39.930	-42.975	-29.318	-58.172	-39.002	-24.729	-5.404	-19.246	-17.620	-6.347	-33.502	-11.073	-23.123	-17.458	-3.883	-18.279	2.487	-5.273	8.180	-14.186
i_soln	41	-19.578	-3.041	-0.956	-1.054	-41.663	-45.040	-27.219	-59.242	-35.871	-21.781	-4.568	-21.498	-17.173	-5.637	-29.536	-10.582	-21.576	-15.911	-4.448	-19.131	7.164	-5.002	10.236	-15.874
i_soln	42	-19.364	-2.028	0.058	0.973	-43.406	-46.960	-25.768	-60.628	-32.458	-18.532	-2.734	-21.025	-13.658	-4.229	-24.289	-9.402	-19.450	-13.785	-4.214	-17.059	13.608	-2.934	13.575	-15.635
i_soln	43	-20.717	-5.280	-3.195	-5.532	-41.490	-45.310	-27.937	-58.181	-41.410	-25.130	-6.751	-20.562	-21.454	-7.972	-37.257	-11.157	-22.744	-17.079	-4.431	-20.395	-3.039	-7.167	5.143	-14.955
i_soln	44	-21.043	-5.906	-3.821	-6.784	-41.052	-44.791	-23.675	-57.907	-42.936	-18.786	-7.349	-20.607	-22.791	-8.564	-39.382	-9.827	-20.084	-14.419	-4.429	-21.040	-7.324	-7.765	3.002	-15.001
i_soln	45	-21.041	-5.905	-3.820	-6.781	-40.869	-44.517	-23.479	-57.906	-42.935	-18.619	-7.348	-20.750	-22.786	-8.562	-39.379	-9.761	-19.953	-14.288	-4.428	-21.183	-7.317	-7.762	3.006	-15.145
i_soln	46	-20.186	-4.149	-2.064	-3.270	-41.439	-44.899	-28.803	-58.850	-38.479	-25.454	-5.555	-21.177	-19.068	-6.644	-33.131	-11.227	-22.880	-17.215	-4.435	-19.810	2.603	-5.976	7.962	-15.565
i_soln	47	-19.367	-2.031	0.055	0.968	-43.813	-47.569	-24.566	-60.631	-32.461	-15.150	-3.050	-20.757	-14.612	-4.369	-24.607	-9.316	-18.963	-13.298	-4.530	-16.791	12.535	-3.566	12.881	-15.051
i_soln	48	-19.684	-1.448	0.638	2.134	-45.563	-49.136	-25.950	-62.748	-29.178	-17.591	-1.736	-21.935	-13.673	-3.545	-20.010	-9.557	-18.960	-13.295	-5.016	-16.168	15.342	-2.737	14.041	-15.743
i_soln	49	-19.595	-3.558	-1.473	-2.088	-40.300	-43.486	-29.433	-58.259	-37.888	-26.956	-4.972	-20.347	-17.328	-6.238	-31.957	-11.052	-23.111	-17.446	-3.852	-18.980	4.256	-4.810	9.080	-15.318
i_soln	50	-18.577	-1.641	0.445	1.747	-40.899	-43.993	-25.609	-59.042	-33.271	-18.115	-2.834	-18.562	-12.330	-4.076	-25.201	-9.178	-19.702	-14.037	-3.514	-15.396	12.740	-2.334	13.491	-13.872

state	soln	si_Diaspore	si_Dolomite(disordered)	si_Dolomite(ordered)	si_Epsomite	si_Fe(OH)2	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_Fe2(SO4)3	si_Fe3(OH)8	si_FeAsO4:2H2O	si_FeCr2O4	si_Ferrihydrite	si_Fluorite	si_Gibbsite	si_Goethite	si_Goslarite	si_Gypsum	si_H-Jarosite	si_Halite	si_Hausmannite	si_Hematite	si_Hercynite	si_Huntite
i_soln	1	2.939	-16.214	-15.664	-6.913	-8.730	1.181	-9.090	-37.217	-14.383	-10.297	-10.146	-2.689	-10.290	1.521	0.011	-8.035	-4.647	-14.364	-8.548	-37.960	2.423	1.565	-35.321
i_soln	2	3.069	-16.168	-15.618	-6.626	-8.773	1.187	-8.733	-36.849	-14.312	-10.318	-10.133	-2.632	-9.947	1.651	0.068	-7.821	-4.361	-14.023	-8.441	-38.057	2.537	1.783	-35.230
i_soln	3	3.269	-15.350	-14.800	-7.088	-8.377	1.675	-7.537	-38.291	-12.725	-9.904	-8.906	-2.036	-9.119	1.851	0.664	-8.452	-4.822	-13.992	-8.898	-32.716	3.728	2.577	-33.595
i_soln	4	3.724	-14.968	-14.418	-7.112	-8.111	2.031	-6.871	-38.218	-11.728	-9.638	-8.261	-1.670	-9.432	2.306	1.030	-8.575	-4.846	-13.334	-8.832	-31.928	4.460	3.753	-32.830
i_soln	5	2.800	-16.565	-16.015	-6.784	-8.427	1.477	-8.787	-36.227	-13.475	-9.994	-10.195	-2.386	-10.011	1.382	0.314	-7.915	-4.518	-13.199	-8.572	-37.430	3.028	1.589	-36.023
i_soln	6	1.978	-16.991	-16.441	-6.830	-9.089	0.655	-10.249	-36.910	-15.861	-10.762	-11.674	-3.248	-9.554	0.560	-0.548	-8.086	-4.564	-15.091	-8.542	-39.007	1.304	-0.716	-36.876
i_soln	7	1.932	-1.608	-1.058	-7.078	-6.589	6.275	-7.655	-51.040	0.840	-10.295	0.428	3.852	-3.313	0.514	6.552	-9.894	-3.968	-12.677	-9.095	-0.547	15.505	1.693	-6.955
i_soln	8	1.871	-1.404	-0.854	-6.913	-6.517	6.346	-7.590	-50.390	1.054	-10.228	0.498	3.924	-2.859	0.453	6.624	-9.841	-3.695	-12.125	-9.274	-0.343	15.647	1.641	-6.654
i_soln	9	1.788	-1.895	-1.345	-5.687	-6.867	5.707	-6.988	-45.998	-0.595	-10.330	0.290	3.274	-1.966	0.370	5.974	-8.269	-1.923	-10.280	-9.374	-6.300	14.348	1.125	-8.183
i_soln	10	2.986	-2.789	-2.239	-5.077	-5.532	6.657	-3.607	-40.496	2.011	-8.319	1.185	3.909	-2.790	1.568	6.609	-7.991	-1.929	-5.553	-9.028	-11.001	15.618	4.858	-9.354
i_soln	11	3.890	-4.991	-4.441	-4.069	-4.901	6.766	-1.373	-35.784	2.502	-7.097	0.646	3.840	-3.190	2.472	6.540	-7.383	-2.400	-2.528	-8.660	-15.818	15.480	7.297	-12.280
i_soln	12	-1.273	-16.102	-15.552	-3.145	-12.209	-2.539	-15.375	-34.617	-26.221	-14.888	-19.455	-6.868	-4.533	-2.691	-4.168	-5.740	-0.064	-19.597	-7.222	-39.810	-5.935	-10.337	-35.912
i_soln	13	1.798	-0.854	-0.304	-3.154	-6.280	5.996	-3.881	-37.945	-0.835	-9.090	-0.151	2.861	-1.159	0.380	5.561	-6.403	-0.073	-5.601	-7.620	-15.517	13.522	1.734	-5.417
i_soln	14	4.731	-7.732	-7.182	-7.037	-4.227	7.260	-0.219	-38.650	4.126	-5.899	1.942	4.315	-4.738	3.313	7.015	-8.313	-4.771	-3.647	-9.251	-16.257	16.429	9.653	-18.358
i_soln	15	3.249	-1.756	-1.206	-6.371	-5.848	6.559	-4.434	-44.116	1.462	-8.807	1.100	3.793	-1.687	1.831	6.493	-8.450	-2.660	-8.160	-8.936	-10.187	15.386	5.068	-7.850
i_soln	16	4.957	-10.063	-9.513	-6.863	-5.669	5.237	-0.341	-37.412	-2.002	-7.276	-2.486	1.972	-5.709	3.539	4.672	-8.372	-4.597	-6.726	-9.085	-23.897	11.743	8.662	-23.021
i_soln	17	3.080	-15.749	-15.199	-6.929	-8.421	1.567	-7.981	-37.493	-13.058	-9.954	-9.953	-2.180	-9.345	1.662	0.520	-8.201	-4.664	-13.700	-8.879	-36.314	3.440	2.156	-34.391
i_soln	18	3.082	-15.403	-14.853	-6.936	-8.392	1.622	-7.952	-37.445	-12.970	-9.925	-9.931	-2.151	-9.358	1.664	0.549	-8.148	-4.671	-13.620	-8.573	-37.228	3.498	2.189	-33.701
i_soln	19	1.146	-18.122	-17.572	-6.815	-10.083	-0.429	-11.443	-38.687	-18.942	-11.803	-13.457	-4.292	-8.216	-0.272	-1.592	-8.492	-4.550	-18.015	-8.768	-37.565	-0.783	-3.374	-39.138
i_soln	20	3.774	-14.564	-14.014	-7.373	-8.278	1.900	-6.639	-39.761	-12.029	-9.803	-8.032	-1.737	-8.925	2.356	0.963	-8.970	-5.107	-14.474	-9.120	-34.795	4.325	3.686	-32.022
i_soln	21	3.663	-14.172	-13.622	-7.348	-7.822	2.409	-5.783	-39.180	-10.460	-9.347	-6.845	-1.181	-8.142	2.245	1.519	-9.314	-5.082	-13.160	-9.178	-33.984	5.438	3.922	-31.239
i_soln	22	4.214	-13.040	-12.490	-7.339	-7.248	3.190	-4.017	-39.210	-8.139	-8.782	-6.161	-0.307	-7.520	2.796	2.393	-8.998	-5.073	-11.723	-9.186	-29.776	7.185	5.596	-28.975
i_soln	23	3.194	-15.758	-15.208	-6.953	-8.465	1.555	-8.025	-37.637	-13.190	-9.999	-9.405	-2.224	-9.582	1.776	0.476	-8.261	-4.687	-13.870	-8.551	-37.233	3.351	2.340	-34.411
i_soln	24	1.754	-17.536	-16.986	-6.772	-9.889	-0.101	-10.649	-38.756	-18.061	-11.492	-12.643	-3.948	-8.524	0.336	-1.248	-8.637	-4.507	-17.489	-8.477	-38.187	-0.096	-1.964	-37.966
i_soln	25	1.670	-17.584	-17.034	-6.486	-9.990	-0.097	-10.750	-38.029	-18.363	-11.597	-12.805	-4.049	-8.426	0.252	-1.349	-7.992	-4.221	-17.172	-7.627	-39.694	-0.297	-2.234	-38.061
i_soln	26	-2.214	-18.116	-17.566	-5.906	-10.917	-1.125	-12.478	-38.187	-21.545	-12.706	-14.723	-5.176	-4.969	-3.632	-2.476	-6.996	-3.942	-19.156	-7.321	-39.925	-2.552	-10.927	-38.824
i_soln	27	1.662	-16.521	-15.971	-6.743	-9.528	0.257	-9.888	-38.371	-16.777	-11.089	-11.850	-3.487	-7.782	0.244	-0.787	-8.626	-4.478	-16.463	-9.088	-38.791	0.827	-1.787	-35.936
i_soln	28	-0.063	-18.701	-18.151	-5.786	-11.297	-1.729	-13.658	-38.370	-23.085	-13.454	-15.876	-5.756	-7.475	-1.481	-3.056	-7.276	-3.999	-20.245	-7.980	-40.563	-3.712	-7.007	-39.817
i_soln	29	-0.443	-18.456	-17.906	-6.082	-11.085	-1.477	-13.046	-38.738	-22.249	-13.031	-15.188	-5.444	-6.436	-1.861	-2.744	-7.578	-4.118	-19.970	-8.186	-40.256	-3.088	-7.554	-39.505
i_soln	30	4.411	-13.080	-12.530	-7.071	-7.055	3.361	-4.219	-37.589	-7.759	-8.588	-5.728	-0.214	-8.440	2.993	2.486	-8.347	-4.805	-10.487	-8.853	-30.607	7.372	6.184	-29.055
i_soln	31	3.704	-15.032	-14.482	-6.881	-7.954	2.168	-7.114	-36.773	-11.457	-9.486	-8.168	-1.613	-10.021	2.286	1.087	-7.946	-4.616	-12.276	-8.545	-34.656	4.574	3.870	-32.959
i_soln	32	4.688	-11.994	-11.444	-6.767	-6.242	4.395	-2.236	-36.236	-4.721	-7.490	-3.917	0.899	-7.343	3.270	3.599	-8.055	-4.501	-7.731	-8.596	-30.029	9.597	7.550	-26.882
i_soln	33	3.827	-14.973	-14.423	-7.434	-7.895	2.270	-6.655	-38.742	-11.078	-9.422	-8.050	-1.454	-9.645	2.409	1.246	-8.967	-5.168	-13.322	-8.760	-34.727	4.893	4.176	-32.842
i_soln	34	4.310	-13.850	-13.300	-7.421	-7.275	3.033	-5.236	-38.264	-8.820	-8.805	-6.327	-0.634	-9.419	2.892	2.066	-8.959	-5.155	-11.638	-8.923	-33.129	6.531	5.762	-30.596
i_soln	35	2.830	-16.557	-16.007	-7.005	-8.473	1.422	-8.833	-36.994	-13.612	-10.039	-9.878	-2.432	-10.061	1.412	0.268	-8.441	-4.739	-13.787	-8.727	-38.849	2.937	1.603	-36.008
i_soln	36	3.667	-15.796	-15.246	-7.270	-8.026	2.072	-7.586	-37.652	-11.872	-9.264	-8.211	-1.785	-10.574	2.249	0.915	-8.191	-5.004	-13.148	-8.395	-36.393	4.230	3.724	-34.487
i_soln	37	3.404	-15.770	-15.220	-7.177	-8.372	1.681	-7.932	-38.104	-12.910	-9.908	-9.324	-2.131	-10.014	1.986	0.569	-8.309	-4.911	-14.025	-8.444	-37.253	3.538	2.853	-34.435
i_soln	38	5.669	-8.451	-7.901	-6.792	-4.657	6.476	1.205	-35.906	1.435	-6.320	1.091	3.184	-4.963	4.251	5.884	-7.728	-4.049	-3.702	-8.499	-19.629	14.168	11.098	-20.272
i_soln	39	5.618	-10.794	-10.244	-6.681	-5.589	5.254	-0.615	-34.970	-2.560	-7.157	-1.248	1.652	-7.511	4.200	4.352	-7.409	-3.938	-5.631	-7.897	-25.047	11.105	10.064	-24.960
i_soln	40	4.297	-13.657	-13.107	-6.262	-7.230	3.130	-5.190	-34.611	-8.682	-8.463	-6.338	-0.589	-8.869	2.879	2.112	-7.269	-3.997	-9.126	-7.944	-33.215	6.623	5.782	-30.207
i_soln	41	4.896	-11.031	-10.481	-7.348	-6.009	4.741	-1.298	-38.341	-3.621	-7.573	-3.057	1.332	-6.718	3.478	4.032	-8.931	-5.082	-8.412	-8.905	-23.731	10.464	8.200	-24.957
i_soln	42	4.866	-8.677	-8.127	-7.340	-4.504	6.753	0.303	-38.515	2.494	-6.261	0.475	3.637	-4.823	3.448	6.337	-8.985	-5.074	-4.686	-9.083	-17.649	15.074	9.645	-20.248
i_soln	43	2.329	-15.739	-15.189	-6.447	-8.919	0.928	-8.479	-37.057	-14.552	-10.449	-10.445	-2.678	-7.905	0.911	0.022	-8.340	-4.182	-14.239	-9.524	-35.393	2.443	0.155	-34.371
i_soln	44	-0.732	-16.921	-16.371	-6.493	-10.462	-0.801	-11.222	-39.085	-19.781	-12.063	-13.240	-4.521	-5.245	-2.150	-1.821	-8.176	-4.228	-18.663	-9.266	-37.060	-1.242	-7.510	-36.736
i_soln	45	-0.954	-16.916	-16.366	-6.636	-10.460	-0.771	-11.220	-39.515	-19.772	-12.060	-13.235	-4.519	-5.113	-2.372	-1.819	-8.301	-4.371	-18.946	-9.175	-39.589	-1.237	-7.950	-36.726
i_soln	46	4.200	-13.067	-12.517	-7.051	-7.296	3.079	-4.460	-38.028	-8.481	-8.826	-6.560	-0.455	-8.034	2.782	2.245	-8.657	-4.785	-11.181	-9.165	-28.253	6.891	5.522	-29.029
i_soln	47	4.940	-8.348	-7.798	-6.451	-4.882	6.314	-0.079	-36.574	1.359	-6.643	0.091	3.259	-4.032	3.522	5.959	-8.036	-4.186	-4.023	-8.985	-19.687	14.317	9.415	-19.589
i_soln	48	3.533	-5.426	-4.876	-6.657	-5.036	6.845	-2.106	-41.100	2.697	-7.399	1.103	4.005	-3.241	2.115	6.705	-8.673	-4.090	-5.797	-8.735	-13.391	15.809	6.447	-14.047
i_soln	49	4.622	-13.446	-12.896	-7.399	-6.761	3.696	-3.925	-37.964	-6.876	-8.295	-4.842	0.080	-8.860	3.204	2.780	-8.884	-5.132	-10.247	-8.718	-26.996	7.961	6.900	-29.786
i_soln	50	5.690	-9.558	-9.008	-6.320	-4.488	6.627	1.439	-33.696	1.742	-5.831	1.265	3.253	-5.518	4.272	5.953	-7.357	-3.754	-2.114	-8.206	-21.241	14.306	11.308	-22.309

state	soln	si_Hydrocerussite	si_Hydromagnesite	si_K-Alum	si_K-Jarosite	si_K2Cr2O7	si_K2CrO4	si_Langite	si_Larnakite	si_Laurionite	si_Lepidocrocite	si_Li2CrO4	si_Lime	si_Litharge	si_Maghemite	si_Magnesioferrite	si_Magnesite	si_Magnetite	si_Malachite	si_Manganite	si_Massicot	si_Matlockite	si_Melanothallite	si_Melanterite
i_soln	1	-19.218	-51.359	-12.597	-11.272	-72.305	-43.868	-25.505	-10.591	-7.013	-0.869	-53.737	-27.971	-11.214	-5.382	-10.909	-8.808	2.436	-12.924	-14.750	-11.414	-10.176	-20.505	-6.942
i_soln	2	-18.975	-51.066	-12.497	-11.131	-72.050	-43.941	-24.605	-10.106	-6.983	-0.812	-53.207	-27.770	-11.014	-5.267	-10.593	-8.785	2.507	-12.695	-14.749	-11.214	-10.075	-20.641	-6.900
i_soln	3	-19.157	-49.015	-13.850	-10.897	-69.611	-42.518	-19.639	-11.096	-7.397	-0.216	-52.387	-27.353	-11.070	-4.076	-8.986	-8.376	4.094	-9.780	-12.902	-11.270	-10.283	-19.897	-7.382
i_soln	4	-18.582	-48.055	-13.735	-10.139	-68.434	-41.830	-22.043	-10.925	-7.236	0.150	-51.699	-27.157	-10.875	-3.344	-8.058	-8.185	5.092	-10.877	-12.606	-11.075	-10.377	-20.510	-7.336
i_soln	5	-19.570	-52.060	-12.480	-10.107	-72.657	-44.044	-25.371	-10.463	-7.037	-0.566	-54.514	-27.970	-11.214	-4.776	-10.303	-8.983	3.344	-13.097	-14.573	-11.414	-10.060	-20.551	-6.511
i_soln	6	-20.009	-53.307	-12.805	-12.197	-75.070	-45.449	-26.586	-10.648	-7.171	-1.428	-54.521	-28.363	-11.480	-6.500	-12.420	-9.197	0.959	-13.698	-15.166	-11.680	-9.770	-20.678	-6.826
i_soln	7	-3.614	-15.033	-27.439	-5.484	-29.270	-18.249	-8.203	-6.593	-5.354	5.672	-28.118	-18.324	-4.731	7.701	10.977	-1.927	17.659	-1.711	-0.813	-4.931	-9.852	-23.585	-13.769
i_soln	8	-3.584	-14.846	-27.162	-4.932	-29.273	-18.251	-8.109	-6.474	-5.381	5.744	-28.120	-18.220	-4.756	7.843	11.114	-1.879	17.873	-1.696	-0.744	-4.956	-9.704	-23.608	-13.529
i_soln	9	-3.917	-17.591	-23.765	-3.401	-31.557	-19.706	-6.724	-5.003	-5.557	5.094	-29.574	-18.345	-4.969	6.544	9.144	-2.398	16.224	-1.800	-2.830	-5.169	-9.371	-23.662	-11.982
i_soln	10	-4.792	-18.947	-20.446	0.625	-37.600	-23.429	-5.760	-5.058	-5.243	5.729	-33.296	-19.762	-5.702	7.814	9.614	-2.536	18.830	-1.361	-4.630	-5.902	-8.760	-21.680	-9.236
i_soln	11	-7.125	-21.003	-17.015	2.945	-44.382	-27.527	-9.202	-5.325	-5.588	5.660	-37.393	-21.849	-6.644	7.676	8.867	-2.898	19.322	-3.644	-6.469	-6.844	-8.261	-21.750	-6.988
i_soln	12	-27.599	-52.648	-10.112	-17.109	-83.546	-50.094	-28.205	-11.901	-7.964	-5.048	-59.702	-27.040	-13.695	-13.739	-19.149	-9.159	-9.400	-16.568	-15.600	-13.895	-8.714	-19.033	-6.770
i_soln	13	-5.651	-14.567	-18.906	0.211	-40.722	-25.358	-8.500	-4.915	-4.651	4.681	-34.012	-19.454	-6.405	5.718	7.893	-1.535	15.985	-2.880	-6.236	-6.605	-7.507	-20.163	-8.436
i_soln	14	-5.807	-29.374	-18.592	1.951	-44.709	-27.565	-10.106	-5.755	-5.105	6.135	-38.035	-22.948	-6.223	8.625	8.120	-4.567	20.946	-3.432	-6.682	-6.423	-8.003	-21.535	-7.585
i_soln	15	-4.253	-18.170	-22.236	-1.776	-35.757	-22.302	-9.435	-6.361	-5.267	5.613	-32.171	-19.364	-5.789	7.582	9.217	-2.301	18.281	-2.234	-4.293	-5.989	-8.432	-22.191	-10.681
i_soln	16	-10.437	-35.838	-15.617	-2.330	-55.496	-34.159	-15.858	-7.713	-6.005	3.792	-44.028	-24.749	-8.189	3.939	1.633	-5.733	14.817	-6.661	-9.529	-8.389	-8.488	-21.333	-7.054
i_soln	17	-18.858	-50.015	-13.415	-10.706	-71.415	-43.521	-24.256	-10.540	-7.181	-0.360	-53.389	-27.557	-10.973	-4.364	-9.478	-8.575	3.762	-12.265	-14.135	-11.173	-10.078	-20.903	-7.065
i_soln	18	-17.991	-49.328	-13.421	-10.626	-71.425	-43.526	-24.282	-10.200	-6.924	-0.331	-52.793	-27.560	-10.801	-4.306	-9.423	-8.403	3.849	-12.101	-14.439	-11.001	-9.827	-20.738	-7.039
i_soln	19	-23.028	-55.658	-13.779	-15.469	-76.855	-46.690	-26.821	-11.922	-7.994	-2.472	-55.956	-28.452	-12.169	-8.587	-14.596	-9.762	-2.122	-14.344	-14.702	-12.369	-9.879	-21.030	-7.716
i_soln	20	-17.964	-47.039	-14.522	-11.178	-67.234	-41.129	-22.876	-10.975	-7.240	0.083	-50.997	-26.949	-10.665	-3.479	-7.985	-7.983	4.790	-11.065	-13.528	-10.865	-10.231	-21.028	-7.973
i_soln	21	-17.370	-46.053	-14.887	-9.762	-65.702	-40.262	-22.239	-10.746	-7.195	0.639	-50.131	-26.746	-10.462	-2.366	-6.669	-7.787	6.360	-10.665	-13.225	-10.662	-9.897	-21.142	-7.694
i_soln	22	-15.644	-43.188	-15.220	-8.026	-63.191	-38.706	-20.438	-10.142	-6.905	1.513	-48.575	-26.145	-9.864	-0.619	-4.321	-7.221	8.680	-9.503	-11.722	-10.064	-9.596	-21.160	-7.713
i_soln	23	-18.349	-50.040	-13.339	-10.876	-70.826	-43.228	-23.101	-10.219	-6.904	-0.404	-52.494	-27.561	-10.803	-4.453	-9.571	-8.580	3.629	-11.679	-14.441	-11.003	-9.918	-20.395	-7.127
i_soln	24	-22.152	-54.191	-13.526	-14.794	-75.037	-45.632	-25.902	-11.587	-7.749	-2.128	-54.546	-28.157	-11.875	-7.900	-13.614	-9.469	-1.242	-13.761	-14.859	-12.075	-9.936	-20.835	-7.775
i_soln	25	-22.254	-54.308	-12.997	-14.482	-75.110	-45.673	-25.744	-11.346	-7.435	-2.229	-53.792	-28.181	-11.909	-8.101	-13.838	-9.493	-1.544	-13.836	-15.361	-12.109	-9.561	-20.178	-7.566
i_soln	26	-23.538	-54.887	-15.686	-16.670	-77.708	-47.176	-26.761	-11.506	-7.534	-3.356	-55.045	-28.601	-12.339	-10.356	-16.211	-9.608	-4.726	-14.691	-15.505	-12.539	-7.721	-19.944	-7.795
i_soln	27	-20.922	-51.952	-13.875	-13.666	-73.802	-44.912	-25.229	-11.345	-7.884	-1.667	-53.826	-27.949	-11.665	-6.977	-12.482	-8.962	0.043	-13.035	-15.027	-11.865	-9.804	-21.313	-7.593
i_soln	28	-24.652	-55.910	-13.080	-17.955	-80.073	-48.555	-27.894	-11.926	-7.985	-3.936	-56.733	-28.983	-12.712	-11.516	-17.578	-9.812	-6.266	-15.419	-15.784	-12.912	-9.234	-20.466	-7.849
i_soln	29	-24.007	-55.740	-14.019	-17.578	-78.792	-47.812	-27.366	-11.826	-7.973	-3.624	-56.282	-28.772	-12.496	-10.892	-16.918	-9.778	-5.429	-14.990	-15.649	-12.696	-8.809	-20.658	-7.968
i_soln	30	-14.469	-43.478	-14.169	-6.892	-63.756	-39.091	-20.808	-9.133	-6.380	1.606	-48.960	-26.355	-9.598	-0.432	-4.344	-7.241	9.060	-9.737	-12.032	-9.798	-9.426	-20.853	-7.041
i_soln	31	-17.064	-48.397	-12.670	-8.883	-68.702	-41.767	-23.676	-9.711	-6.585	0.207	-51.635	-27.370	-10.490	-3.231	-8.158	-8.217	5.363	-11.734	-13.549	-10.690	-9.914	-20.499	-6.736
i_soln	32	-12.140	-40.709	-14.175	-3.837	-60.360	-37.094	-18.738	-7.803	-5.834	2.719	-46.962	-25.760	-8.788	1.793	-1.524	-6.698	12.098	-8.609	-11.740	-8.988	-8.628	-20.791	-6.519
i_soln	33	-17.688	-48.069	-14.270	-10.128	-68.441	-41.835	-22.382	-10.649	-6.865	0.366	-51.704	-27.160	-10.577	-2.911	-7.628	-8.188	5.741	-10.887	-13.539	-10.777	-10.111	-20.369	-7.439
i_soln	34	-15.642	-45.424	-14.361	-8.244	-65.738	-40.284	-21.177	-9.888	-6.478	1.186	-50.152	-26.761	-10.003	-1.273	-5.591	-7.627	7.999	-9.929	-12.940	-10.203	-9.810	-20.345	-7.206
i_soln	35	-20.081	-52.042	-13.200	-10.995	-72.895	-44.463	-24.373	-11.028	-7.237	-0.612	-54.332	-27.966	-11.384	-4.867	-10.390	-8.980	3.207	-12.485	-15.046	-11.584	-10.288	-20.306	-6.782
i_soln	36	-17.314	-50.135	-12.990	-9.682	-69.127	-41.906	-22.813	-9.827	-6.301	0.035	-52.127	-27.580	-10.458	-3.574	-8.711	-8.600	4.947	-11.386	-14.161	-10.658	-9.802	-19.733	-6.986
i_soln	37	-18.369	-50.070	-13.266	-10.732	-70.240	-42.635	-24.561	-10.450	-6.802	-0.311	-52.151	-27.567	-10.810	-4.266	-9.390	-8.586	3.909	-12.300	-14.448	-11.010	-10.029	-20.489	-7.252
i_soln	38	-7.038	-33.189	-15.023	1.190	-50.741	-31.286	-11.963	-6.008	-4.909	5.004	-40.200	-23.895	-7.183	6.364	4.435	-5.165	18.254	-4.370	-8.040	-7.383	-7.446	-20.103	-6.348
i_soln	39	-10.154	-39.098	-12.838	-1.168	-56.607	-34.649	-14.435	-6.819	-4.950	3.472	-43.665	-25.117	-8.256	3.301	0.150	-6.337	14.259	-6.222	-10.046	-8.456	-8.150	-18.991	-5.946
i_soln	40	-14.241	-45.061	-11.705	-5.437	-65.204	-39.721	-18.923	-7.933	-5.923	1.232	-49.237	-26.790	-9.619	-1.181	-5.526	-7.529	8.137	-9.271	-12.969	-9.819	-8.966	-19.736	-5.974
i_soln	41	-11.968	-38.376	-15.746	-4.316	-58.129	-35.777	-18.104	-8.775	-6.114	3.152	-45.645	-25.351	-8.778	2.660	-0.248	-6.217	13.198	-7.725	-9.574	-8.978	-8.801	-20.964	-7.277
i_soln	42	-7.660	-32.064	-18.164	0.211	-49.701	-30.762	-12.364	-6.930	-5.372	5.457	-40.630	-23.748	-7.059	7.270	5.965	-5.040	19.314	-4.483	-7.280	-7.259	-7.913	-21.086	-7.366
i_soln	43	-19.751	-49.989	-13.209	-11.243	-71.406	-43.514	-23.733	-10.658	-7.950	-0.858	-53.382	-27.552	-11.271	-5.361	-10.469	-8.570	2.267	-12.243	-13.828	-11.471	-10.130	-21.834	-7.085
i_soln	44	-21.529	-52.953	-15.465	-15.966	-75.057	-45.639	-25.577	-11.301	-8.166	-2.701	-55.508	-28.151	-11.868	-9.046	-14.753	-9.161	-2.961	-13.433	-14.483	-12.068	-8.717	-21.670	-8.076
i_soln	45	-21.518	-52.941	-15.977	-16.248	-75.054	-45.638	-25.716	-11.438	-8.071	-2.699	-55.506	-28.148	-11.865	-9.041	-14.746	-9.159	-2.953	-13.430	-15.326	-12.065	-8.557	-21.486	-8.218
i_soln	46	-14.973	-43.446	-14.350	-7.584	-64.344	-39.383	-20.758	-9.456	-6.686	1.365	-49.252	-26.349	-9.767	-0.913	-4.819	-7.235	8.338	-9.719	-11.248	-9.967	-9.532	-21.119	-7.268
i_soln	47	-6.708	-31.415	-16.293	0.872	-49.709	-30.767	-12.727	-5.629	-5.373	5.079	-40.034	-23.759	-6.858	6.513	5.198	-4.875	18.178	-4.939	-7.959	-7.058	-7.513	-21.806	-6.845
i_soln	48	-4.619	-24.373	-20.812	-0.002	-41.344	-25.685	-9.476	-5.589	-5.067	5.825	-35.553	-21.657	-5.835	8.005	8.490	-3.565	19.516	-2.800	-5.560	-6.035	-7.863	-21.925	-9.005
i_soln	49	-14.468	-44.215	-14.603	-6.654	-63.169	-38.799	-18.762	-9.219	-6.126	1.900	-48.066	-26.361	-9.481	0.157	-3.762	-7.424	9.943	-8.730	-10.829	-9.681	-9.379	-19.988	-7.068
i_soln	50	-7.587	-35.266	-13.548	2.851	-51.192	-31.439	-10.901	-5.355	-4.656	5.073	-40.456	-24.291	-7.202	6.502	4.355	-5.630	18.561	-4.430	-8.610	-7.402	-7.273	-19.466	-5.488

state	soln	si_Mg(OH)2(active)	si_Mg(VO3)2	si_Mg2V2O7	si_MgCr2O4	si_MgCrO4	si_MgF2	si_Minium	si_Mirabilite	si_Mn(VO3)2	si_Mn2(SO4)3	si_Mn3(AsO4)2:8H2O	si_MnCl2:4H2O	si_MnSO4	si_Montepnonite	si_Morenosite	si_Na-Jarosite	si_Na2Cr2O7	si_Na2CrO4	si_Na3VO4	si_Na4V2O7	si_Nantokite	si_Natron	si_NaVO3
i_soln	1	-13.848	-23.978	-34.112	-19.035	-45.600	-12.442	-51.682	-11.024	-20.654	-65.765	-27.628	-16.565	-14.678	-14.847	-10.278	-14.340	-78.589	-46.248	-42.732	-51.348	-5.658	-18.056	-11.756
i_soln	2	-13.646	-23.376	-33.308	-18.777	-45.070	-12.099	-50.882	-10.385	-20.353	-65.509	-28.083	-17.004	-14.693	-14.642	-9.992	-13.723	-77.379	-45.367	-41.701	-49.841	-5.724	-17.680	-11.279
i_soln	3	-13.231	-22.160	-31.677	-17.530	-43.639	-11.271	-50.650	-11.458	-17.906	-64.448	-23.504	-16.073	-13.923	-14.220	-10.453	-13.789	-75.543	-44.546	-41.594	-49.431	-4.821	-17.883	-10.977
i_soln	4	-13.034	-21.564	-30.885	-16.954	-42.953	-11.585	-49.865	-11.480	-17.310	-64.515	-23.115	-15.945	-13.947	-14.026	-10.477	-13.031	-74.366	-43.859	-41.097	-48.635	-5.501	-17.689	-10.678
i_soln	5	-13.847	-23.977	-34.110	-19.386	-45.775	-12.163	-51.681	-10.895	-20.477	-65.027	-27.097	-16.436	-14.374	-14.845	-10.149	-13.175	-78.940	-46.424	-42.731	-51.347	-5.680	-18.231	-11.756
i_soln	6	-14.240	-25.170	-35.697	-20.596	-47.177	-11.707	-52.881	-10.751	-21.670	-65.171	-28.087	-16.565	-14.419	-15.235	-10.195	-15.168	-81.160	-47.635	-43.435	-52.553	-5.739	-18.254	-12.258
i_soln	7	-5.044	-15.880	-17.211	-1.798	-19.380	-6.309	-23.433	-11.437	-11.822	-64.795	-12.094	-16.675	-14.109	-6.147	-10.663	-8.376	-35.201	-20.277	-30.252	-34.945	-8.314	-11.423	-7.832
i_soln	8	-5.049	-15.892	-17.227	-1.804	-19.386	-5.964	-23.509	-11.622	-11.761	-64.151	-11.897	-16.612	-13.872	-6.160	-10.509	-8.001	-35.557	-20.632	-30.787	-35.659	-8.335	-11.724	-8.012
i_soln	9	-5.720	-15.611	-17.617	-2.333	-20.885	-5.617	-24.746	-9.998	-12.595	-62.632	-16.160	-18.323	-13.761	-6.753	-9.142	-6.293	-37.488	-21.734	-30.720	-35.253	-8.126	-11.845	-7.673
i_soln	10	-6.521	-14.366	-17.173	-3.575	-24.006	-5.824	-28.345	-9.990	-11.649	-62.001	-16.709	-17.330	-13.450	-8.124	-9.067	-2.267	-43.530	-25.456	-31.801	-36.012	-6.491	-12.586	-7.351
i_soln	11	-7.129	-13.371	-16.786	-5.352	-27.300	-4.745	-32.572	-8.831	-11.185	-60.828	-17.544	-17.274	-12.972	-9.557	-8.395	0.530	-49.358	-28.599	-31.686	-35.325	-6.458	-12.797	-6.778
i_soln	12	-13.731	-26.667	-36.683	-24.747	-50.498	-7.499	-60.526	-7.781	-23.610	-56.507	-28.904	-13.656	-11.176	-16.458	-7.072	-19.776	-89.027	-51.671	-44.746	-54.970	-5.015	-18.934	-13.363
i_soln	13	-6.145	-13.516	-15.946	-3.786	-24.824	-4.126	-31.054	-8.217	-12.481	-60.563	-20.072	-16.046	-13.206	-9.140	-7.980	-2.201	-45.693	-26.425	-31.225	-35.087	-5.968	-11.737	-7.001
i_soln	14	-8.826	-14.588	-19.700	-6.428	-29.285	-6.890	-31.709	-11.409	-10.719	-65.069	-16.135	-17.164	-14.257	-9.808	-10.103	-1.243	-51.243	-30.195	-33.406	-37.459	-6.105	-14.076	-7.192
i_soln	15	-6.685	-15.041	-18.012	-3.508	-23.455	-5.284	-28.205	-11.061	-12.022	-64.712	-17.040	-17.067	-14.442	-7.721	-9.826	-4.845	-42.041	-24.683	-31.969	-36.407	-7.265	-12.128	-7.578
i_soln	16	-10.626	-15.068	-21.980	-11.213	-35.278	-7.861	-39.408	-11.234	-11.345	-64.838	-20.043	-16.977	-14.229	-11.611	-10.229	-5.222	-61.428	-36.187	-35.446	-39.738	-6.069	-15.241	-7.432
i_soln	17	-13.434	-22.764	-32.483	-18.736	-44.643	-11.497	-50.559	-11.297	-19.439	-65.827	-26.713	-16.968	-14.694	-14.424	-10.295	-13.598	-77.347	-45.549	-42.096	-50.234	-5.847	-18.080	-11.278
i_soln	18	-13.437	-22.767	-32.490	-18.746	-44.650	-11.510	-50.044	-10.859	-19.743	-66.448	-27.629	-17.102	-15.002	-14.431	-10.302	-13.296	-76.912	-45.111	-41.433	-49.350	-5.767	-17.462	-11.057
i_soln	19	-14.329	-25.460	-36.075	-21.474	-47.810	-10.369	-55.047	-10.833	-21.356	-63.933	-26.541	-16.318	-13.802	-15.318	-10.004	-18.185	-82.435	-48.366	-43.814	-53.125	-5.907	-18.916	-12.451
i_soln	20	-12.826	-20.957	-30.069	-16.350	-42.247	-11.077	-49.035	-12.098	-17.932	-67.768	-26.378	-17.394	-15.439	-13.815	-10.738	-14.246	-73.518	-43.509	-41.120	-48.533	-5.906	-17.844	-10.552
i_soln	21	-12.623	-20.354	-29.263	-15.417	-41.379	-10.294	-48.226	-12.074	-17.330	-67.694	-25.968	-17.509	-15.413	-13.610	-10.713	-12.831	-71.986	-42.642	-40.617	-47.730	-5.961	-17.650	-10.252
i_soln	22	-12.023	-18.561	-26.870	-14.705	-39.823	-9.673	-45.831	-12.065	-14.934	-66.464	-22.977	-16.922	-14.802	-13.009	-10.704	-11.094	-69.475	-41.086	-39.121	-45.337	-5.971	-17.084	-9.356
i_soln	23	-13.439	-22.768	-32.493	-18.149	-44.352	-11.735	-50.049	-10.875	-19.745	-66.496	-27.635	-17.060	-15.019	-14.433	-10.318	-13.547	-76.314	-44.812	-41.434	-49.352	-5.446	-17.639	-11.057
i_soln	24	-14.034	-24.564	-34.884	-20.558	-46.755	-10.676	-53.866	-10.404	-21.063	-65.003	-27.526	-16.723	-14.361	-15.026	-9.836	-17.318	-80.233	-46.924	-42.492	-51.162	-5.813	-18.237	-11.810
i_soln	25	-14.057	-24.587	-34.931	-20.643	-46.809	-10.578	-53.968	-9.091	-21.566	-65.079	-29.043	-16.531	-14.554	-15.068	-9.551	-16.499	-79.291	-45.951	-40.986	-49.155	-5.504	-17.234	-11.308
i_soln	26	-14.176	-25.506	-35.968	-21.752	-48.022	-6.818	-55.657	-8.441	-22.310	-63.270	-28.837	-15.812	-13.799	-15.499	-9.096	-18.508	-81.531	-47.096	-41.460	-50.054	-5.401	-17.280	-11.733
i_soln	27	-13.825	-23.956	-34.067	-19.918	-46.030	-9.935	-53.034	-11.115	-20.931	-65.877	-28.447	-17.683	-14.808	-14.810	-9.807	-16.558	-79.733	-46.940	-43.089	-51.825	-6.046	-18.470	-11.876
i_soln	28	-14.382	-26.513	-37.180	-22.731	-49.215	-9.148	-57.176	-9.278	-23.189	-62.852	-29.410	-16.048	-13.552	-15.861	-8.483	-20.178	-84.667	-49.245	-43.604	-53.179	-5.645	-18.441	-12.714
i_soln	29	-14.347	-26.078	-36.711	-22.220	-48.642	-8.286	-56.329	-9.613	-22.754	-63.573	-29.083	-16.420	-13.847	-15.644	-8.794	-19.906	-83.595	-48.711	-43.411	-52.788	-5.733	-18.446	-12.517
i_soln	30	-12.232	-19.166	-27.685	-14.675	-40.213	-10.592	-45.235	-11.440	-15.541	-65.651	-23.406	-16.613	-14.535	-13.224	-10.436	-9.785	-69.688	-41.119	-39.097	-45.437	-5.823	-16.747	-9.480
i_soln	31	-13.247	-22.177	-31.711	-17.231	-43.498	-12.173	-48.909	-10.992	-18.553	-65.070	-25.453	-16.257	-14.346	-14.247	-10.247	-11.952	-74.986	-44.147	-41.231	-48.948	-5.655	-17.465	-10.856
i_soln	32	-11.637	-17.401	-25.324	-13.082	-38.218	-9.495	-42.203	-10.689	-14.378	-65.938	-23.459	-17.149	-14.833	-12.630	-10.132	-6.507	-65.848	-38.678	-36.949	-42.184	-5.797	-15.757	-8.374
i_soln	33	-13.037	-21.567	-30.891	-16.963	-42.959	-11.798	-48.971	-11.800	-18.243	-67.338	-25.915	-16.731	-15.199	-14.032	-10.799	-13.021	-74.373	-43.863	-41.099	-48.639	-5.433	-17.691	-10.679
i_soln	34	-12.638	-20.369	-29.293	-15.460	-41.408	-11.571	-46.849	-12.140	-17.045	-67.300	-25.122	-16.706	-15.187	-13.634	-10.787	-11.313	-72.022	-42.664	-40.629	-47.745	-5.422	-17.482	-10.256
i_soln	35	-13.843	-23.973	-34.103	-19.019	-45.590	-12.214	-52.193	-11.369	-20.951	-66.649	-28.515	-16.970	-15.072	-14.840	-10.371	-13.887	-78.826	-46.491	-43.103	-51.844	-5.405	-18.479	-11.880
i_soln	36	-13.457	-22.787	-32.531	-17.413	-43.994	-12.727	-49.014	-11.376	-19.465	-66.829	-26.203	-16.264	-15.037	-14.466	-10.635	-12.926	-75.763	-44.638	-41.739	-49.759	-5.042	-17.843	-11.159
i_soln	37	-13.444	-22.774	-32.505	-18.167	-44.364	-12.167	-50.069	-11.096	-19.752	-67.162	-27.658	-16.849	-15.243	-14.444	-10.542	-13.704	-76.330	-44.821	-41.439	-49.358	-5.648	-17.642	-11.059
i_soln	38	-10.249	-14.156	-20.691	-8.271	-33.019	-7.593	-35.990	-10.550	-9.521	-62.778	-16.689	-15.508	-13.246	-11.242	-9.205	-1.702	-56.672	-33.314	-33.692	-37.222	-5.129	-14.059	-6.669
i_soln	39	-11.471	-16.267	-24.024	-10.901	-36.745	-10.140	-40.407	-10.075	-11.816	-62.791	-19.517	-14.851	-13.319	-12.492	-8.934	-4.060	-62.539	-36.677	-35.425	-39.828	-4.449	-14.868	-7.543
i_soln	40	-12.665	-20.396	-29.347	-15.544	-41.463	-11.020	-45.697	-9.338	-17.073	-63.797	-24.617	-16.393	-14.029	-13.671	-9.628	-7.994	-70.464	-41.077	-38.205	-44.514	-4.984	-15.741	-9.448
i_soln	41	-11.228	-16.287	-23.801	-12.046	-36.896	-8.871	-41.775	-11.719	-11.706	-64.578	-18.593	-15.762	-13.857	-12.218	-10.413	-7.208	-64.061	-37.805	-36.657	-41.558	-5.880	-15.725	-8.041
i_soln	42	-9.625	-14.589	-20.500	-8.417	-31.880	-6.976	-35.016	-11.712	-10.117	-64.774	-16.097	-16.224	-13.958	-10.610	-10.229	-2.681	-55.633	-32.790	-34.207	-38.260	-5.825	-14.549	-7.193
i_soln	43	-13.428	-22.758	-32.473	-18.725	-44.635	-10.057	-51.452	-11.168	-19.132	-63.781	-25.787	-17.604	-13.910	-14.410	-9.812	-14.311	-77.689	-45.894	-42.618	-50.930	-6.307	-18.428	-11.452
i_soln	44	-14.027	-24.557	-34.871	-20.575	-46.760	-7.397	-53.845	-10.863	-20.688	-63.435	-26.395	-17.195	-13.713	-15.009	-9.557	-18.859	-80.989	-47.667	-43.589	-52.625	-6.224	-18.668	-12.176
i_soln	45	-14.025	-24.555	-34.866	-20.571	-46.757	-7.265	-53.834	-11.008	-21.530	-65.556	-28.923	-17.856	-14.701	-15.008	-9.700	-19.141	-80.986	-47.666	-43.588	-52.624	-6.132	-18.667	-12.175
i_soln	46	-12.226	-19.160	-27.672	-15.260	-40.502	-10.186	-45.740	-11.775	-14.756	-64.039	-21.048	-16.103	-13.736	-13.213	-9.939	-10.653	-70.628	-41.764	-39.621	-46.135	-5.951	-17.096	-9.654
i_soln	47	-9.636	-14.602	-20.524	-8.432	-31.893	-6.183	-34.413	-10.214	-10.800	-63.435	-18.142	-17.307	-13.738	-10.617	-9.341	-1.719	-55.039	-32.193	-33.310	-37.065	-6.342	-13.775	-6.895
i_soln	48	-7.835	-14.675	-18.796	-5.466	-26.810	-5.694	-29.545	-10.286	-11.174	-64.655	-16.649	-17.242	-14.245	-8.823	-10.032	-2.526	-46.539	-26.977	-31.346	-35.070	-6.645	-12.331	-6.864
i_soln	49	-12.239	-19.173	-27.698	-14.091	-39.924	-11.013	-44.881	-11.764	-14.337	-64.207	-19.799	-15.137	-13.652	-13.236	-10.162	-9.546	-69.100	-40.827	-39.102	-45.444	-5.095	-16.927	-9.481
i_soln	50	-10.467	-14.310	-21.064	-8.485	-33.535	-7.970	-36.247	-9.817	-9.927	-61.848	-17.261	-15.434	-13.026	-11.470	-8.306	-0.092	-57.225	-33.569	-33.596	-37.072	-4.664	-14.263	-6.616

state	soln	si_Nesquehonite	si_Ni(OH)2	si_Ni3(AsO4)2:8H2O	si_Ni4(OH)6SO4	si_NiCO3	si_Nsutite	si_O2(g)	si_Otavite	si_Pb(BO2)2	si_Pb(OH)2	si_Pb10(OH)6O(CO3)6	si_Pb2(OH)3Cl	si_Pb2O(OH)2	si_Pb2O3	si_Pb2OCO3	si_Pb2V2O7	si_Pb3(AsO4)2	si_Pb3(VO4)2	si_Pb3O2CO3	si_Pb3O2SO4	si_Pb4(OH)6SO4	si_Pb4O3SO4	si_PbCrO4
i_soln	1	-11.598	-11.231	-31.810	-39.735	-12.782	-23.564	-48.289	-8.958	-13.947	-6.670	-103.726	-13.703	-23.228	-40.680	-17.697	-12.784	-22.158	-19.344	-27.794	-20.232	-29.165	-29.943	-31.086
i_soln	2	-11.575	-11.030	-31.363	-38.844	-12.759	-23.463	-47.889	-8.932	-13.640	-6.470	-102.796	-13.472	-22.828	-40.080	-17.475	-11.984	-21.715	-18.344	-27.373	-19.547	-28.280	-29.057	-30.558
i_soln	3	-11.166	-10.614	-30.478	-38.058	-12.350	-21.416	-47.089	-8.517	-14.239	-6.526	-103.398	-13.943	-22.940	-39.792	-17.594	-11.296	-22.246	-17.712	-27.548	-20.593	-29.382	-30.159	-29.598
i_soln	4	-10.975	-10.418	-30.088	-37.493	-12.159	-21.020	-46.689	-8.328	-14.007	-6.331	-101.477	-13.586	-22.550	-39.202	-17.209	-10.506	-21.859	-16.727	-26.967	-20.227	-28.822	-29.599	-28.914
i_soln	5	-11.773	-11.231	-31.808	-39.605	-12.957	-23.387	-48.289	-9.132	-13.781	-6.670	-104.780	-13.726	-23.228	-40.680	-17.872	-12.784	-22.157	-19.344	-27.970	-20.103	-29.037	-29.814	-31.262
i_soln	6	-11.987	-11.624	-32.799	-40.829	-13.170	-24.180	-49.089	-9.342	-14.336	-6.936	-106.366	-14.127	-23.761	-41.613	-18.225	-14.117	-22.768	-20.943	-28.589	-20.555	-29.755	-30.532	-32.537
i_soln	7	-4.717	-2.648	-19.138	-14.369	-6.120	-5.227	-30.689	-2.181	-8.708	-0.187	-50.430	-5.561	-10.262	-18.914	-6.653	-0.524	-15.787	-0.601	-10.268	-9.751	-12.202	-12.979	-7.187
i_soln	8	-4.669	-2.663	-19.192	-14.262	-6.083	-5.158	-30.689	-2.141	-8.791	-0.212	-50.365	-5.613	-10.312	-18.964	-6.650	-0.581	-15.871	-0.683	-10.290	-9.657	-12.133	-12.910	-7.212
i_soln	9	-5.188	-3.193	-19.687	-14.484	-6.461	-7.544	-31.889	-2.581	-8.553	-0.425	-51.579	-6.002	-10.738	-19.990	-6.924	-0.054	-15.414	-0.369	-10.776	-8.398	-11.087	-11.864	-8.254
i_soln	10	-5.327	-4.529	-20.943	-18.416	-7.134	-10.044	-34.689	-3.291	-9.433	-1.158	-54.934	-6.421	-12.203	-22.855	-7.727	0.526	-14.861	-0.522	-12.312	-9.186	-12.607	-13.384	-11.307
i_soln	11	-5.688	-5.474	-21.196	-20.580	-7.833	-12.583	-37.489	-4.476	-9.948	-2.100	-62.876	-7.707	-14.088	-26.140	-9.365	0.245	-15.105	-1.745	-14.893	-10.396	-14.759	-15.537	-14.934
i_soln	12	-11.950	-11.676	-33.971	-37.862	-13.695	-25.114	-51.090	-11.038	-16.144	-9.152	-131.349	-17.136	-28.191	-47.043	-23.127	-20.553	-30.426	-29.594	-35.706	-24.023	-35.439	-36.215	-38.583
i_soln	13	-4.326	-4.990	-21.771	-18.709	-6.970	-11.950	-35.890	-3.681	-9.778	-1.861	-58.215	-6.532	-13.610	-24.862	-8.508	-0.406	-16.415	-2.157	-13.797	-9.746	-13.871	-14.648	-13.204
i_soln	14	-7.357	-5.910	-21.058	-23.597	-8.242	-12.996	-38.289	-4.700	-9.011	-1.679	-58.501	-6.804	-13.246	-25.698	-8.495	1.566	-12.395	-0.003	-13.602	-10.405	-14.348	-15.125	-14.803
i_soln	15	-5.091	-4.158	-20.575	-18.063	-6.364	-9.507	-33.889	-2.488	-9.492	-1.245	-53.406	-6.532	-12.377	-22.629	-7.501	-0.159	-15.866	-1.293	-12.174	-10.576	-14.084	-14.861	-10.678
i_soln	16	-8.523	-8.011	-25.426	-30.023	-9.707	-16.743	-41.889	-5.868	-11.220	-3.645	-74.356	-9.670	-17.179	-31.431	-11.793	-1.046	-16.362	-4.582	-18.866	-14.329	-20.238	-21.015	-20.961
i_soln	17	-11.366	-10.817	-30.898	-38.509	-12.549	-22.749	-47.489	-8.717	-13.777	-6.429	-102.404	-13.630	-22.746	-39.798	-17.396	-11.502	-21.765	-17.821	-27.252	-19.939	-28.632	-29.409	-30.303
i_soln	18	-11.193	-10.821	-30.910	-38.526	-12.376	-23.053	-47.489	-8.547	-13.582	-6.257	-99.633	-13.202	-22.403	-39.455	-16.877	-11.159	-21.253	-17.306	-26.562	-19.429	-27.950	-28.727	-30.135
i_soln	19	-12.552	-11.537	-32.533	-40.377	-13.559	-23.766	-49.289	-9.901	-15.482	-7.625	-116.110	-15.638	-25.138	-43.090	-20.079	-15.694	-24.830	-23.209	-31.132	-22.518	-32.406	-33.183	-33.770
i_soln	20	-10.773	-10.210	-29.660	-37.131	-11.957	-21.842	-46.289	-8.122	-13.914	-6.121	-99.416	-13.381	-22.130	-38.582	-16.795	-9.687	-21.426	-15.698	-26.344	-20.067	-28.452	-29.229	-28.206
i_soln	21	-10.577	-10.007	-29.251	-36.495	-11.761	-21.439	-45.889	-7.925	-13.753	-5.918	-97.428	-13.133	-21.724	-37.976	-16.396	-8.881	-21.017	-14.689	-25.742	-19.635	-27.817	-28.594	-27.337
i_soln	22	-10.011	-9.406	-28.067	-34.685	-11.195	-19.636	-44.689	-7.358	-13.072	-5.320	-91.653	-12.245	-20.527	-36.179	-15.234	-6.492	-19.840	-11.701	-23.982	-18.433	-26.016	-26.793	-25.784
i_soln	23	-11.370	-10.822	-30.916	-38.547	-12.554	-23.055	-47.489	-8.726	-13.429	-6.259	-100.706	-13.183	-22.406	-39.458	-17.056	-11.162	-21.259	-17.311	-26.743	-19.448	-27.971	-28.748	-29.837
i_soln	24	-12.259	-11.117	-31.336	-38.949	-13.142	-23.773	-48.689	-9.612	-14.938	-7.331	-113.189	-15.100	-24.551	-42.203	-19.494	-14.507	-24.013	-21.728	-30.253	-21.889	-31.484	-32.262	-32.716
i_soln	25	-12.283	-11.141	-31.418	-38.735	-13.166	-24.275	-48.689	-9.654	-15.137	-7.365	-113.530	-14.821	-24.619	-42.271	-19.562	-14.575	-24.125	-21.830	-30.356	-21.682	-31.311	-32.088	-32.781
i_soln	26	-12.398	-11.384	-32.112	-39.011	-13.407	-24.619	-49.489	-10.082	-15.337	-7.795	-117.810	-15.349	-25.478	-43.530	-20.419	-16.235	-25.377	-23.920	-31.642	-22.272	-32.331	-33.108	-34.306
i_soln	27	-11.752	-10.908	-30.828	-38.293	-12.634	-23.841	-48.289	-9.097	-14.797	-7.121	-109.288	-15.025	-24.130	-41.582	-18.774	-13.686	-23.499	-20.696	-29.322	-21.437	-30.821	-31.598	-31.990
i_soln	28	-12.602	-11.097	-31.586	-37.536	-13.117	-25.098	-50.289	-10.442	-16.094	-8.168	-121.526	-16.173	-26.224	-44.676	-21.163	-17.781	-26.831	-25.839	-32.758	-23.065	-33.496	-34.274	-35.665
i_soln	29	-12.568	-11.078	-31.308	-37.790	-13.099	-24.863	-49.889	-10.226	-16.306	-7.952	-119.375	-15.945	-25.793	-44.045	-20.732	-16.949	-25.964	-24.792	-32.112	-22.749	-32.965	-33.742	-34.912
i_soln	30	-10.031	-9.616	-28.495	-35.047	-11.215	-20.046	-45.089	-7.383	-12.379	-5.054	-87.861	-11.455	-19.997	-35.849	-14.514	-6.357	-18.842	-11.301	-22.996	-17.158	-24.476	-25.254	-25.699
i_soln	31	-11.007	-10.631	-30.539	-37.903	-12.191	-22.063	-47.089	-8.367	-13.076	-5.946	-96.541	-12.551	-21.780	-38.632	-16.258	-10.135	-20.514	-15.971	-25.631	-18.628	-26.837	-27.614	-28.860
i_soln	32	-9.488	-9.021	-26.741	-32.958	-10.672	-19.454	-43.889	-6.842	-11.544	-4.244	-80.066	-10.098	-18.376	-33.628	-12.945	-3.566	-16.441	-7.699	-20.616	-15.018	-21.525	-22.302	-23.489
i_soln	33	-10.978	-10.421	-30.099	-37.824	-12.162	-21.953	-46.689	-8.334	-13.674	-6.033	-98.498	-12.918	-21.954	-38.606	-16.613	-9.910	-20.968	-15.833	-26.074	-19.652	-27.949	-28.726	-28.618
i_soln	34	-10.417	-10.022	-29.306	-36.615	-11.600	-21.154	-45.889	-7.773	-13.211	-5.459	-91.786	-11.957	-20.806	-37.058	-15.303	-7.963	-19.650	-13.312	-24.190	-18.318	-26.040	-26.817	-26.893
i_soln	35	-11.770	-11.227	-31.795	-39.815	-12.953	-23.860	-48.289	-9.127	-14.240	-6.840	-106.484	-14.098	-23.568	-41.020	-18.213	-13.124	-22.666	-19.855	-28.481	-20.839	-29.943	-30.720	-31.251
i_soln	36	-11.390	-10.841	-30.382	-38.922	-12.573	-22.775	-47.489	-8.759	-12.902	-5.914	-97.258	-12.235	-21.716	-38.768	-16.367	-10.472	-19.633	-16.276	-25.708	-18.712	-26.889	-27.666	-29.115
i_soln	37	-11.376	-10.828	-30.937	-38.789	-12.560	-23.062	-47.489	-8.737	-13.436	-6.266	-100.774	-13.088	-22.420	-39.472	-17.070	-11.176	-21.283	-17.332	-26.764	-19.687	-28.216	-28.993	-29.850
i_soln	38	-7.955	-6.680	-21.950	-25.009	-8.186	-15.054	-41.089	-5.309	-9.566	-2.639	-63.153	-7.568	-15.167	-29.019	-9.591	1.500	-13.859	-1.029	-15.658	-11.618	-16.521	-17.298	-18.073
i_soln	39	-9.127	-7.742	-23.744	-27.922	-9.198	-17.660	-43.489	-6.509	-10.310	-3.712	-73.576	-8.681	-17.311	-32.363	-11.685	-1.534	-15.685	-5.135	-18.825	-13.502	-19.477	-20.254	-21.649
i_soln	40	-10.319	-10.050	-28.799	-35.540	-11.504	-21.183	-45.889	-7.685	-11.970	-5.075	-87.199	-11.018	-20.038	-36.290	-14.410	-7.195	-17.907	-12.160	-22.913	-15.979	-23.318	-24.095	-26.537
i_soln	41	-9.007	-8.311	-25.643	-31.108	-9.890	-17.088	-43.089	-6.357	-11.809	-4.234	-79.540	-10.368	-18.357	-33.209	-12.854	-2.841	-17.445	-6.965	-20.516	-15.980	-22.478	-23.255	-22.566
i_soln	42	-7.830	-6.533	-22.295	-25.591	-8.537	-13.994	-39.889	-5.175	-10.194	-2.515	-64.896	-7.907	-14.917	-28.169	-9.840	0.693	-14.271	-1.711	-15.782	-12.415	-17.193	-17.971	-17.433
i_soln	43	-11.360	-10.812	-30.878	-38.010	-12.544	-22.442	-47.489	-8.702	-14.561	-6.727	-105.381	-14.697	-23.341	-40.393	-17.991	-12.097	-22.654	-18.714	-28.146	-20.355	-29.345	-30.122	-30.597
i_soln	44	-11.951	-11.110	-31.311	-38.649	-12.834	-23.397	-48.689	-9.294	-15.678	-7.324	-111.313	-15.510	-24.537	-42.189	-19.179	-14.493	-23.988	-21.707	-29.931	-21.596	-31.184	-31.961	-32.721
i_soln	45	-11.949	-11.107	-31.304	-38.785	-12.831	-24.240	-48.689	-9.293	-15.405	-7.321	-111.275	-15.412	-24.529	-42.181	-19.172	-14.485	-23.976	-21.696	-29.920	-21.730	-31.314	-32.091	-32.716
i_soln	46	-10.025	-9.133	-27.041	-33.099	-10.731	-19.262	-45.089	-7.373	-12.864	-5.223	-89.544	-11.929	-20.334	-36.186	-14.851	-6.694	-19.343	-11.806	-23.501	-17.649	-25.136	-25.913	-26.163
i_soln	47	-7.665	-6.544	-22.334	-24.736	-8.373	-14.673	-39.889	-5.007	-9.617	-2.314	-61.838	-7.707	-14.516	-27.768	-9.263	1.092	-13.676	-1.112	-15.005	-10.914	-15.491	-16.268	-17.235
i_soln	48	-6.355	-5.229	-21.394	-21.482	-7.548	-11.374	-36.289	-3.703	-9.030	-1.291	-54.549	-6.378	-12.470	-23.922	-7.708	1.265	-13.612	0.084	-12.426	-9.851	-13.406	-14.183	-12.929
i_soln	49	-10.214	-9.020	-26.712	-32.986	-10.796	-18.843	-45.089	-7.572	-12.511	-4.937	-87.741	-11.082	-19.761	-35.613	-14.455	-6.121	-18.493	-10.948	-22.819	-17.126	-24.326	-25.103	-25.285
i_soln	50	-8.420	-6.472	-20.485	-23.486	-8.225	-15.724	-41.489	-5.783	-9.790	-2.658	-64.822	-7.334	-15.205	-29.257	-9.875	1.526	-13.075	-1.022	-15.961	-10.984	-15.906	-16.683	-18.390

state	soln	si_PbF2	si_Pbmetal	si_PbO:0.3H2O	si_Periclase	si_Phosgenite	si_Plattnerite	si_Portlandite	si_Pyrochroite	si_Pyrolusite	si_Retgersite	si_Rhodochrosite	si_Siderite	si_Smithsonite	si_Spinel	si_Tenorite	si_Thenardite	si_Thermonatrite	si_V(OH)3	si_V2O5	si_V3O5	si_V4O7	si_V6O13	si_VCl2
i_soln	1	-16.598	-20.166	-11.500	-16.638	-14.184	-30.720	-18.075	-13.304	-22.090	-10.383	-8.744	-6.140	-7.276	-12.278	-6.152	-12.459	-20.003	-11.214	-16.284	-21.093	-27.063	-26.872	-46.937
i_soln	2	-16.257	-20.166	-11.300	-16.436	-14.302	-30.320	-17.874	-13.403	-21.989	-10.097	-9.022	-6.362	-7.324	-11.815	-5.948	-11.821	-19.628	-11.214	-15.884	-20.993	-26.862	-26.072	-47.377
i_soln	3	-15.901	-20.622	-11.356	-16.021	-15.138	-29.976	-17.458	-11.756	-19.942	-10.558	-7.382	-5.973	-7.085	-11.001	-4.487	-12.894	-19.831	-11.214	-15.084	-20.793	-26.462	-24.472	-48.294
i_soln	4	-16.215	-20.627	-11.161	-15.824	-14.820	-29.581	-17.262	-11.560	-19.546	-10.582	-7.191	-5.712	-6.993	-9.895	-5.033	-12.915	-19.637	-11.214	-14.684	-20.693	-26.263	-23.672	-48.461
i_soln	5	-16.320	-20.166	-11.500	-16.637	-14.407	-30.720	-18.075	-13.127	-21.913	-10.254	-8.744	-6.013	-7.459	-12.556	-6.150	-12.331	-20.179	-11.214	-16.284	-21.093	-27.063	-26.872	-46.985
i_soln	6	-15.737	-20.032	-11.766	-17.030	-14.497	-31.386	-18.468	-13.520	-22.706	-10.300	-8.956	-6.495	-7.797	-14.592	-6.541	-12.186	-20.202	-11.214	-17.084	-21.294	-27.463	-28.473	-46.521
i_soln	7	-12.786	-22.483	-5.017	-7.835	-12.788	-15.437	-8.429	-3.767	-3.753	-10.768	-1.129	-5.921	-2.088	-5.487	0.416	-12.873	-13.371	-20.367	-16.990	-44.152	-54.874	-46.590	-70.138
i_soln	8	-12.461	-22.508	-5.042	-7.839	-12.790	-15.462	-8.325	-3.698	-3.684	-10.614	-1.008	-5.797	-2.152	-5.615	0.397	-13.058	-13.672	-20.370	-16.996	-44.162	-54.887	-46.609	-70.146
i_soln	9	-11.656	-22.121	-5.255	-8.510	-12.989	-16.275	-8.450	-5.484	-6.070	-9.247	-2.642	-5.995	-2.324	-6.452	0.269	-11.434	-13.793	-19.294	-16.045	-41.234	-51.184	-42.554	-68.696
i_soln	10	-11.795	-21.454	-5.988	-9.311	-11.700	-18.408	-9.867	-6.584	-8.570	-9.172	-3.080	-3.998	-2.795	-4.856	0.158	-11.425	-14.533	-16.872	-13.999	-34.666	-42.892	-33.617	-63.480
i_soln	11	-11.049	-20.996	-6.930	-9.920	-12.142	-20.750	-11.954	-7.723	-11.109	-8.500	-3.972	-3.120	-3.557	-3.656	-1.107	-10.266	-14.745	-14.670	-12.396	-28.760	-35.485	-26.006	-59.382
i_soln	12	-14.254	-21.247	-13.981	-16.521	-16.555	-34.602	-17.145	-13.454	-23.640	-7.177	-9.363	-10.087	-9.099	-20.584	-7.740	-9.214	-20.880	-11.217	-19.090	-21.802	-28.474	-32.490	-43.180
i_soln	13	-11.176	-21.557	-6.691	-8.935	-9.891	-19.711	-9.559	-7.890	-10.476	-8.084	-3.760	-4.121	-2.130	-6.856	-0.915	-9.650	-13.683	-16.035	-13.525	-32.454	-40.143	-30.994	-59.752
i_soln	14	-11.078	-20.175	-6.509	-11.616	-11.150	-20.729	-13.053	-7.736	-11.522	-10.208	-3.958	-2.418	-3.188	-3.671	-1.015	-12.845	-16.023	-14.030	-11.917	-27.042	-33.328	-23.770	-58.420
i_soln	15	-11.177	-21.941	-6.075	-9.475	-11.348	-18.095	-9.468	-6.447	-8.033	-9.930	-2.543	-3.914	-1.725	-4.494	-0.479	-12.496	-14.076	-17.527	-14.510	-36.432	-45.114	-35.950	-64.210
i_soln	16	-12.214	-20.342	-8.475	-13.416	-12.314	-24.495	-14.854	-9.683	-15.269	-10.334	-5.269	-3.226	-4.587	-5.020	-2.947	-12.670	-17.189	-11.570	-10.596	-20.561	-25.286	-16.208	-52.926
i_soln	17	-15.827	-20.325	-11.259	-16.224	-14.701	-30.079	-17.661	-12.889	-21.275	-10.399	-8.511	-6.013	-7.192	-11.581	-5.732	-12.733	-20.028	-11.214	-15.484	-20.893	-26.662	-25.272	-47.955
i_soln	18	-15.665	-20.154	-11.087	-16.227	-14.012	-29.908	-17.665	-13.193	-21.579	-10.407	-8.639	-5.808	-6.959	-11.581	-5.737	-12.295	-19.410	-11.214	-15.484	-20.893	-26.662	-25.272	-47.785
i_soln	19	-14.998	-20.621	-12.455	-17.119	-16.618	-32.175	-18.557	-13.006	-22.292	-10.109	-8.919	-7.965	-8.784	-16.345	-6.626	-12.269	-20.864	-11.214	-17.284	-21.344	-27.563	-28.873	-46.739
i_soln	20	-15.706	-20.617	-10.951	-15.617	-14.834	-29.171	-17.054	-12.582	-20.368	-10.843	-8.219	-5.885	-6.924	-9.587	-5.124	-13.533	-19.792	-11.214	-14.284	-20.594	-26.063	-22.873	-48.989
i_soln	21	-14.923	-20.614	-10.748	-15.413	-14.753	-28.768	-16.851	-12.379	-19.965	-10.818	-8.023	-5.436	-7.098	-9.604	-4.920	-13.509	-19.598	-11.214	-13.885	-20.494	-25.864	-22.074	-49.407
i_soln	22	-14.304	-20.616	-10.150	-14.813	-14.207	-27.570	-16.250	-11.176	-18.162	-10.809	-6.855	-4.897	-6.225	-7.903	-4.322	-13.501	-19.032	-11.218	-12.692	-20.206	-25.279	-19.697	-50.327
i_soln	23	-15.889	-20.155	-11.089	-16.229	-14.148	-29.909	-17.666	-13.195	-21.581	-10.423	-8.817	-6.057	-7.233	-11.358	-5.438	-12.310	-19.587	-11.214	-15.484	-20.893	-26.662	-25.272	-47.741
i_soln	24	-15.308	-20.628	-12.161	-16.824	-16.131	-31.582	-18.262	-13.313	-22.299	-9.941	-9.228	-7.774	-8.679	-14.833	-6.333	-11.839	-20.185	-11.214	-16.684	-21.193	-27.263	-27.672	-46.987
i_soln	25	-15.220	-20.662	-12.195	-16.847	-15.504	-31.616	-18.286	-13.815	-22.801	-9.656	-9.731	-7.875	-8.343	-15.026	-6.371	-10.526	-19.182	-11.214	-16.684	-21.193	-27.263	-27.672	-46.291
i_soln	26	-11.772	-20.691	-12.625	-16.966	-15.698	-32.445	-18.706	-13.759	-23.145	-9.201	-9.671	-8.799	-8.043	-22.910	-6.799	-9.877	-19.228	-11.214	-17.485	-21.394	-27.664	-29.274	-45.429
i_soln	27	-14.564	-20.617	-11.951	-16.616	-16.102	-31.171	-18.053	-13.581	-22.367	-9.912	-9.197	-7.114	-8.190	-14.809	-6.120	-12.551	-20.418	-11.214	-16.284	-21.093	-27.063	-26.872	-47.778
i_soln	28	-14.269	-20.664	-12.998	-17.172	-16.599	-33.218	-19.088	-13.838	-23.624	-8.588	-9.749	-9.178	-8.647	-18.816	-7.164	-10.713	-20.388	-11.215	-18.285	-21.595	-28.065	-30.875	-45.387
i_soln	29	-13.226	-20.648	-12.782	-17.137	-16.576	-32.802	-18.877	-13.803	-23.389	-8.899	-9.714	-8.966	-8.619	-19.541	-6.949	-11.049	-20.394	-11.214	-17.885	-21.494	-27.864	-30.074	-45.894
i_soln	30	-14.748	-20.151	-9.884	-15.022	-12.968	-27.504	-16.460	-11.386	-18.572	-10.541	-6.875	-4.514	-5.863	-7.718	-4.534	-12.875	-18.695	-11.216	-13.088	-20.299	-25.471	-20.484	-49.705
i_soln	31	-16.205	-20.042	-10.776	-16.038	-13.339	-29.396	-17.475	-12.403	-20.589	-10.352	-7.853	-5.374	-6.627	-10.148	-5.552	-12.428	-19.413	-11.214	-15.084	-20.793	-26.462	-24.472	-47.831
i_soln	32	-13.435	-19.940	-9.074	-14.427	-11.927	-26.094	-15.865	-11.394	-17.980	-10.237	-6.934	-3.753	-5.331	-6.570	-3.944	-12.124	-17.705	-11.231	-11.918	-20.044	-24.931	-18.174	-50.549
i_soln	33	-16.128	-20.329	-10.863	-15.827	-14.078	-29.283	-17.265	-12.493	-20.479	-10.904	-8.124	-5.495	-7.066	-9.691	-5.038	-13.236	-19.639	-11.214	-14.684	-20.693	-26.263	-23.672	-48.315
i_soln	34	-15.726	-20.155	-10.289	-15.428	-13.142	-28.309	-16.866	-12.094	-19.680	-10.892	-7.562	-4.714	-6.509	-8.325	-4.640	-13.575	-19.429	-11.214	-13.885	-20.494	-25.864	-22.074	-48.889
i_soln	35	-16.544	-20.336	-11.670	-16.634	-14.809	-30.890	-18.071	-13.600	-22.386	-10.476	-9.217	-6.059	-7.760	-12.492	-5.844	-12.804	-20.427	-11.214	-16.284	-21.093	-27.063	-26.872	-47.046
i_soln	36	-16.517	-19.810	-10.744	-16.248	-12.942	-29.564	-17.685	-12.915	-21.301	-10.740	-8.537	-5.618	-6.865	-10.432	-5.292	-12.812	-19.791	-11.214	-15.484	-20.893	-26.662	-25.272	-47.225
i_soln	37	-16.322	-20.162	-11.096	-16.234	-13.944	-29.916	-17.672	-13.202	-21.588	-10.647	-8.824	-5.964	-7.064	-10.944	-5.749	-12.531	-19.590	-11.214	-15.484	-20.893	-26.662	-25.272	-47.524
i_soln	38	-11.317	-19.736	-7.469	-13.039	-9.932	-23.089	-14.000	-8.394	-13.580	-9.310	-3.790	-2.023	-3.446	-3.219	-1.897	-11.985	-16.007	-11.703	-10.062	-20.759	-25.418	-15.405	-53.079
i_soln	39	-13.715	-19.608	-8.542	-14.261	-9.963	-25.362	-15.222	-9.800	-16.186	-9.038	-5.146	-2.905	-4.409	-4.543	-2.848	-11.511	-16.816	-10.947	-10.950	-19.093	-23.595	-15.671	-49.660
i_soln	40	-14.764	-19.771	-9.905	-15.455	-11.908	-27.925	-16.894	-12.123	-19.709	-9.733	-7.466	-4.543	-5.881	-8.379	-4.374	-10.773	-17.689	-11.214	-13.885	-20.494	-25.864	-22.074	-48.547
i_soln	41	-13.211	-20.330	-9.064	-14.018	-12.414	-25.684	-15.456	-9.428	-15.614	-10.518	-4.897	-3.448	-5.144	-5.744	-3.538	-13.155	-17.673	-11.278	-11.213	-19.986	-24.720	-16.858	-51.375
i_soln	42	-11.199	-20.211	-7.345	-12.415	-11.356	-22.365	-13.853	-7.934	-12.520	-10.334	-3.828	-2.368	-4.030	-4.201	-1.704	-13.148	-16.497	-12.831	-11.118	-23.843	-29.330	-19.773	-55.683
i_soln	43	-14.689	-20.623	-11.557	-16.219	-16.240	-30.377	-17.657	-12.582	-20.968	-9.917	-8.204	-6.511	-7.808	-13.078	-5.721	-12.604	-20.376	-11.214	-15.484	-20.893	-26.662	-25.272	-48.898
i_soln	44	-12.028	-20.621	-12.154	-16.817	-16.664	-31.575	-18.256	-12.937	-21.923	-9.662	-8.552	-8.046	-8.189	-19.799	-6.319	-12.299	-20.616	-11.214	-16.684	-21.193	-27.263	-27.673	-47.834
i_soln	45	-11.895	-20.617	-12.151	-16.815	-16.474	-31.571	-18.253	-13.780	-22.766	-9.805	-9.394	-8.044	-8.169	-20.240	-6.318	-12.443	-20.615	-11.214	-16.684	-21.193	-27.263	-27.673	-47.653
i_soln	46	-14.517	-20.319	-10.053	-15.016	-13.579	-27.673	-16.454	-10.602	-17.788	-10.043	-6.090	-4.755	-6.186	-8.133	-4.525	-13.210	-19.044	-11.216	-13.088	-20.299	-25.471	-20.484	-49.980
i_soln	47	-10.196	-20.010	-7.144	-12.426	-11.184	-22.164	-13.864	-8.613	-13.199	-9.446	-4.332	-2.572	-3.805	-4.063	-2.020	-11.650	-15.722	-12.832	-11.121	-23.848	-29.335	-19.781	-56.088
i_soln	48	-10.484	-20.787	-6.121	-10.626	-11.062	-19.341	-11.762	-7.114	-9.900	-10.137	-3.324	-3.216	-2.925	-5.077	-0.706	-11.722	-14.279	-15.569	-12.993	-31.157	-38.481	-29.000	-61.158
i_soln	49	-15.045	-20.033	-9.767	-15.029	-12.635	-27.387	-16.466	-10.183	-17.369	-10.267	-5.848	-4.396	-6.254	-7.303	-3.942	-13.200	-18.875	-11.216	-13.088	-20.299	-25.471	-20.484	-49.432
i_soln	50	-11.495	-19.554	-7.488	-13.257	-9.672	-23.308	-14.395	-8.864	-14.250	-8.411	-4.507	-2.101	-4.012	-3.396	-1.804	-11.252	-16.211	-11.471	-9.997	-20.163	-24.689	-14.811	-52.202

state	soln	si_VCl3	si_VF4	si_Vmetal	si_VO	si_VO(OH)2	si_VO2Cl	si_VOCl	si_VOCl2	si_VOSO4	si_Witherite	si_Zincite	si_Zincosite	si_Zn(BO2)2	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zn2(OH)2SO4	si_Zn2(OH)3Cl	si_Zn3(AsO4)2:2.5H2O	si_Zn3O(SO4)2	si_Zn4(OH)6SO4
i_soln	1	-50.665	-66.586	-73.748	-27.079	-5.770	-19.533	-22.645	-29.119	-18.214	-9.042	-7.395	-13.976	-13.259	-8.261	-8.535	-7.815	-7.595	-7.795	-13.608	-15.184	-22.632	-35.068	-26.631
i_soln	2	-51.175	-66.202	-74.048	-27.179	-5.670	-19.503	-22.815	-29.359	-18.029	-9.000	-7.265	-13.761	-13.022	-8.131	-8.405	-7.685	-7.465	-7.665	-13.263	-15.093	-22.398	-34.508	-26.025
i_soln	3	-52.250	-65.179	-74.648	-27.379	-5.470	-19.461	-23.174	-29.876	-18.707	-8.808	-7.019	-14.393	-13.319	-7.885	-8.159	-7.439	-7.219	-7.419	-13.649	-14.959	-22.023	-35.525	-25.919
i_soln	4	-52.350	-66.098	-74.948	-27.479	-5.370	-19.295	-23.207	-29.843	-18.827	-8.619	-6.922	-14.516	-13.185	-7.788	-8.062	-7.342	-7.122	-7.322	-13.674	-14.799	-21.931	-35.674	-25.750
i_soln	5	-50.737	-66.029	-73.748	-27.079	-5.770	-19.557	-22.669	-29.167	-18.086	-9.258	-7.403	-13.856	-13.101	-8.269	-8.543	-7.823	-7.603	-7.803	-13.495	-15.223	-22.654	-34.835	-26.533
i_soln	6	-50.342	-64.530	-73.148	-26.879	-5.970	-19.825	-22.538	-29.103	-17.939	-9.484	-7.921	-14.027	-13.907	-8.787	-9.061	-8.341	-8.121	-8.321	-14.184	-16.127	-24.020	-35.695	-28.258
i_soln	7	-74.290	-76.679	-96.101	-40.632	-10.523	-24.710	-36.622	-43.520	-31.935	-2.222	-0.286	-15.835	-7.393	-1.152	-1.426	-0.706	-0.486	-0.686	-8.357	-5.788	-14.381	-31.675	-7.160
i_soln	8	-74.300	-75.982	-96.104	-40.635	-10.526	-24.716	-36.628	-43.528	-31.769	-2.171	-0.402	-15.782	-7.568	-1.268	-1.542	-0.822	-0.602	-0.802	-8.421	-6.023	-14.738	-31.686	-7.457
i_soln	9	-73.113	-73.171	-94.129	-39.260	-9.750	-24.203	-35.515	-42.678	-29.097	-2.612	-0.727	-14.210	-7.442	-1.593	-1.867	-1.147	-0.927	-1.127	-7.173	-6.635	-14.617	-28.866	-6.858
i_soln	10	-67.550	-70.261	-89.606	-36.137	-8.027	-22.133	-32.045	-38.862	-25.963	-3.305	-1.859	-13.932	-8.722	-2.725	-2.999	-2.279	-2.059	-2.259	-8.027	-7.854	-15.263	-29.443	-9.977
i_soln	11	-63.555	-65.384	-85.304	-33.235	-6.525	-20.734	-29.246	-36.164	-22.844	-4.306	-2.868	-13.324	-9.302	-3.734	-4.008	-3.288	-3.068	-3.268	-8.428	-9.274	-15.707	-29.235	-12.396
i_soln	12	-46.078	-57.637	-71.651	-26.382	-6.473	-19.406	-21.118	-26.762	-15.265	-10.818	-8.751	-11.679	-14.330	-9.617	-9.891	-9.171	-8.951	-9.151	-12.666	-16.365	-27.523	-31.829	-28.400
i_soln	13	-62.828	-67.079	-87.868	-34.999	-7.490	-20.601	-29.913	-35.734	-23.877	-3.492	-1.819	-12.343	-8.324	-2.685	-2.959	-2.239	-2.019	-2.219	-6.398	-6.479	-14.589	-26.224	-8.269
i_soln	14	-62.732	-65.842	-84.065	-32.396	-6.086	-20.433	-28.545	-35.602	-23.677	-4.853	-2.527	-14.254	-8.446	-3.393	-3.667	-2.947	-2.727	-2.927	-9.017	-8.530	-13.237	-30.755	-12.302
i_soln	15	-68.017	-69.307	-90.861	-36.992	-8.483	-22.326	-32.638	-39.191	-27.548	-2.649	-1.189	-14.391	-8.023	-2.055	-2.329	-1.609	-1.389	-1.589	-7.816	-6.450	-13.997	-29.690	-8.426
i_soln	16	-57.071	-62.622	-78.904	-29.035	-4.526	-18.706	-25.018	-31.908	-20.142	-6.101	-4.560	-14.313	-10.722	-5.426	-5.700	-4.980	-4.760	-4.960	-11.110	-11.530	-17.405	-32.906	-18.462
i_soln	17	-51.892	-65.324	-74.348	-27.279	-5.570	-19.542	-23.054	-29.737	-18.445	-8.854	-7.130	-14.142	-13.065	-7.996	-8.270	-7.550	-7.330	-7.530	-13.508	-15.062	-22.167	-35.134	-26.000
i_soln	18	-51.637	-65.344	-74.348	-27.279	-5.570	-19.457	-22.969	-29.567	-18.449	-8.599	-7.073	-14.089	-12.984	-7.939	-8.213	-7.493	-7.273	-7.473	-13.398	-14.863	-21.998	-34.971	-25.777
i_soln	19	-50.743	-61.726	-72.999	-26.830	-6.020	-20.059	-22.671	-29.421	-17.886	-9.881	-8.431	-14.433	-14.874	-9.297	-9.571	-8.851	-8.631	-8.831	-15.100	-17.280	-25.545	-37.017	-30.193
i_soln	20	-52.993	-65.399	-75.248	-27.579	-5.270	-19.309	-23.421	-30.171	-19.196	-8.675	-6.847	-14.911	-13.227	-7.713	-7.987	-7.267	-7.047	-7.247	-13.994	-14.863	-21.903	-36.389	-25.921
i_soln	21	-53.469	-64.140	-75.549	-27.680	-5.170	-19.268	-23.580	-30.389	-19.274	-8.673	-7.014	-15.255	-13.435	-7.880	-8.154	-7.434	-7.214	-7.414	-14.505	-15.355	-22.603	-37.243	-26.764
i_soln	22	-54.397	-63.801	-76.453	-27.984	-4.874	-18.980	-23.892	-30.709	-19.570	-7.833	-6.107	-14.939	-12.445	-6.973	-7.247	-6.527	-6.307	-6.507	-13.282	-13.849	-20.499	-35.705	-23.727
i_soln	23	-51.571	-65.789	-74.348	-27.279	-5.570	-19.435	-22.947	-29.523	-18.464	-8.818	-7.171	-14.202	-12.928	-8.037	-8.311	-7.591	-7.371	-7.571	-13.609	-15.037	-22.293	-35.295	-26.183
i_soln	24	-50.889	-62.782	-73.448	-26.979	-5.870	-19.808	-22.720	-29.369	-17.988	-9.768	-8.323	-14.578	-14.517	-9.190	-9.464	-8.744	-8.524	-8.724	-15.138	-17.115	-25.287	-37.199	-30.017
i_soln	25	-49.847	-62.539	-73.448	-26.979	-5.870	-19.460	-22.372	-28.673	-17.678	-9.667	-7.988	-13.933	-14.346	-8.854	-9.128	-8.408	-8.188	-8.388	-14.156	-16.095	-24.289	-35.573	-28.364
i_soln	26	-48.854	-54.983	-72.849	-26.780	-6.070	-19.530	-22.042	-28.211	-17.179	-9.839	-7.690	-12.936	-13.819	-8.556	-8.830	-8.110	-7.890	-8.090	-12.863	-15.170	-23.360	-33.283	-26.476
i_soln	27	-51.927	-61.615	-73.748	-27.079	-5.770	-19.954	-23.066	-29.960	-18.067	-9.809	-8.133	-14.567	-14.396	-8.999	-9.273	-8.553	-8.333	-8.533	-14.937	-17.080	-24.834	-36.988	-29.435
i_soln	28	-49.090	-59.431	-72.249	-26.580	-6.270	-20.008	-22.120	-28.569	-17.054	-10.382	-8.297	-13.217	-14.810	-9.163	-9.437	-8.717	-8.497	-8.697	-13.750	-16.461	-25.516	-34.451	-28.576
i_soln	29	-49.700	-57.676	-72.549	-26.680	-6.170	-20.012	-22.324	-28.875	-17.285	-10.203	-8.267	-13.519	-15.208	-9.133	-9.407	-8.687	-8.467	-8.667	-14.022	-16.605	-25.207	-35.024	-28.789
i_soln	30	-53.616	-65.319	-76.150	-27.881	-4.972	-18.918	-23.630	-30.287	-19.190	-7.675	-5.933	-14.288	-11.845	-6.800	-7.074	-6.354	-6.134	-6.334	-12.458	-13.243	-19.777	-34.230	-22.557
i_soln	31	-51.555	-66.948	-74.648	-27.379	-5.470	-19.230	-22.942	-29.413	-18.483	-8.443	-6.737	-13.887	-12.454	-7.603	-7.877	-7.157	-6.937	-7.137	-12.860	-14.163	-21.186	-34.231	-24.566
i_soln	32	-54.424	-64.029	-77.065	-28.196	-4.687	-18.598	-23.910	-30.531	-19.196	-6.976	-5.351	-13.996	-11.238	-6.217	-6.491	-5.771	-5.551	-5.751	-11.583	-12.341	-18.060	-33.063	-20.516
i_soln	33	-52.132	-66.518	-74.948	-27.479	-5.370	-19.222	-23.134	-29.697	-19.146	-8.733	-6.995	-14.908	-13.223	-7.861	-8.135	-7.415	-7.195	-7.395	-14.139	-14.872	-22.152	-36.530	-26.361
i_soln	34	-52.693	-66.664	-75.549	-27.680	-5.170	-19.009	-23.322	-29.871	-19.333	-8.196	-6.600	-14.900	-12.939	-7.466	-7.740	-7.020	-6.800	-7.000	-13.736	-14.269	-21.371	-36.119	-25.168
i_soln	35	-50.828	-66.138	-73.748	-27.079	-5.770	-19.588	-22.700	-29.228	-18.311	-9.471	-7.704	-14.382	-13.690	-8.570	-8.844	-8.124	-7.904	-8.104	-14.322	-15.854	-23.554	-36.187	-27.961
i_soln	36	-50.798	-67.735	-74.348	-27.279	-5.570	-19.177	-22.689	-29.007	-18.761	-8.716	-6.803	-14.132	-12.378	-7.669	-7.943	-7.223	-7.003	-7.203	-13.171	-14.043	-20.597	-34.786	-25.009
i_soln	37	-51.245	-66.642	-74.348	-27.279	-5.570	-19.327	-22.839	-29.306	-18.681	-8.799	-7.002	-14.250	-12.758	-7.868	-8.142	-7.422	-7.202	-7.402	-13.488	-14.590	-21.788	-35.222	-25.724
i_soln	38	-56.934	-62.774	-79.637	-29.368	-4.458	-18.349	-25.061	-31.661	-20.381	-4.857	-3.610	-13.669	-9.123	-4.476	-4.750	-4.030	-3.810	-4.010	-9.515	-9.539	-15.067	-30.667	-14.966
i_soln	39	-53.084	-65.269	-77.081	-28.012	-4.303	-17.761	-23.274	-29.442	-18.892	-5.865	-4.623	-13.349	-9.809	-5.489	-5.763	-5.043	-4.823	-5.023	-10.209	-10.535	-16.719	-31.042	-17.688
i_soln	40	-52.180	-65.507	-75.549	-27.680	-5.170	-18.838	-23.150	-29.529	-18.146	-7.465	-6.097	-13.210	-11.579	-6.963	-7.237	-6.517	-6.297	-6.497	-11.543	-13.092	-19.271	-32.236	-21.969
i_soln	41	-55.339	-63.447	-77.713	-28.444	-4.534	-18.534	-24.246	-30.957	-20.034	-6.620	-5.235	-14.871	-11.396	-6.101	-6.375	-5.655	-5.435	-5.635	-12.343	-12.400	-18.745	-34.698	-21.045
i_soln	42	-59.826	-63.616	-81.665	-30.796	-5.286	-19.465	-26.777	-33.665	-22.381	-5.363	-3.695	-14.926	-9.962	-4.561	-4.835	-4.115	-3.895	-4.095	-10.858	-10.298	-16.112	-33.267	-16.480
i_soln	43	-53.307	-62.454	-74.348	-27.279	-5.570	-20.014	-23.526	-30.680	-17.967	-9.003	-7.746	-14.281	-14.168	-8.612	-8.886	-8.166	-7.946	-8.146	-14.263	-16.766	-24.011	-36.028	-27.988
i_soln	44	-52.161	-56.237	-73.448	-26.979	-5.870	-20.232	-23.144	-30.216	-17.715	-9.563	-8.135	-14.117	-15.075	-9.001	-9.275	-8.555	-8.335	-8.535	-14.488	-17.161	-24.717	-36.088	-28.989
i_soln	45	-51.888	-55.978	-73.448	-26.979	-5.870	-20.141	-23.053	-30.034	-17.860	-9.526	-8.115	-14.242	-14.786	-8.981	-9.255	-8.535	-8.315	-8.515	-14.593	-17.030	-24.657	-36.319	-29.055
i_soln	46	-54.028	-64.519	-76.150	-27.881	-4.972	-19.056	-23.768	-30.562	-19.176	-7.772	-6.257	-14.598	-12.485	-7.123	-7.397	-6.677	-6.457	-6.657	-13.091	-14.027	-20.745	-35.173	-23.837
i_soln	47	-60.433	-62.011	-81.667	-30.798	-5.288	-19.668	-26.980	-34.070	-21.483	-4.937	-3.646	-13.977	-9.536	-4.512	-4.786	-4.066	-3.846	-4.046	-9.859	-10.400	-15.969	-31.320	-15.382
i_soln	48	-65.320	-66.470	-87.103	-34.434	-7.124	-21.321	-30.433	-37.340	-25.325	-3.828	-2.276	-14.614	-8.602	-3.142	-3.416	-2.696	-2.476	-2.676	-9.126	-8.379	-14.865	-31.224	-11.911
i_soln	49	-53.207	-66.147	-76.150	-27.881	-4.972	-18.782	-23.494	-30.014	-19.511	-7.859	-6.149	-14.825	-12.310	-7.015	-7.289	-6.569	-6.349	-6.549	-13.210	-13.537	-20.427	-35.518	-23.739
i_soln	50	-55.885	-62.960	-79.105	-29.036	-4.326	-18.044	-24.556	-30.984	-19.558	-5.476	-3.930	-13.298	-9.648	-4.796	-5.070	-4.350	-4.130	-4.330	-9.464	-9.907	-15.187	-30.246	-15.556

state	soln	si_Zn5(OH)8Cl2	si_ZnCl2	si_ZnCO3:1H2O	si_ZnF2	si_Znmetal	si_ZnO(active)	si_ZnSO4:1H2O
i_soln	1	-34.546	-18.851	-7.016	-21.045	-39.250	-7.250	-9.409
i_soln	2	-34.234	-19.060	-7.064	-20.773	-39.320	-7.119	-9.194
i_soln	3	-33.722	-19.531	-6.825	-20.116	-39.474	-6.874	-9.825
i_soln	4	-33.304	-19.501	-6.733	-20.528	-39.577	-6.777	-9.948
i_soln	5	-34.633	-18.906	-7.199	-20.775	-39.258	-7.257	-9.288
i_soln	6	-36.958	-19.161	-7.537	-20.443	-39.376	-7.775	-9.459
i_soln	7	-8.645	-21.389	-1.828	-16.606	-40.940	-0.140	-11.267
i_soln	8	-9.232	-21.510	-1.892	-16.372	-41.057	-0.257	-11.214
i_soln	9	-10.781	-21.761	-2.064	-15.679	-40.781	-0.581	-9.642
i_soln	10	-14.350	-20.800	-2.535	-16.218	-40.514	-1.714	-9.364
i_soln	11	-18.199	-20.613	-3.297	-15.539	-40.123	-2.722	-8.756
i_soln	12	-38.264	-17.146	-8.840	-17.575	-39.205	-8.605	-7.112
i_soln	13	-11.561	-18.170	-1.870	-14.856	-39.874	-1.674	-7.775
i_soln	14	-16.370	-20.149	-2.928	-15.647	-39.381	-2.381	-9.687
i_soln	15	-10.874	-20.004	-1.465	-14.843	-40.243	-1.043	-9.823
i_soln	16	-24.404	-20.049	-4.327	-16.851	-39.615	-4.415	-9.745
i_soln	17	-34.038	-19.404	-6.932	-20.249	-39.385	-6.984	-9.574
i_soln	18	-33.584	-19.177	-6.699	-20.202	-39.328	-6.928	-9.521
i_soln	19	-39.774	-19.938	-8.524	-19.526	-39.785	-8.285	-9.865
i_soln	20	-33.358	-19.855	-6.664	-20.154	-39.702	-6.702	-10.343
i_soln	21	-34.508	-20.339	-6.838	-19.741	-40.068	-6.868	-10.687
i_soln	22	-30.588	-20.048	-5.965	-18.812	-39.761	-5.961	-10.372
i_soln	23	-34.029	-19.231	-6.973	-20.523	-39.426	-7.026	-9.634
i_soln	24	-39.336	-19.929	-8.419	-20.022	-39.978	-8.178	-10.010
i_soln	25	-36.962	-18.898	-8.083	-19.564	-39.642	-7.842	-9.365
i_soln	26	-34.813	-17.938	-7.783	-15.389	-38.945	-7.545	-8.369
i_soln	27	-39.077	-20.430	-7.930	-19.298	-39.988	-7.988	-10.000
i_soln	28	-38.003	-18.702	-8.387	-18.119	-39.151	-8.151	-8.650
i_soln	29	-38.262	-19.079	-8.359	-17.262	-39.322	-8.122	-8.951
i_soln	30	-29.203	-19.355	-5.603	-19.349	-39.388	-5.788	-9.721
i_soln	31	-31.848	-18.786	-6.367	-20.718	-39.191	-6.591	-9.319
i_soln	32	-26.817	-19.301	-5.071	-18.264	-39.405	-5.205	-9.428
i_soln	33	-33.522	-19.428	-6.806	-20.811	-39.650	-6.849	-10.340
i_soln	34	-31.922	-19.408	-6.249	-20.589	-39.655	-6.455	-10.332
i_soln	35	-36.196	-19.268	-7.500	-21.129	-39.558	-7.558	-9.814
i_soln	36	-31.673	-18.347	-6.605	-21.128	-39.058	-6.657	-9.564
i_soln	37	-32.965	-18.844	-6.804	-20.780	-39.256	-6.856	-9.682
i_soln	38	-19.471	-18.919	-3.186	-16.009	-39.064	-3.464	-9.101
i_soln	39	-22.477	-17.869	-4.149	-18.348	-38.878	-4.478	-8.782
i_soln	40	-29.064	-18.562	-5.621	-19.508	-39.152	-5.951	-8.642
i_soln	41	-26.819	-19.764	-4.884	-17.934	-39.690	-5.090	-10.304
i_soln	42	-21.075	-20.180	-3.770	-16.102	-39.750	-3.550	-10.358
i_soln	43	-38.062	-20.963	-7.548	-19.430	-40.001	-7.601	-9.713
i_soln	44	-39.240	-20.588	-7.929	-16.560	-39.789	-7.989	-9.549
i_soln	45	-38.959	-20.386	-7.909	-16.411	-39.769	-7.969	-9.674
i_soln	46	-31.096	-19.954	-5.926	-19.273	-39.712	-6.112	-10.030
i_soln	47	-21.230	-20.534	-3.545	-15.249	-39.700	-3.500	-9.409
i_soln	48	-15.818	-20.599	-2.665	-15.191	-40.131	-2.131	-10.046
i_soln	49	-30.006	-19.298	-5.994	-19.978	-39.603	-6.003	-10.257
i_soln	50	-20.527	-18.694	-3.752	-16.489	-39.184	-3.784	-8.731

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Al(OH)3(am)	si_Al2O3	si_Al4(OH)10SO4	si_AlAsO4:2H2O	si_AlOHSO4	si_Alunite	si_Anglesite
i_soln	**51**	6.2	4	7.1E-04	1.7E-03	1	1.56E-16	6.26E-12	4.79E-04	5.12E-05	4.99E-05	4.11E-05	7.54E-04	2.08E-04	3.00E-05	5.26E-06	1.92E-04	1.10E-07	0.00E+00	0.00E+00	2.55E-07	1.561	5.070	10.561	-4.073	-0.592	8.006	-3.445
i_soln	**52**	5.55	4	4.3E-04	1.8E-03	1	8.38E-14	3.21E-09	4.57E-04	5.12E-05	2.50E-05	4.11E-05	9.81E-04	1.77E-04	3.00E-05	5.26E-06	1.39E-04	7.08E-08	0.00E+00	0.00E+00	3.19E-07	1.019	3.985	9.586	-4.207	0.060	8.116	-3.757
i_soln	**53**	5.3	4	1.0E-04	1.2E-03	1	1.56E-13	9.16E-09	4.35E-04	2.56E-05	2.50E-05	4.11E-05	5.25E-04	1.77E-04	3.00E-05	5.26E-06	4.75E-05	4.72E-08	0.00E+00	0.00E+00	7.28E-08	0.130	2.208	6.561	-4.834	-0.299	5.962	-4.010
i_soln	**54**	8.4	4	3.6E-04	4.6E-03	1	1.45E-15	1.88E-11	2.74E-03	2.56E-05	3.49E-04	2.06E-04	3.12E-03	2.08E-04	2.90E-04	3.16E-05	2.51E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-1.419	-0.891	-5.817	-11.045	-8.029	-7.961	-5.632
i_soln	**55**	9.5	4	6.9E-04	2.4E-03	1	-1.56E-14	-3.84E-10	1.74E-03	2.56E-05	9.98E-05	4.11E-05	1.21E-03	1.56E-04	3.40E-04	3.16E-05	1.40E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-1.969	-1.991	-10.288	-13.750	-10.850	-13.045	-6.923
i_soln	**56**	10	4	1.0E-03	2.1E-03	1	-1.86E-18	-5.19E-14	1.65E-03	2.56E-05	2.50E-05	4.11E-05	7.19E-04	1.25E-04	4.60E-04	2.63E-05	1.68E-05	3.15E-08	0.00E+00	0.00E+00	1.09E-07	-2.448	-2.948	-13.290	-14.456	-12.416	-16.155	-7.462
i_soln	**57**	5.3	4	1.1E-04	7.5E-04	1	2.44E-20	2.29E-15	8.70E-05	2.56E-05	2.50E-05	4.11E-05	5.12E-04	1.04E-05	2.00E-05	5.26E-06	6.34E-05	4.72E-08	0.00E+00	0.00E+00	4.19E-07	0.174	2.296	5.515	-4.786	-1.477	3.654	-5.371
i_soln	**58**	4.8	4	4.9E-05	1.3E-03	1	1.96E-16	1.18E-11	1.31E-04	5.12E-05	2.50E-05	4.11E-05	7.65E-04	4.16E-05	2.00E-05	5.26E-06	9.53E-05	1.57E-08	0.00E+00	0.00E+00	2.00E-07	-0.742	0.464	3.356	-5.221	-0.889	3.711	-4.587
i_soln	**59**	4.6	4	2.3E-05	1.3E-03	1	7.01E-14	3.95E-09	1.74E-04	7.67E-05	2.50E-05	4.11E-05	8.29E-04	4.16E-05	2.00E-05	5.26E-06	4.33E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	-1.185	-0.423	1.940	-5.524	-0.974	3.073	-4.454
i_soln	**60**	7.2	4	3.8E-05	2.3E-03	1	8.63E-19	3.59E-14	1.74E-04	2.56E-05	3.24E-04	2.06E-04	6.42E-05	5.93E-04	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	4.02E-06	-0.713	0.522	-0.099	-8.057	-4.430	-1.250	-4.160
i_soln	**61**	6.5	4	3.5E-05	1.1E-03	1	9.94E-14	8.18E-09	1.31E-04	2.56E-05	1.75E-04	4.11E-05	6.46E-05	2.71E-04	2.00E-05	5.26E-06	1.61E-06	1.57E-08	0.00E+00	0.00E+00	1.35E-05	-0.016	1.916	3.789	-6.310	-2.634	2.348	-4.311
i_soln	**62**	5.2	4	8.7E-07	1.4E-03	1	5.71E-13	3.52E-08	1.74E-04	2.56E-05	1.25E-04	1.65E-04	1.95E-04	3.23E-04	2.00E-05	5.26E-06	5.01E-06	1.57E-08	0.00E+00	0.00E+00	8.72E-06	-1.253	-0.559	1.502	-6.117	-1.209	2.658	-4.234
i_soln	**63**	4.5	4	-3.7E-05	6.1E-03	1	-9.04E-19	-1.41E-14	2.61E-04	2.56E-05	1.10E-03	5.35E-04	2.32E-04	1.73E-03	2.00E-05	5.26E-06	2.15E-06	1.57E-08	0.00E+00	0.00E+00	3.42E-05	-3.970	-5.992	-7.352	-8.292	-1.912	-2.185	-3.784
i_soln	**64**	6.7	4	5.1E-04	5.3E-04	1	1.48E-13	1.79E-08	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.68E-04	1.04E-05	4.00E-05	1.05E-05	6.36E-05	1.57E-08	0.00E+00	0.00E+00	5.28E-07	1.136	4.219	6.607	-5.414	-3.271	2.430	-5.375
i_soln	**65**	7.4	4	7.0E-04	4.5E-04	1	1.34E-16	1.89E-11	1.31E-04	2.56E-05	2.50E-05	4.11E-05	1.30E-04	2.08E-05	5.00E-05	1.05E-05	6.54E-05	3.15E-08	0.00E+00	0.00E+00	9.47E-07	0.576	3.100	3.275	-7.068	-4.923	-0.733	-5.072
i_soln	**66**	8.5	4	2.2E-03	1.3E-03	1	-1.68E-18	-8.35E-14	6.96E-04	7.67E-05	4.99E-05	4.11E-05	1.40E-04	1.46E-04	7.99E-05	5.79E-05	1.93E-04	7.87E-08	0.00E+00	0.00E+00	4.00E-07	-0.036	1.876	-0.557	-9.317	-6.919	-3.766	-4.624
i_soln	**67**	9.3	4	6.2E-04	1.1E-03	1	6.69E-20	3.88E-15	6.09E-04	2.56E-05	7.49E-05	4.11E-05	2.61E-04	8.33E-05	3.00E-04	2.11E-05	1.63E-05	1.57E-08	0.00E+00	0.00E+00	1.27E-07	-1.735	-1.523	-9.194	-12.781	-10.458	-12.220	-6.897
i_soln	**68**	9.6	4	6.6E-04	1.5E-03	1	-1.04E-15	-4.34E-11	1.04E-03	2.56E-05	2.50E-05	4.11E-05	3.59E-04	1.67E-04	3.30E-04	2.11E-05	1.41E-05	1.51E-06	0.00E+00	0.00E+00	4.73E-07	-2.145	-2.342	-11.138	-13.804	-11.174	-13.763	-6.996
i_soln	**69**	4.65	4	1.5E-07	7.3E-04	1	2.07E-15	2.11E-10	1.09E-04	2.56E-05	2.50E-05	4.11E-05	4.46E-04	2.60E-05	2.00E-05	5.26E-06	2.29E-05	1.57E-08	0.00E+00	0.00E+00	1.55E-07	-1.428	-0.908	0.770	-5.790	-1.416	1.524	-5.308
i_soln	**70**	4.4	4	-3.4E-05	6.7E-04	1	1.36E-17	1.53E-12	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.98E-04	8.33E-05	9.99E-06	5.26E-06	8.77E-06	1.57E-08	0.00E+00	0.00E+00	9.83E-07	-2.379	-2.810	-2.001	-6.694	-1.335	0.487	-4.779
i_soln	**71**	4.5	4	-2.9E-05	5.3E-04	1	2.22E-17	3.02E-12	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.49E-04	6.25E-05	9.99E-06	5.26E-06	2.51E-06	1.57E-08	0.00E+00	0.00E+00	2.18E-07	-2.522	-3.097	-2.863	-6.825	-1.767	-0.419	-4.860
i_soln	**72**	8.6	4	4.1E-04	9.0E-04	1	-1.05E-16	-8.26E-12	1.31E-04	2.56E-05	2.00E-04	4.11E-05	2.77E-04	2.08E-05	2.60E-04	2.11E-05	6.80E-06	1.57E-08	0.00E+00	0.00E+00	1.64E-07	-1.261	-0.574	-6.502	-11.206	-9.189	-9.906	-6.714
i_soln	**73**	9.2	4	3.7E-04	1.1E-03	1	-1.87E-15	-1.31E-10	1.74E-04	2.56E-05	2.25E-04	4.11E-05	2.20E-04	1.04E-04	2.20E-04	1.58E-05	5.91E-06	1.57E-08	0.00E+00	0.00E+00	1.46E-07	-2.003	-2.059	-9.979	-13.150	-10.439	-12.550	-6.626
i_soln	**74**	9.4	4	3.8E-04	1.1E-03	1	-3.13E-15	-2.19E-10	1.74E-04	2.56E-05	2.25E-04	4.11E-05	2.58E-04	7.29E-05	2.20E-04	2.11E-05	5.01E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-2.287	-2.626	-11.667	-13.834	-11.277	-14.308	-7.020
i_soln	**75**	9.1	4	8.3E-04	2.2E-03	1	-4.73E-19	-1.45E-14	1.09E-03	2.56E-05	1.50E-04	1.23E-04	4.22E-04	3.44E-04	3.60E-04	4.74E-05	1.65E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-1.287	-0.627	-6.422	-12.264	-9.029	-9.122	-6.130
i_soln	**76**	9.1	4	5.2E-04	2.9E-03	1	7.14E-19	1.74E-14	1.52E-03	2.56E-05	1.50E-04	1.23E-04	4.29E-04	5.93E-04	3.20E-04	6.32E-05	3.22E-06	6.30E-08	0.00E+00	0.00E+00	1.82E-08	-1.782	-1.617	-8.174	-12.771	-9.298	-10.157	-5.874
i_soln	**77**	9.6	4	9.7E-04	2.0E-03	1	1.65E-18	5.19E-14	1.35E-03	2.56E-05	7.49E-05	4.11E-05	3.70E-04	2.92E-04	3.50E-04	4.74E-05	2.35E-05	6.30E-08	0.00E+00	0.00E+00	9.10E-08	-1.762	-1.576	-9.378	-13.736	-10.563	-12.162	-6.477
i_soln	**78**	9.5	4	7.2E-04	2.1E-03	1	5.89E-19	1.76E-14	1.52E-03	2.56E-05	2.50E-05	4.11E-05	5.17E-04	3.33E-04	2.90E-04	3.68E-05	2.40E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-07	-1.866	-1.785	-9.538	-13.164	-10.408	-12.058	-6.253
i_soln	**79**	4.75	4	3.6E-06	6.7E-04	1	4.71E-14	5.07E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.09E-04	3.12E-05	9.99E-06	5.26E-06	2.10E-05	1.57E-08	0.00E+00	0.00E+00	2.73E-08	-1.295	-0.641	1.207	-5.728	-1.380	1.831	-5.203
i_soln	**80**	4.8	4	1.1E-06	6.9E-04	1	4.49E-15	4.50E-10	2.17E-04	2.56E-05	2.50E-05	4.11E-05	3.85E-04	6.25E-05	9.99E-06	5.26E-06	1.02E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-1.322	-0.697	1.313	-5.797	-1.190	2.232	-4.590
i_soln	**81**	5.3	4	4.3E-05	4.1E-04	1	-1.72E-16	-2.96E-11	4.35E-05	2.56E-05	2.50E-05	4.11E-05	2.69E-04	1.04E-05	2.00E-05	5.26E-06	7.16E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.202	1.543	4.047	-5.158	-1.816	2.604	-5.618
i_soln	**82**	5.5	4	1.0E-04	5.2E-04	1	4.69E-17	6.05E-12	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.64E-04	1.04E-05	2.00E-05	5.26E-06	1.67E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.367	2.681	5.919	-4.796	-1.652	3.700	-5.330
i_soln	**83**	5	4	3.2E-05	6.2E-04	1	1.04E-13	1.17E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.06E-04	2.08E-05	2.00E-05	5.26E-06	1.43E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.645	0.658	3.142	-5.304	-1.394	2.703	-5.365
i_soln	**84**	5.3	4	4.7E-05	5.1E-04	1	9.52E-15	1.31E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.23E-04	2.08E-05	9.99E-06	5.26E-06	1.88E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.166	1.615	4.486	-5.124	-1.486	3.299	-5.330
i_soln	**85**	5.2	4	1.4E-04	1.0E-03	1	1.73E-19	1.17E-14	1.52E-04	5.12E-05	2.50E-05	4.11E-05	6.83E-04	3.12E-05	2.50E-05	5.26E-06	7.36E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	0.153	2.254	6.070	-4.311	-0.859	5.069	-4.769
i_soln	**86**	6.2	4	6.9E-04	9.7E-04	1	-2.38E-16	-1.62E-11	1.31E-04	5.12E-05	2.50E-05	4.11E-05	6.05E-04	2.08E-05	3.00E-05	5.26E-06	1.33E-04	6.29E-08	0.00E+00	0.00E+00	5.82E-07	1.552	5.052	9.549	-4.375	-1.577	6.032	-4.532
i_soln	**87**	5.6	4	1.9E-04	6.8E-04	1	2.41E-19	2.36E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.65E-04	2.08E-05	2.00E-05	5.26E-06	3.26E-05	3.15E-08	0.00E+00	0.00E+00	2.18E-07	0.720	3.388	7.424	-4.548	-1.206	5.042	-4.872
i_soln	**88**	5.6	4	1.8E-04	6.8E-04	1	-2.50E-19	-2.49E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.39E-04	3.12E-05	2.00E-05	5.26E-06	3.40E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-07	0.685	3.317	7.459	-4.584	-1.065	5.290	-4.696
i_soln	**89**	5.7	4	1.2E-04	7.3E-04	1	1.43E-14	1.29E-09	2.61E-04	2.56E-05	2.50E-05	4.11E-05	4.27E-04	6.25E-05	2.00E-05	5.26E-06	2.26E-05	3.15E-08	0.00E+00	0.00E+00	7.28E-08	0.612	3.171	7.276	-4.762	-1.029	5.388	-4.571
i_soln	**90**	4.8	4	-1.4E-05	2.8E-03	1	1.45E-18	4.42E-14	6.53E-04	2.56E-05	3.24E-04	1.65E-04	3.69E-04	6.87E-04	9.99E-06	5.26E-06	3.22E-06	3.15E-08	0.00E+00	0.00E+00	1.69E-06	-2.074	-2.200	-0.691	-6.561	-0.940	1.968	-4.005
i_soln	**91**	6.6	4	1.9E-04	2.0E-03	1	2.78E-14	1.06E-09	6.53E-04	2.56E-05	2.25E-04	8.23E-05	4.66E-04	4.16E-04	3.00E-05	5.26E-06	2.47E-05	3.15E-08	0.00E+00	0.00E+00	4.00E-07	0.769	3.486	6.890	-5.668	-1.888	4.718	-3.897
i_soln	**92**	6.2	4	1.7E-04	5.4E-04	1	3.96E-14	4.78E-09	1.74E-04	2.56E-05	2.50E-05	4.11E-05	3.20E-04	3.12E-05	3.00E-05	1.05E-05	1.67E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.925	3.798	7.242	-4.997	-2.003	4.255	-4.859
i_soln	**93**	5	4	1.2E-05	5.2E-04	1	7.24E-17	9.55E-12	1.30E-04	2.56E-05	2.50E-05	4.11E-05	3.20E-04	3.12E-05	2.00E-05	5.26E-06	7.70E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.939	0.069	2.164	-5.597	-1.488	2.221	-5.161
i_soln	**94**	4.9	4	3.3E-06	5.7E-04	1	9.55E-16	1.15E-10	1.74E-04	2.56E-05	2.50E-05	4.11E-05	3.37E-04	4.16E-05	2.00E-05	5.26E-06	4.83E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-1.218	-0.488	1.373	-5.781	-1.444	1.930	-5.042
i_soln	**95**	4.5	4	-3.3E-05	1.1E-03	1	2.69E-16	1.94E-11	2.18E-04	2.56E-05	1.25E-04	8.23E-05	2.08E-04	2.50E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	7.46E-07	-4.189	-6.431	-8.941	-8.495	-2.843	-4.245	-4.315
i_soln	**96**	4.7	4	-1.2E-05	6.0E-04	1	3.84E-16	4.61E-11	1.74E-04	2.56E-05	2.50E-05	4.11E-05	2.61E-04	8.33E-05	1.50E-05	5.26E-06	4.30E-06	1.57E-08	0.00E+00	0.00E+00	6.37E-08	-1.823	-1.697	-0.347	-6.217	-1.349	1.315	-4.749
i_soln	**97**	4.6	4	-2.3E-05	8.3E-04	1	8.67E-17	8.11E-12	2.17E-04	2.56E-05	7.49E-05	4.11E-05	2.15E-04	1.67E-04	9.99E-06	5.26E-06	1.79E-06	1.57E-08	0.00E+00	0.00E+00	2.55E-07	-2.473	-2.998	-2.446	-6.808	-1.497	0.266	-4.466
i_soln	**98**	4.7	4	-1.6E-05	9.3E-04	1	1.16E-15	9.71E-11	2.83E-04	2.56E-05	7.49E-05	4.11E-05	2.10E-04	2.03E-04	9.99E-06	5.26E-06	2.06E-06	1.57E-08	0.00E+00	0.00E+00	2.73E-07	-2.131	-2.314	-1.196	-6.528	-1.273	1.155	-4.392
i_soln	**99**	7	4	2.6E-04	6.3E-03	1	1.13E-18	1.71E-14	4.58E-04	2.56E-05	1.45E-03	2.06E-04	8.46E-05	1.79E-03	1.30E-04	1.05E-05	1.27E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	0.347	2.641	4.929	-6.717	-2.581	3.292	-3.872
i_soln	**100**	4.4	4	-4.3E-05	3.4E-03	1	1.94E-13	4.36E-09	1.39E-03	2.56E-05	2.25E-04	1.65E-04	6.68E-04	8.33E-04	9.99E-06	5.26E-06	6.09E-06	1.57E-08	0.00E+00	0.00E+00	2.37E-07	-3.180	-4.413	-4.241	-7.505	-1.170	-0.002	-3.953

state	soln	si_Anhydrite	si_Antlerite	si_Aragonite	si_Arsenolite	si_Artinite	si_As2O5	si_Atacamite	si_Azurite	si_Ba(OH)2:8H2O	si_Ba2V2O7:2H2O	si_Ba3(AsO4)2	si_Ba3(VO4)2:4H2O	si_BaCrO4	si_BaF2	si_Barite	si_Be(OH)2(alpha)	si_Be(OH)2(am)	si_Be(OH)2(beta)	si_Bianchite	si_Birnessite	si_Bixbyite	si_Boehmite	si_Brochantite
i_soln	51	-3.819	-9.087	-5.141	-49.786	-15.199	-29.975	-6.145	-10.100	-17.527	-13.616	6.244	-23.817	-21.032	-12.306	0.665	-2.354	-2.654	-1.954	-7.457	-17.330	-18.234	3.783	-10.227
i_soln	52	-4.224	-12.339	-6.566	-42.951	-17.623	-29.158	-8.344	-14.198	-18.950	-19.233	2.792	-30.857	-25.638	-14.914	0.436	-3.185	-3.485	-2.785	-7.604	-19.833	-21.940	3.241	-14.960
i_soln	53	-4.181	-13.761	-7.025	-39.904	-18.568	-28.634	-9.664	-16.093	-19.598	-21.525	1.370	-33.797	-27.738	-14.767	0.317	-3.556	-3.856	-3.156	-7.710	-21.459	-24.691	2.352	-17.032
i_soln	54	-3.077	-6.979	-0.811	-83.349	-5.964	-37.957	-3.362	-5.272	-13.234	-9.745	11.141	-15.653	-9.016	-8.902	0.501	-0.497	-0.797	-0.097	-8.639	-9.733	-7.439	0.803	-5.930
i_soln	55	-3.678	-7.180	-0.228	-100.770	-4.010	-42.267	-3.487	-5.377	-10.978	-8.940	13.597	-12.593	-4.009	-8.816	0.485	-0.532	-0.832	-0.132	-9.772	-5.017	-0.208	0.253	-5.441
i_soln	56	-4.407	-7.187	-0.357	-105.682	-2.553	-42.723	-3.490	-5.271	-10.124	-9.163	15.704	-11.960	-3.871	-9.117	0.252	-0.820	-1.120	-0.420	-10.821	-2.589	3.649	-0.226	-5.088
i_soln	57	-5.379	-14.913	-7.176	-39.888	-18.699	-28.626	-9.625	-16.375	-19.933	-22.194	0.374	-34.801	-28.225	-15.161	-1.240	-3.543	-3.843	-3.143	-9.273	-20.676	-23.125	2.396	-18.161
i_soln	58	-4.892	-17.902	-8.167	-33.965	-20.706	-27.665	-11.949	-20.816	-20.591	-25.510	-0.639	-38.775	-31.068	-15.995	-0.395	-4.408	-4.708	-4.008	-8.465	-23.014	-26.801	1.480	-22.649
i_soln	59	-4.935	-17.851	-8.565	-31.803	-21.506	-27.384	-11.920	-21.114	-20.874	-26.877	-1.209	-40.425	-32.364	-16.193	-0.319	-4.780	-5.080	-4.380	-8.295	-24.557	-29.487	1.037	-22.699
i_soln	60	-2.602	-7.657	-3.224	-64.623	-10.721	-33.394	-6.221	-8.833	-15.893	-12.174	7.727	-20.741	-16.195	-10.700	0.734	-1.327	-1.627	-0.927	-7.520	-12.161	-9.895	1.509	-7.798
i_soln	61	-3.129	-10.268	-4.313	-54.825	-14.303	-31.295	-7.985	-11.470	-17.278	-13.659	5.668	-23.611	-20.442	-10.741	0.448	-2.038	-2.338	-1.638	-7.931	-14.392	-12.957	2.206	-11.646
i_soln	62	-3.224	-15.337	-6.710	-38.705	-17.959	-28.435	-11.362	-18.480	-19.818	-22.364	0.911	-34.855	-28.940	-12.869	0.571	-3.740	-4.040	-3.340	-7.931	-19.794	-21.162	0.969	-19.292
i_soln	63	-1.786	-17.867	-7.261	-30.938	-19.933	-27.351	-13.632	-22.975	-21.108	-27.745	-1.877	-41.527	-33.944	-11.984	1.294	-5.122	-5.422	-4.722	-6.975	-22.120	-24.414	-1.748	-23.337
i_soln	64	-5.327	-10.860	-4.546	-57.446	-13.262	-31.805	-6.764	-9.922	-16.960	-13.301	6.113	-22.936	-18.801	-10.477	-1.023	-1.823	-2.123	-1.423	-9.280	-14.967	-14.507	3.358	-11.838
i_soln	65	-5.016	-7.530	-3.625	-67.424	-10.938	-33.994	-4.830	-6.464	-15.318	-11.414	8.851	-19.405	-14.207	-9.886	-0.473	-1.137	-1.437	-0.737	-8.787	-11.910	-9.794	2.798	-7.035
i_soln	66	-3.936	-4.194	-2.038	-82.772	-7.488	-37.268	-2.756	-3.498	-12.689	-8.869	13.465	-14.231	-7.527	-7.988	0.773	-0.160	-0.460	0.240	-7.764	-7.923	-4.019	2.186	-2.125
i_soln	67	-4.005	-7.209	-0.530	-96.231	-4.552	-40.798	-4.069	-5.197	-11.529	-9.233	13.413	-13.436	-4.762	-9.305	0.092	-0.460	-0.760	-0.060	-9.650	-5.229	-0.231	0.487	-5.532
i_soln	68	-4.217	-1.290	-0.737	-101.087	-3.701	-42.026	-0.083	0.425	-11.064	-9.456	13.580	-13.195	-3.523	-9.445	0.251	-0.575	-0.875	-0.175	-9.609	-3.491	2.644	0.077	2.461
i_soln	69	-5.016	-18.571	-8.447	-32.297	-21.269	-27.431	-12.581	-21.637	-21.428	-27.783	-2.915	-41.885	-32.942	-16.034	-1.072	-4.670	-4.970	-4.270	-8.847	-23.708	-27.889	0.794	-23.593
i_soln	70	-4.485	-19.032	-9.246	-30.109	-22.569	-27.336	-13.502	-23.725	-21.601	-29.131	-3.341	-43.406	-34.700	-15.310	-0.213	-5.144	-5.444	-4.744	-8.749	-23.906	-27.785	-0.157	-24.552
i_soln	71	-4.567	-18.698	-9.041	-30.857	-22.157	-27.311	-13.263	-23.105	-21.604	-28.736	-3.325	-43.015	-34.180	-14.653	-0.504	-4.950	-5.250	-4.550	-8.913	-24.152	-28.478	-0.300	-24.011
i_soln	72	-4.163	-7.693	-0.809	-86.230	-6.644	-38.597	-4.195	-5.130	-12.946	-9.669	11.365	-15.288	-8.063	-9.319	-0.529	-0.436	-0.736	-0.036	-9.586	-7.895	-4.164	0.961	-6.443
i_soln	73	-3.436	-6.924	-0.279	-95.835	-4.978	-41.000	-4.046	-5.262	-11.742	-9.292	12.572	-13.708	-5.186	-9.569	0.167	-0.436	-0.736	-0.036	-9.574	-5.568	-0.709	0.219	-5.248
i_soln	74	-3.591	-7.242	-0.104	-99.035	-4.404	-41.800	-4.018	-5.473	-11.316	-9.179	13.050	-13.169	-4.393	-9.293	0.038	-0.491	-0.791	-0.091	-10.108	-5.376	-0.725	-0.065	-5.487
i_soln	75	-3.161	-6.631	-0.382	-94.352	-4.186	-40.658	-3.936	-5.031	-11.695	-8.887	13.055	-13.256	-5.085	-8.386	0.907	-0.421	-0.721	-0.021	-8.562	-6.306	-1.985	0.935	-5.089
i_soln	76	-2.958	-4.529	-0.459	-94.405	-4.283	-40.685	-2.681	-3.264	-11.803	-9.125	12.705	-13.602	-5.196	-8.249	1.026	-0.422	-0.722	-0.022	-8.146	-6.930	-3.234	0.440	-2.361
i_soln	77	-3.532	-5.218	-0.262	-102.347	-3.722	-42.655	-2.844	-3.696	-10.796	-8.945	13.756	-12.415	-3.566	-8.478	0.747	-0.577	-0.877	-0.177	-9.118	-4.226	1.176	0.460	-2.851
i_soln	78	-3.945	-6.791	-0.896	-98.839	-4.078	-41.302	-3.821	-5.452	-11.050	-9.073	14.347	-12.797	-4.077	-8.751	0.752	-0.532	-0.832	-0.132	-9.142	-4.321	1.185	0.356	-5.036
i_soln	79	-4.911	-18.061	-8.548	-33.380	-21.169	-27.572	-12.313	-21.636	-21.041	-26.611	-1.898	-40.326	-32.351	-15.517	-0.783	-4.484	-4.784	-4.084	-8.777	-24.059	-28.792	0.928	-22.880
i_soln	80	-4.597	-17.551	-8.453	-33.947	-20.976	-27.656	-12.195	-21.346	-20.870	-26.068	-1.467	-39.611	-31.933	-15.102	-0.394	-4.396	-4.696	-3.996	-8.451	-24.038	-28.850	0.900	-22.273
i_soln	81	-5.328	-16.249	-7.162	-39.872	-18.671	-28.618	-10.817	-17.748	-20.159	-22.647	-0.297	-35.480	-28.739	-14.649	-1.429	-3.535	-3.835	-3.135	-9.411	-22.023	-25.819	2.020	-19.956
i_soln	82	-5.338	-15.480	-6.788	-42.299	-17.902	-29.032	-10.104	-16.616	-19.324	-20.181	1.794	-32.179	-26.949	-14.165	-0.999	-3.235	-3.535	-2.835	-8.975	-21.228	-24.630	2.589	-18.795
i_soln	83	-5.073	-17.219	-7.754	-36.284	-19.872	-28.024	-11.563	-19.546	-20.391	-24.309	-0.398	-37.374	-30.450	-15.168	-0.796	-4.037	-4.337	-3.637	-8.839	-22.932	-27.038	1.577	-21.537
i_soln	84	-5.038	-15.974	-7.468	-39.877	-18.983	-28.621	-10.750	-18.369	-19.985	-22.299	0.222	-34.958	-28.570	-14.549	-0.960	-3.538	-3.838	-3.138	-9.034	-22.028	-25.830	2.056	-19.687
i_soln	85	-4.950	-16.346	-7.282	-37.102	-19.015	-27.633	-10.784	-18.239	-19.738	-22.204	1.951	-34.616	-28.527	-15.328	-0.406	-3.710	-4.010	-3.310	-8.444	-22.148	-25.869	2.375	-20.286
i_soln	86	-5.064	-10.698	-5.408	-50.958	-15.139	-30.561	-6.658	-10.730	-17.696	-14.551	5.150	-24.920	-21.362	-12.440	-0.481	-2.346	-2.646	-1.946	-8.618	-16.941	-17.455	3.774	-12.048
i_soln	87	-5.052	-13.915	-6.609	-43.522	-17.530	-29.243	-9.117	-15.171	-19.076	-19.288	2.328	-31.038	-25.933	-14.227	-0.658	-3.095	-3.395	-2.695	-8.753	-19.756	-21.886	2.942	-16.740
i_soln	88	-4.876	-13.738	-6.610	-43.522	-17.531	-29.243	-9.143	-15.171	-18.992	-19.121	2.578	-30.788	-25.850	-14.077	-0.398	-3.095	-3.395	-2.695	-8.532	-19.836	-22.046	2.907	-16.563
i_soln	89	-4.572	-13.044	-6.431	-44.744	-17.156	-29.454	-8.864	-14.620	-18.839	-18.423	2.828	-29.935	-25.533	-13.459	-0.136	-2.961	-3.261	-2.561	-8.371	-19.838	-22.249	2.834	-15.674
i_soln	90	-2.564	-15.877	-7.421	-33.998	-19.923	-27.681	-11.778	-20.675	-20.407	-25.141	-0.103	-38.222	-31.577	-13.326	1.071	-4.463	-4.763	-4.063	-7.652	-22.149	-25.072	0.148	-20.376
i_soln	91	-2.889	-8.939	-3.923	-56.196	-13.246	-31.580	-6.320	-9.881	-16.789	-12.819	6.851	-22.282	-19.544	-10.587	0.897	-1.932	-2.232	-1.532	-7.782	-15.551	-15.475	2.991	-9.861
i_soln	92	-4.850	-12.243	-5.392	-50.934	-15.108	-30.549	-8.096	-12.473	-17.776	-14.708	4.920	-25.159	-22.212	-11.304	-0.361	-2.357	-2.657	-1.957	-8.509	-18.430	-20.434	3.147	-14.177
i_soln	93	-4.869	-17.003	-7.750	-36.279	-19.866	-28.022	-11.656	-19.530	-20.505	-24.538	-0.739	-37.718	-30.561	-14.710	-0.710	-4.036	-4.336	-3.636	-8.780	-22.929	-27.031	1.283	-21.316
i_soln	94	-4.750	-17.289	-7.949	-35.100	-20.267	-27.832	-11.938	-20.130	-20.718	-25.364	-1.189	-38.757	-31.274	-14.767	-0.601	-4.213	-4.513	-3.813	-8.989	-23.331	-27.636	1.004	-21.804
i_soln	95	-3.311	-18.199	-8.375	-30.873	-21.617	-27.319	-13.409	-23.197	-21.157	-27.842	-1.991	-41.673	-33.794	-11.711	0.533	-5.045	-5.345	-4.645	-7.772	-23.651	-27.475	-1.967	-23.543
i_soln	96	-4.454	-17.795	-8.473	-32.826	-21.194	-27.495	-12.654	-21.575	-21.009	-26.745	-1.723	-40.428	-32.574	-14.651	-0.191	-4.578	-4.878	-4.178	-8.655	-23.892	-28.357	0.400	-22.713
i_soln	97	-3.689	-17.929	-8.384	-31.790	-21.793	-27.377	-13.064	-22.559	-21.098	-27.325	-1.874	-41.097	-33.192	-13.905	0.221	-4.779	-5.079	-4.379	-8.430	-23.703	-27.779	-0.251	-23.059
i_soln	98	-3.613	-17.463	-8.191	-32.837	-21.405	-27.501	-12.785	-21.979	-20.910	-26.547	-1.431	-40.130	-32.502	-13.997	0.292	-4.596	-4.896	-4.196	-8.239	-23.278	-27.130	0.091	-22.398
i_soln	99	-1.656	-8.263	-2.097	-61.903	-10.722	-32.834	-6.844	-8.289	-16.052	-12.118	7.810	-20.843	-17.185	-9.899	1.364	-1.544	-1.844	-1.144	-7.557	-15.097	-15.368	2.569	-8.869
i_soln	100	-2.663	-18.367	-8.390	-30.145	-21.545	-27.355	-13.367	-24.026	-21.209	-28.346	-2.182	-42.228	-34.471	-13.510	1.146	-5.230	-5.530	-4.830	-7.091	-24.620	-29.214	-0.958	-23.988

state	soln	si_Brucite	si_Bunsenite	si_Ca(VO3)2	si_Ca2V2O7	si_Ca2V2O7:2H2O	si_Ca3(AsO4)2:4H2O	si_Ca3(VO4)2	si_Ca3(VO4)2:4H2O	si_CaCrO4	si_Calcite	si_Cd(BO2)2	si_Cd(OH)2	si_Cd(OH)2(am)	si_Cd3(OH)2(SO4)2	si_Cd3(OH)4SO4	si_Cd4(OH)6SO4	si_CdCl2	si_CdCl2:1H2O	si_CdCl2:2.5H2O	si_CdF2	si_Cdmetal(alpha)	si_Cdmetal(gamma)	si_CdOHCl
i_soln	51	-8.921	-6.828	-9.135	-12.971	-17.023	-21.556	-26.426	-27.326	-27.300	-4.961	-15.474	-10.414	-10.500	-29.385	-29.052	-31.662	-14.797	-13.762	-13.543	-20.551	-30.684	-30.788	-9.650
i_soln	52	-10.220	-8.466	-13.505	-18.941	-22.993	-25.538	-33.996	-34.896	-32.082	-6.386	-16.835	-11.720	-11.806	-30.914	-31.775	-35.691	-14.574	-13.540	-13.320	-23.041	-30.690	-30.794	-10.191
i_soln	53	-10.707	-9.216	-14.987	-20.909	-24.961	-26.475	-36.452	-37.352	-34.021	-6.845	-17.252	-12.192	-12.278	-31.273	-32.664	-37.052	-15.084	-14.049	-13.830	-22.719	-30.663	-30.766	-10.683
i_soln	54	-3.869	-3.609	-8.651	-7.289	-11.341	-13.943	-15.546	-16.446	-14.378	-0.631	-11.857	-6.150	-6.236	-25.506	-20.716	-19.062	-13.721	-12.686	-12.467	-17.176	-30.820	-30.924	-6.980
i_soln	55	-2.349	-1.843	-10.687	-7.655	-11.707	-13.243	-14.242	-15.142	-9.956	-0.048	-10.420	-4.140	-4.226	-24.019	-16.958	-13.294	-14.721	-13.687	-13.467	-17.336	-31.010	-31.114	-6.475
i_soln	56	-1.376	-1.008	-12.260	-8.868	-12.920	-12.622	-15.096	-15.997	-10.314	-0.177	-10.632	-3.490	-3.576	-24.245	-16.097	-11.783	-15.519	-14.484	-14.265	-17.841	-31.361	-31.464	-6.549
i_soln	57	-10.684	-9.669	-14.963	-20.860	-24.912	-26.393	-36.378	-37.278	-34.148	-6.996	-17.874	-12.168	-12.254	-33.644	-33.813	-38.177	-15.074	-14.039	-13.820	-22.754	-30.639	-30.742	-10.666
i_soln	58	-11.701	-10.686	-17.978	-24.893	-28.945	-28.481	-41.427	-42.327	-37.350	-7.987	-18.593	-13.193	-13.279	-33.711	-35.383	-40.772	-14.757	-13.723	-13.503	-23.954	-30.663	-30.767	-11.019
i_soln	59	-12.103	-11.088	-19.181	-26.497	-30.549	-29.407	-43.433	-44.333	-38.765	-8.385	-18.772	-13.597	-13.683	-34.206	-36.237	-42.029	-14.693	-13.658	-13.438	-24.273	-30.667	-30.771	-11.189
i_soln	60	-6.250	-4.029	-8.180	-9.236	-13.288	-16.633	-19.911	-20.811	-21.316	-3.044	-14.613	-8.424	-8.510	-26.545	-24.648	-25.269	-16.953	-15.918	-15.698	-18.589	-30.695	-30.798	-9.733
i_soln	61	-8.310	-5.974	-8.520	-11.201	-15.253	-19.413	-23.503	-24.403	-25.804	-4.133	-15.963	-9.781	-9.867	-28.417	-27.619	-29.597	-16.890	-15.855	-15.636	-18.602	-30.652	-30.755	-10.380
i_soln	62	-10.318	-9.003	-14.903	-20.341	-24.393	-24.824	-35.400	-36.300	-34.519	-6.530	-18.252	-12.396	-12.482	-30.938	-32.803	-37.395	-15.951	-14.917	-14.697	-20.805	-30.667	-30.770	-11.219
i_soln	63	-11.317	-10.040	-18.279	-24.293	-28.345	-25.467	-39.927	-40.827	-38.809	-7.081	-19.670	-13.918	-14.004	-31.477	-35.355	-41.469	-15.955	-14.921	-14.701	-20.152	-30.789	-30.892	-11.981
i_soln	64	-7.877	-6.386	-9.207	-12.297	-16.349	-21.148	-25.006	-25.906	-24.888	-4.366	-14.894	-9.352	-9.438	-30.707	-28.120	-29.667	-15.616	-14.582	-14.362	-18.226	-30.622	-30.726	-9.529
i_soln	65	-6.474	-4.985	-9.201	-10.888	-14.940	-19.129	-22.195	-23.095	-20.535	-3.445	-13.425	-7.945	-8.031	-28.671	-24.992	-25.133	-16.235	-15.201	-14.981	-17.870	-30.616	-30.719	-9.135
i_soln	66	-4.310	-1.913	-9.450	-8.673	-12.725	-15.010	-17.515	-18.415	-14.020	-1.858	-10.616	-5.798	-5.884	-24.999	-19.936	-17.930	-16.236	-15.201	-14.981	-16.455	-30.669	-30.772	-8.062
i_soln	67	-2.711	-1.582	-10.363	-7.815	-11.867	-13.228	-14.887	-15.787	-10.643	-0.350	-10.657	-4.389	-4.475	-24.451	-17.548	-14.133	-15.885	-14.851	-14.631	-17.522	-30.860	-30.963	-7.182
i_soln	68	-2.135	-0.955	-11.421	-8.779	-12.831	-14.172	-15.756	-16.656	-9.775	-0.557	-10.824	-3.952	-4.038	-23.751	-16.542	-12.690	-15.776	-14.741	-14.522	-17.690	-31.022	-31.126	-6.908
i_soln	69	-11.984	-10.969	-18.862	-26.059	-30.111	-29.097	-42.877	-43.777	-38.671	-8.267	-18.666	-13.466	-13.552	-34.212	-36.044	-41.705	-15.191	-14.156	-13.937	-23.430	-30.636	-30.740	-11.373
i_soln	70	-12.485	-11.471	-20.364	-28.064	-32.116	-30.509	-45.384	-46.284	-40.757	-9.066	-19.582	-13.963	-14.049	-33.637	-36.501	-42.659	-15.537	-14.503	-14.283	-23.029	-30.633	-30.737	-11.795
i_soln	71	-12.279	-11.264	-19.757	-27.250	-31.302	-29.864	-44.364	-45.264	-40.028	-8.861	-19.507	-13.754	-13.840	-33.589	-36.165	-42.115	-15.682	-14.647	-14.427	-22.160	-30.625	-30.728	-11.763
i_soln	72	-4.094	-3.166	-8.919	-7.324	-11.376	-13.886	-15.349	-16.249	-13.481	-0.629	-11.343	-5.615	-5.701	-26.539	-20.431	-18.242	-15.657	-14.623	-14.403	-17.346	-30.686	-30.789	-7.681
i_soln	73	-2.908	-2.156	-9.715	-6.885	-10.937	-12.585	-13.675	-14.576	-10.573	-0.099	-10.688	-4.522	-4.608	-24.274	-17.659	-14.377	-15.968	-14.934	-14.714	-17.706	-30.793	-30.896	-7.290
i_soln	74	-2.510	-1.888	-10.054	-6.826	-10.878	-12.189	-13.217	-14.117	-9.807	0.076	-10.613	-4.186	-4.272	-24.377	-17.207	-13.589	-15.892	-14.858	-14.638	-17.520	-30.857	-30.960	-7.084
i_soln	75	-2.670	-2.084	-9.822	-7.411	-11.463	-13.499	-14.620	-15.520	-10.938	-0.202	-10.450	-4.774	-4.860	-23.643	-17.721	-14.691	-15.466	-14.432	-14.212	-16.822	-30.844	-30.948	-7.165
i_soln	76	-2.692	-2.383	-9.867	-7.479	-11.531	-13.594	-14.711	-15.611	-10.963	-0.279	-9.678	-4.780	-4.866	-23.209	-17.513	-14.489	-15.464	-14.430	-14.210	-16.584	-30.851	-30.954	-7.167
i_soln	77	-2.154	-1.443	-10.990	-7.890	-11.942	-13.430	-14.411	-15.311	-9.629	-0.082	-9.736	-3.968	-4.054	-23.346	-16.364	-12.529	-15.773	-14.738	-14.519	-17.008	-31.039	-31.142	-6.915
i_soln	78	-2.351	-1.221	-11.282	-8.855	-12.907	-14.094	-16.048	-16.948	-10.558	-0.716	-10.210	-4.098	-4.184	-23.215	-16.493	-12.786	-15.412	-14.378	-14.158	-17.156	-30.968	-31.072	-6.800
i_soln	79	-11.782	-10.767	-18.260	-25.256	-29.308	-28.634	-41.872	-42.772	-38.264	-8.368	-18.696	-13.263	-13.349	-33.797	-35.532	-40.990	-15.261	-14.227	-14.007	-23.096	-30.634	-30.737	-11.307
i_soln	80	-11.685	-10.670	-17.963	-24.863	-28.915	-28.427	-41.382	-42.282	-37.921	-8.273	-18.599	-13.165	-13.251	-33.069	-35.021	-40.382	-15.317	-14.282	-14.063	-22.754	-30.636	-30.739	-11.286
i_soln	81	-10.671	-9.655	-14.949	-20.833	-24.885	-26.344	-36.337	-37.237	-34.422	-6.982	-17.852	-12.146	-12.232	-33.503	-33.709	-38.051	-15.605	-14.570	-14.350	-21.993	-30.617	-30.720	-10.920
i_soln	82	-10.276	-9.261	-13.757	-19.246	-23.298	-25.572	-34.355	-35.255	-33.073	-6.608	-17.008	-11.754	-11.840	-33.138	-32.939	-36.890	-15.352	-14.317	-14.098	-21.953	-30.625	-30.728	-10.598
i_soln	83	-11.280	-10.265	-16.758	-23.251	-27.303	-27.579	-39.365	-40.265	-36.511	-7.574	-18.130	-12.760	-12.846	-33.617	-34.688	-39.645	-15.265	-14.230	-14.011	-22.895	-30.631	-30.734	-11.057
i_soln	84	-10.676	-9.661	-14.954	-20.843	-24.895	-26.362	-36.352	-37.252	-34.433	-7.288	-17.815	-12.153	-12.239	-32.936	-33.436	-37.785	-15.453	-14.419	-14.199	-22.075	-30.624	-30.727	-10.848
i_soln	85	-10.895	-9.880	-15.573	-21.681	-25.733	-26.032	-37.409	-38.309	-34.856	-7.102	-17.465	-12.384	-12.470	-33.013	-33.822	-38.402	-14.844	-13.810	-13.590	-23.332	-30.655	-30.758	-10.659
i_soln	86	-8.892	-6.878	-10.000	-14.106	-18.158	-22.951	-27.831	-28.731	-27.729	-5.228	-15.780	-10.379	-10.465	-31.232	-29.923	-32.498	-14.943	-13.909	-13.689	-20.480	-30.649	-30.753	-9.706
i_soln	87	-10.082	-8.767	-13.168	-18.464	-22.516	-25.205	-33.380	-34.280	-32.112	-6.429	-16.846	-11.565	-11.651	-32.385	-32.279	-36.039	-15.152	-14.118	-13.898	-22.073	-30.635	-30.739	-10.403
i_soln	88	-10.083	-8.767	-13.169	-18.466	-22.518	-25.207	-33.383	-34.283	-32.113	-6.430	-16.846	-11.565	-11.651	-32.030	-32.101	-35.862	-15.203	-14.169	-13.949	-22.007	-30.635	-30.739	-10.429
i_soln	89	-9.887	-8.872	-12.582	-17.683	-21.735	-24.831	-32.404	-33.304	-31.753	-6.251	-16.622	-11.368	-11.454	-31.224	-31.403	-34.968	-15.230	-14.196	-13.976	-21.346	-30.639	-30.742	-10.344
i_soln	90	-11.158	-9.903	-16.931	-22.799	-26.851	-25.357	-38.286	-39.186	-36.996	-7.241	-18.864	-13.245	-13.331	-31.306	-34.260	-39.701	-15.459	-14.425	-14.205	-21.522	-30.716	-30.819	-11.397
i_soln	91	-7.836	-6.824	-8.378	-10.779	-14.831	-18.858	-22.800	-23.700	-25.114	-3.743	-15.244	-9.623	-9.709	-28.022	-27.184	-29.003	-15.227	-14.192	-13.972	-18.779	-30.694	-30.797	-9.469
i_soln	92	-8.878	-7.863	-9.983	-14.074	-18.126	-22.897	-27.786	-28.686	-28.485	-5.212	-15.460	-10.355	-10.441	-30.760	-29.651	-32.202	-15.465	-14.431	-14.211	-19.240	-30.626	-30.729	-9.955
i_soln	93	-11.277	-10.262	-16.755	-23.245	-27.297	-27.568	-39.356	-40.256	-36.505	-7.570	-18.093	-12.754	-12.840	-33.198	-34.470	-39.420	-15.465	-14.431	-14.211	-22.316	-30.625	-30.728	-11.154
i_soln	94	-11.479	-10.464	-17.357	-24.050	-28.102	-27.986	-40.363	-41.263	-37.207	-7.769	-18.238	-12.957	-13.043	-33.163	-34.757	-39.910	-15.422	-14.388	-14.168	-22.364	-30.628	-30.731	-11.235
i_soln	95	-12.009	-10.693	-19.092	-25.919	-29.971	-27.874	-42.366	-43.266	-39.422	-8.195	-19.697	-13.786	-13.872	-32.503	-35.669	-41.650	-15.881	-14.847	-14.627	-19.698	-30.656	-30.760	-11.878
i_soln	96	-11.883	-10.324	-18.562	-25.659	-29.711	-28.862	-42.377	-43.277	-38.622	-8.293	-18.899	-13.359	-13.445	-32.969	-35.262	-40.817	-15.649	-14.615	-14.395	-22.359	-30.630	-30.733	-11.549
i_soln	97	-12.096	-10.781	-18.699	-25.533	-29.585	-27.954	-41.988	-42.888	-38.886	-8.204	-19.277	-13.571	-13.657	-32.601	-35.397	-41.164	-15.832	-14.798	-14.578	-21.735	-30.642	-30.745	-11.747
i_soln	98	-11.901	-10.489	-18.104	-24.744	-28.796	-27.495	-41.004	-41.904	-38.191	-8.011	-19.154	-13.377	-13.463	-32.254	-34.931	-40.504	-15.859	-14.825	-14.605	-21.822	-30.647	-30.751	-11.663
i_soln	99	-6.735	-6.428	-7.648	-8.546	-12.598	-15.601	-19.064	-19.964	-21.990	-1.917	-14.426	-8.918	-9.004	-26.449	-25.341	-26.455	-16.833	-15.799	-15.579	-18.123	-30.789	-30.892	-9.921
i_soln	100	-11.973	-10.522	-19.508	-26.351	-30.403	-27.958	-42.814	-43.714	-40.064	-8.210	-19.688	-14.070	-14.156	-32.027	-35.857	-42.123	-14.973	-13.939	-13.719	-21.729	-30.740	-30.844	-11.566

state	soln	si_CdSO4	si_CdSO4:1H2O	si_CdSO4:2.67H2O	si_Cerussite	si_CH4(g)	si_Chalcanthite	si_Claudetite	si_Co(BO2)2	si_Co(OH)2	si_Co(OH)3	si_CO2(g)	si_Co3(AsO4)2	si_Co3O4	si_CoCl2	si_CoCl2:6H2O	si_CoCO3	si_CoF2	si_CoF3	si_CoFe2O4	si_CoO	si_CoSO4	si_CoSO4:6H2O	si_Cotunnite
i_soln	51	-12.780	-11.227	-11.080	-3.367	-62.000	-8.249	-49.481	-30.800	-7.960	-14.757	-3.298	-20.901	-18.503	-21.819	-16.089	-6.331	-18.263	-53.098	20.121	-8.453	-13.852	-8.577	-8.958
i_soln	52	-12.892	-11.338	-11.191	-4.699	-56.626	-8.536	-42.646	-32.213	-9.317	-16.764	-3.124	-24.156	-23.874	-21.648	-15.917	-7.514	-20.804	-56.882	14.630	-9.810	-14.015	-8.740	-8.936
i_soln	53	-12.835	-11.281	-11.134	-5.453	-54.597	-8.657	-39.599	-32.885	-10.045	-17.742	-3.096	-25.815	-26.557	-22.413	-16.682	-8.214	-20.737	-56.667	11.499	-10.537	-14.213	-8.938	-9.755
i_soln	54	-12.973	-11.419	-11.272	-1.966	-80.468	-10.517	-83.044	-27.743	-4.256	-8.853	-4.167	-17.770	-2.990	-21.303	-15.573	-3.495	-15.447	-48.527	25.851	-4.748	-14.604	-9.329	-9.876
i_soln	55	-13.234	-11.681	-11.534	-2.073	-90.356	-12.098	-100.465	-26.554	-2.494	-5.991	-5.254	-16.795	4.496	-22.551	-16.821	-2.821	-15.855	-48.920	28.301	-2.986	-15.113	-9.838	-11.906
i_soln	56	-13.672	-12.119	-11.972	-2.012	-94.843	-12.825	-105.377	-27.123	-2.201	-5.198	-5.742	-16.372	6.375	-23.706	-17.975	-3.016	-16.718	-49.860	27.921	-2.693	-15.908	-10.633	-12.805
i_soln	57	-14.033	-12.479	-12.332	-5.769	-54.773	-9.856	-39.583	-33.808	-10.322	-18.019	-3.271	-26.637	-27.388	-22.703	-16.973	-8.666	-21.073	-57.033	11.526	-10.814	-15.711	-10.436	-9.909
i_soln	58	-13.554	-12.000	-11.853	-6.462	-50.748	-9.850	-33.660	-34.521	-11.340	-19.537	-3.246	-28.730	-31.441	-22.380	-16.649	-9.659	-22.267	-58.815	7.827	-11.832	-15.226	-9.951	-9.286
i_soln	59	-13.599	-12.046	-11.899	-6.683	-49.143	-9.594	-31.498	-34.698	-11.742	-20.139	-3.241	-29.656	-33.049	-22.314	-16.583	-10.056	-22.584	-59.289	5.535	-12.235	-15.270	-9.995	-9.044
i_soln	60	-12.355	-10.801	-10.655	-3.381	-70.863	-8.814	-64.318	-29.863	-5.894	-11.691	-4.162	-18.122	-10.305	-23.898	-18.168	-5.129	-16.224	-50.074	21.893	-6.387	-13.350	-8.075	-12.254
i_soln	61	-12.613	-11.059	-10.912	-4.095	-64.727	-8.952	-54.520	-30.735	-6.773	-13.270	-3.625	-18.659	-14.341	-23.357	-17.627	-5.471	-15.759	-49.636	18.860	-7.265	-13.129	-7.854	-12.085
i_soln	62	-12.566	-11.012	-10.865	-6.319	-53.966	-8.867	-38.400	-33.292	-9.657	-17.454	-3.264	-24.451	-25.593	-22.688	-16.957	-7.994	-18.231	-53.203	9.302	-10.149	-13.351	-8.076	-11.116
i_soln	63	-12.074	-10.520	-10.373	-7.859	-48.342	-8.368	-30.633	-34.072	-10.540	-19.037	-3.240	-26.017	-29.643	-22.053	-16.322	-8.853	-16.939	-51.523	3.218	-11.032	-12.221	-6.946	-11.162
i_soln	64	-13.972	-12.418	-12.272	-3.195	-66.152	-10.342	-57.141	-30.837	-7.514	-13.811	-3.450	-21.393	-16.164	-23.255	-17.524	-6.037	-16.553	-50.257	22.359	-8.006	-15.659	-10.384	-10.515
i_soln	65	-13.658	-12.104	-11.957	-2.281	-72.233	-9.960	-67.119	-29.073	-5.812	-11.409	-3.931	-18.476	-9.659	-23.578	-17.848	-4.816	-15.903	-49.433	26.150	-6.305	-15.050	-9.775	-11.146
i_soln	66	-12.895	-11.341	-11.194	-1.327	-81.911	-9.771	-82.467	-26.104	-3.506	-8.003	-4.809	-14.832	-0.540	-23.419	-17.689	-3.388	-14.328	-47.124	30.394	-3.998	-14.127	-8.852	-11.462
i_soln	67	-13.326	-11.772	-11.625	-2.021	-88.572	-12.002	-95.926	-26.738	-2.691	-6.388	-5.070	-15.915	3.506	-23.662	-17.932	-2.834	-15.989	-49.223	28.525	-3.183	-15.152	-9.877	-12.953
i_soln	68	-13.194	-11.641	-11.494	-2.116	-91.274	-10.233	-100.782	-26.752	-2.099	-5.496	-5.372	-15.370	5.880	-23.399	-17.669	-2.544	-16.003	-49.239	28.561	-2.592	-14.867	-9.592	-13.074
i_soln	69	-13.668	-12.114	-11.967	-7.339	-49.544	-9.967	-31.992	-34.602	-11.621	-19.968	-3.242	-29.341	-32.587	-22.823	-17.092	-9.937	-21.751	-58.050	5.444	-12.114	-15.348	-10.073	-10.328
i_soln	70	-13.132	-11.578	-11.431	-8.140	-47.841	-9.432	-29.804	-35.522	-12.123	-20.720	-3.539	-30.750	-34.590	-23.173	-17.443	-10.735	-21.355	-57.455	2.604	-12.615	-14.817	-9.542	-10.681
i_soln	71	-13.212	-11.658	-11.512	-7.933	-48.642	-9.513	-30.552	-35.449	-11.916	-20.413	-3.541	-30.103	-33.769	-23.319	-17.588	-10.529	-20.487	-56.157	2.337	-12.408	-14.898	-9.623	-10.826
i_soln	72	-13.757	-12.203	-12.056	-1.960	-82.299	-11.634	-85.925	-27.307	-3.798	-8.195	-4.397	-17.038	-1.217	-23.317	-17.586	-3.268	-15.695	-48.928	27.187	-4.291	-15.465	-10.190	-12.111
i_soln	73	-13.171	-11.617	-11.470	-2.070	-87.804	-11.716	-95.530	-26.749	-2.802	-6.599	-5.102	-16.452	2.972	-23.724	-17.994	-2.977	-16.152	-49.511	27.653	-3.294	-14.976	-9.701	-12.920
i_soln	74	-13.390	-11.836	-11.689	-2.133	-89.627	-12.191	-98.730	-26.761	-2.555	-6.152	-5.325	-16.510	4.114	-23.737	-18.006	-2.953	-16.054	-49.288	27.505	-3.047	-15.283	-10.008	-13.019
i_soln	75	-12.729	-11.176	-11.029	-1.951	-86.688	-11.156	-94.047	-26.456	-3.000	-6.897	-4.786	-16.704	2.178	-23.168	-17.438	-2.859	-15.214	-48.105	28.445	-3.492	-14.480	-9.205	-12.363
i_soln	76	-12.509	-10.955	-10.809	-1.976	-86.742	-10.304	-94.100	-25.686	-3.008	-6.905	-4.841	-16.753	2.155	-23.168	-17.437	-2.921	-14.977	-47.746	27.017	-3.500	-14.261	-8.987	-12.326
i_soln	77	-12.983	-11.430	-11.283	-1.808	-91.257	-11.391	-102.042	-25.957	-2.408	-5.805	-5.355	-16.926	4.953	-23.689	-17.958	-2.836	-15.614	-48.501	28.686	-2.901	-14.948	-9.673	-12.763
i_soln	78	-12.853	-11.300	-11.153	-1.804	-90.418	-11.743	-98.534	-26.378	-2.485	-5.982	-5.316	-15.803	4.522	-23.276	-17.545	-2.874	-15.710	-48.706	28.782	-2.978	-14.766	-9.491	-12.308
i_soln	79	-13.562	-12.008	-11.861	-7.441	-50.647	-9.861	-33.075	-34.633	-11.420	-19.667	-3.545	-28.877	-31.781	-22.894	-17.163	-10.038	-21.418	-57.552	6.171	-11.912	-15.243	-9.968	-10.399
i_soln	80	-13.247	-11.693	-11.546	-7.046	-51.049	-9.546	-33.642	-34.536	-11.323	-19.520	-3.547	-28.669	-31.390	-22.950	-17.219	-9.942	-21.077	-57.039	5.936	-11.815	-14.929	-9.654	-10.157
i_soln	81	-13.974	-12.420	-12.273	-6.053	-54.773	-10.276	-39.567	-33.793	-10.307	-18.004	-3.271	-26.585	-27.343	-23.242	-17.511	-8.651	-20.320	-55.910	9.676	-10.799	-15.659	-10.384	-10.746
i_soln	82	-13.987	-12.433	-12.286	-5.380	-56.394	-10.290	-41.994	-32.946	-9.912	-17.409	-3.292	-25.814	-25.759	-22.986	-17.255	-8.277	-20.277	-55.843	11.992	-10.405	-15.669	-10.394	-10.192
i_soln	83	-13.723	-12.169	-12.022	-6.645	-52.355	-10.023	-35.979	-34.067	-10.917	-18.914	-3.253	-27.821	-29.774	-22.898	-17.167	-9.243	-21.217	-57.252	7.848	-11.410	-15.405	-10.130	-10.403
i_soln	84	-13.686	-12.132	-11.985	-6.360	-55.074	-9.988	-39.572	-33.754	-10.312	-18.009	-3.572	-26.603	-27.359	-23.089	-17.358	-8.957	-20.400	-56.027	10.498	-10.805	-15.370	-10.095	-10.594
i_soln	85	-13.609	-12.055	-11.909	-5.702	-53.869	-9.907	-36.797	-33.395	-10.533	-18.330	-3.167	-26.278	-28.222	-22.469	-16.739	-8.773	-21.646	-57.887	10.822	-11.026	-15.283	-10.008	-9.501
i_soln	86	-13.721	-12.168	-12.021	-3.475	-61.997	-9.436	-50.653	-31.235	-8.053	-14.850	-3.296	-21.767	-18.782	-22.094	-16.363	-6.422	-18.320	-53.138	19.778	-8.546	-14.921	-9.646	-9.250
i_soln	87	-13.705	-12.151	-12.004	-5.028	-57.208	-9.707	-43.217	-32.781	-9.720	-17.117	-3.306	-25.448	-24.982	-22.783	-17.053	-8.099	-20.394	-56.015	13.352	-10.212	-15.385	-10.110	-9.816
i_soln	88	-13.528	-11.974	-11.827	-5.030	-57.208	-9.530	-43.217	-32.782	-9.720	-17.117	-3.306	-25.450	-24.984	-22.835	-17.105	-8.100	-20.329	-55.917	13.387	-10.213	-15.208	-9.933	-9.868
i_soln	89	-13.223	-11.669	-11.522	-5.030	-58.025	-9.226	-44.439	-32.558	-9.524	-16.821	-3.323	-25.073	-24.195	-22.863	-17.132	-7.921	-19.667	-54.923	13.815	-10.017	-14.904	-9.629	-10.075
i_soln	90	-12.325	-10.772	-10.625	-7.463	-51.049	-8.321	-33.693	-34.105	-10.706	-18.903	-3.547	-26.845	-29.540	-22.396	-16.665	-9.326	-19.148	-54.453	5.374	-11.198	-13.311	-8.036	-10.636
i_soln	91	-12.494	-10.940	-10.793	-3.531	-65.417	-8.536	-55.891	-31.181	-7.780	-14.177	-3.515	-21.966	-17.162	-22.860	-17.129	-6.368	-17.101	-51.046	20.689	-8.272	-14.176	-8.901	-10.126
i_soln	92	-13.497	-11.943	-11.796	-4.002	-61.996	-9.817	-50.629	-31.400	-8.515	-15.312	-3.294	-23.139	-20.167	-23.101	-17.370	-6.882	-17.565	-51.775	17.539	-9.007	-15.181	-9.906	-10.324
i_soln	93	-13.517	-11.963	-11.816	-6.642	-52.355	-9.818	-35.974	-34.033	-10.914	-18.911	-3.253	-27.809	-29.763	-23.100	-17.370	-9.239	-20.641	-56.389	7.319	-11.406	-15.201	-9.926	-10.606
i_soln	94	-13.398	-11.844	-11.697	-6.842	-51.551	-9.698	-34.795	-34.177	-11.116	-19.213	-3.249	-28.227	-30.571	-23.057	-17.326	-9.438	-20.688	-56.458	6.107	-11.609	-15.081	-9.806	-10.563
i_soln	95	-12.653	-11.099	-10.952	-7.979	-48.643	-8.953	-30.568	-35.339	-11.648	-20.145	-3.541	-29.307	-32.965	-23.219	-17.488	-10.261	-17.725	-52.148	1.640	-12.140	-14.040	-8.765	-11.040
i_soln	96	-13.100	-11.546	-11.399	-7.367	-50.070	-9.400	-32.521	-34.841	-11.520	-19.817	-3.368	-29.102	-32.183	-23.286	-17.555	-9.961	-20.686	-56.452	4.391	-12.013	-14.785	-9.510	-10.795
i_soln	97	-12.810	-11.256	-11.109	-7.761	-49.444	-9.110	-31.485	-35.220	-11.734	-20.131	-3.542	-29.625	-33.024	-23.471	-17.740	-10.349	-20.063	-55.512	2.787	-12.226	-14.497	-9.222	-10.985
i_soln	98	-12.733	-11.179	-11.032	-7.571	-50.246	-9.034	-32.532	-35.097	-11.539	-19.836	-3.544	-29.165	-32.241	-23.498	-17.767	-10.157	-20.150	-55.640	3.691	-12.032	-14.421	-9.146	-11.015
i_soln	99	-12.060	-10.506	-10.360	-2.914	-68.294	-8.491	-61.598	-30.378	-7.090	-13.087	-3.192	-21.150	-14.293	-24.481	-18.751	-5.356	-16.460	-50.030	22.360	-7.583	-13.757	-8.482	-12.142
i_soln	100	-12.273	-10.719	-10.573	-8.280	-47.841	-8.566	-29.840	-35.320	-11.921	-20.518	-3.540	-30.163	-33.985	-22.300	-16.570	-10.533	-19.746	-55.142	2.276	-12.413	-13.649	-8.374	-10.149

state	soln	si_Cr(OH)2	si_Cr(OH)3	si_Cr(OH)3(am)	si_Cr2O3	si_CrCl2	si_CrCl3	si_CrF3	si_Crmetal	si_CrO3	si_Cryolite	si_Cu(OH)2	si_Cu2SO4	si_Cu3(AsO4)2:2H2O	si_CuCO3	si_CuCrO4	si_CuF	si_CuF2	si_CuF2:2H2O	si_Cumetal	si_CuOCuSO4	si_Cupricferrite	si_Cuprite	si_Cuprousferrite	si_CuSO4
i_soln	51	-18.865	-2.129	-0.044	0.771	-40.824	-43.937	-26.947	-58.930	-34.359	-20.202	-3.380	-18.664	-13.485	-4.650	-26.835	-9.807	-20.814	-15.149	-3.660	-15.897	10.766	-3.025	12.431	-13.828
i_soln	52	-19.448	-3.362	-1.276	-1.695	-39.878	-42.877	-29.957	-58.212	-37.542	-26.309	-4.861	-19.134	-17.114	-5.958	-31.500	-11.231	-23.480	-17.816	-3.841	-17.667	5.150	-4.689	9.533	-14.116
i_soln	53	-19.900	-4.064	-1.978	-3.099	-40.367	-43.634	-29.466	-58.164	-38.994	-25.614	-5.512	-19.405	-18.541	-6.580	-33.602	-11.234	-23.335	-17.671	-3.992	-18.438	2.096	-5.490	7.930	-14.236
i_soln	54	-19.943	-1.006	1.079	3.016	-45.089	-47.596	-27.157	-64.407	-26.636	-17.009	-1.191	-23.143	-14.902	-3.331	-16.924	-10.263	-19.514	-13.850	-5.871	-15.977	14.979	-3.048	13.432	-16.096
i_soln	55	-21.591	-1.554	0.531	1.920	-49.747	-52.659	-30.960	-68.255	-23.884	-21.336	-0.501	-26.235	-17.143	-3.728	-13.482	-11.758	-20.994	-15.329	-7.381	-16.868	16.358	-3.868	13.367	-17.677
i_soln	56	-24.307	-3.771	-1.685	-2.512	-53.911	-57.047	-34.910	-71.971	-24.601	-23.846	-0.141	-27.602	-16.517	-3.855	-13.838	-12.475	-21.789	-16.124	-8.021	-17.235	16.045	-4.147	12.891	-18.405
i_soln	57	-20.052	-4.216	-2.130	-3.402	-40.533	-43.807	-29.707	-58.316	-39.146	-27.835	-5.489	-20.580	-18.464	-6.733	-33.731	-11.240	-23.372	-17.707	-3.969	-19.613	2.423	-5.443	8.105	-15.435
i_soln	58	-20.237	-4.900	-2.815	-4.772	-39.377	-42.480	-30.655	-57.501	-41.330	-30.261	-6.986	-21.072	-21.995	-8.205	-37.413	-12.326	-25.045	-19.380	-4.466	-21.105	-1.756	-7.438	5.767	-15.429
i_soln	59	-20.450	-5.314	-3.228	-5.599	-39.122	-42.191	-30.941	-57.314	-42.344	-30.676	-7.089	-20.518	-22.022	-8.303	-38.529	-12.185	-25.063	-19.398	-4.169	-20.951	-3.747	-7.243	4.920	-15.173
i_soln	60	-19.663	-1.926	0.159	1.176	-45.767	-49.952	-26.786	-61.727	-31.156	-20.886	-2.381	-20.232	-13.909	-4.516	-22.634	-9.822	-19.843	-14.178	-4.661	-15.465	11.470	-3.028	12.282	-14.394
i_soln	61	-19.724	-2.688	-0.602	-0.346	-44.408	-48.584	-25.530	-60.388	-34.018	-18.609	-3.618	-20.206	-15.521	-5.216	-26.732	-9.687	-19.736	-14.071	-4.498	-16.839	8.079	-4.102	10.669	-14.531
i_soln	62	-20.482	-4.746	-2.660	-4.462	-41.613	-45.311	-26.971	-58.546	-39.976	-22.144	-6.195	-20.098	-20.392	-7.432	-35.267	-10.758	-21.901	-16.236	-4.475	-19.331	-1.173	-6.656	6.054	-14.446
i_soln	63	-21.396	-6.360	-4.274	-7.691	-41.008	-44.648	-25.323	-58.060	-43.690	-19.966	-7.710	-19.713	-23.852	-8.923	-40.496	-10.485	-21.241	-15.576	-4.590	-20.347	-7.888	-8.285	2.640	-13.947
i_soln	64	-19.200	-1.964	0.122	1.101	-43.040	-46.594	-24.887	-60.264	-32.694	-17.003	-3.219	-21.597	-14.834	-4.642	-25.009	-9.515	-19.390	-13.725	-4.499	-17.830	12.718	-3.704	12.988	-15.921
i_soln	65	-19.050	-1.113	0.972	2.802	-44.915	-48.782	-25.614	-61.514	-29.743	-18.615	-1.745	-21.141	-12.601	-3.649	-20.585	-9.266	-18.968	-13.303	-4.425	-15.974	16.281	-2.156	14.806	-15.540
i_soln	66	-19.399	-0.362	1.723	4.304	-47.412	-51.251	-25.960	-64.063	-25.692	-15.960	-0.172	-21.578	-11.155	-2.953	-14.960	-9.159	-18.126	-12.461	-5.052	-14.211	19.792	-1.209	16.249	-15.350
i_soln	67	-20.992	-1.156	0.929	2.717	-50.064	-53.633	-30.468	-67.257	-24.086	-22.860	-0.563	-25.801	-15.860	-3.607	-13.746	-11.589	-20.994	-15.329	-7.043	-16.835	16.716	-3.593	13.714	-17.582
i_soln	68	-21.419	-1.282	0.803	2.464	-50.818	-54.252	-31.502	-68.283	-23.312	-23.490	1.512	-22.558	-10.863	-1.834	-10.897	-10.116	-19.524	-13.859	-5.568	-12.991	18.235	-0.043	15.212	-15.813
i_soln	69	-20.675	-5.488	-3.403	-5.948	-39.975	-43.309	-30.047	-57.639	-42.368	-29.231	-7.262	-21.165	-22.589	-8.477	-38.727	-12.053	-24.524	-18.859	-4.442	-21.498	-4.133	-7.690	4.590	-15.546
i_soln	70	-21.259	-6.323	-4.237	-7.617	-40.410	-43.918	-29.535	-57.723	-43.953	-27.999	-7.760	-20.628	-23.988	-9.272	-40.809	-11.852	-24.124	-18.459	-4.440	-21.461	-6.970	-8.186	3.173	-15.011
i_soln	71	-21.136	-6.100	-4.014	-7.171	-40.639	-44.224	-28.321	-57.800	-43.430	-25.857	-7.553	-20.702	-23.340	-9.066	-40.079	-11.414	-23.256	-17.591	-4.433	-21.335	-7.236	-7.971	3.044	-15.092
i_soln	72	-20.078	-0.941	1.144	3.146	-47.695	-51.238	-28.151	-64.942	-25.971	-22.283	-0.990	-24.460	-14.938	-3.360	-16.058	-10.614	-20.019	-14.354	-6.070	-16.893	16.059	-3.046	13.873	-17.213
i_soln	73	-20.804	-1.068	1.018	2.893	-49.826	-53.471	-30.457	-66.869	-24.298	-25.213	-0.564	-25.316	-16.064	-3.639	-13.959	-11.515	-21.046	-15.381	-6.844	-16.549	15.954	-3.394	13.433	-17.295
i_soln	74	-21.237	-1.300	0.785	2.429	-50.518	-54.092	-30.913	-67.701	-23.930	-25.345	-0.486	-26.113	-16.628	-3.784	-13.512	-11.711	-21.117	-15.452	-7.165	-16.946	15.638	-3.637	13.114	-17.771
i_soln	75	-20.350	-0.714	1.371	3.601	-48.618	-51.986	-28.399	-66.215	-24.244	-19.024	-0.698	-24.689	-16.124	-3.457	-14.038	-10.981	-20.044	-14.379	-6.778	-16.123	16.811	-3.462	13.895	-16.735
i_soln	76	-20.353	-0.716	1.369	3.596	-48.613	-51.976	-28.035	-66.217	-24.246	-18.357	-0.072	-23.212	-14.274	-2.886	-13.415	-10.233	-19.174	-13.509	-6.152	-14.646	16.016	-2.211	13.810	-15.883
i_soln	77	-21.730	-1.594	0.492	1.842	-51.110	-54.533	-30.766	-68.594	-23.624	-20.690	0.127	-25.100	-15.648	-3.201	-12.593	-11.152	-20.211	-14.546	-6.953	-15.533	17.285	-2.813	14.044	-16.970
i_soln	78	-21.587	-1.551	0.535	1.927	-50.477	-53.756	-30.752	-68.252	-23.881	-20.993	-0.484	-25.863	-16.127	-3.774	-13.462	-11.672	-20.841	-15.176	-7.364	-16.496	16.846	-3.835	13.619	-17.322
i_soln	79	-20.869	-5.583	-3.497	-6.137	-40.443	-43.814	-29.945	-58.034	-42.163	-28.166	-7.060	-21.057	-22.124	-8.578	-38.319	-11.885	-24.191	-18.526	-4.440	-21.190	-3.406	-7.486	4.956	-15.441
i_soln	80	-20.823	-5.486	-3.401	-5.944	-40.550	-43.947	-29.483	-58.087	-41.916	-26.647	-6.962	-20.744	-21.914	-8.482	-37.975	-11.716	-23.849	-18.184	-4.442	-20.778	-3.640	-7.391	4.837	-15.126
i_soln	81	-20.340	-4.504	-2.418	-3.979	-41.374	-44.925	-28.887	-58.604	-39.434	-26.888	-5.947	-21.459	-19.830	-7.191	-34.477	-11.329	-23.091	-17.426	-4.427	-20.492	0.100	-6.359	6.715	-15.856
i_soln	82	-20.185	-4.149	-2.063	-3.269	-41.358	-44.778	-29.059	-58.849	-38.479	-25.874	-5.555	-21.481	-19.069	-6.820	-33.131	-11.313	-23.051	-17.386	-4.435	-20.114	2.413	-5.976	7.867	-15.869
i_soln	83	-20.619	-5.082	-2.997	-5.136	-40.699	-44.072	-29.897	-58.283	-40.912	-27.669	-6.558	-21.217	-21.070	-7.784	-36.567	-11.784	-23.990	-18.325	-4.438	-20.850	-1.729	-6.982	5.795	-15.603
i_soln	84	-20.345	-4.509	-2.423	-3.989	-41.221	-44.692	-29.004	-58.609	-39.439	-26.176	-5.953	-21.177	-19.851	-7.498	-34.488	-11.372	-23.172	-17.507	-4.433	-20.210	0.921	-6.372	7.122	-15.568
i_soln	85	-20.149	-4.413	-2.327	-3.797	-40.185	-43.336	-30.446	-58.213	-39.643	-28.519	-6.180	-21.123	-19.544	-7.320	-34.919	-12.012	-24.425	-18.760	-4.460	-20.356	1.239	-6.625	7.268	-15.487
i_soln	86	-19.026	-2.289	-0.204	0.450	-41.165	-44.369	-27.054	-59.090	-34.519	-21.781	-3.591	-20.063	-14.706	-4.860	-27.207	-10.000	-20.990	-15.325	-3.871	-17.296	10.304	-3.448	12.095	-15.015
i_soln	87	-19.817	-3.681	-1.595	-2.333	-40.980	-44.295	-29.056	-58.681	-37.711	-25.626	-5.064	-20.607	-17.808	-6.343	-31.872	-11.077	-22.870	-17.205	-4.144	-19.040	4.071	-5.195	8.841	-15.286
i_soln	88	-19.818	-3.681	-1.596	-2.334	-41.032	-44.373	-28.958	-58.682	-37.711	-25.465	-5.064	-20.430	-17.808	-6.344	-31.872	-11.044	-22.804	-17.139	-4.144	-18.863	4.106	-5.195	8.859	-15.109
i_soln	89	-20.054	-3.818	-1.732	-2.607	-41.492	-44.844	-28.396	-59.118	-37.548	-22.940	-4.869	-20.131	-17.434	-6.165	-31.513	-10.717	-22.144	-16.479	-4.149	-18.364	4.534	-5.004	9.071	-14.806
i_soln	90	-20.930	-5.594	-3.508	-6.159	-40.719	-44.147	-27.621	-58.194	-42.024	-22.068	-6.738	-19.295	-21.268	-8.258	-37.859	-10.835	-22.312	-16.647	-4.218	-19.328	-4.595	-6.943	4.472	-13.900
i_soln	91	-19.715	-2.578	-0.493	-0.128	-42.894	-46.217	-25.924	-60.579	-33.608	-16.451	-3.162	-19.533	-14.437	-4.650	-25.867	-9.498	-19.615	-13.950	-4.242	-15.967	11.371	-3.390	12.443	-14.115
i_soln	92	-19.796	-3.059	-0.974	-1.090	-42.481	-45.957	-25.999	-59.860	-35.289	-18.373	-4.173	-21.026	-16.440	-5.440	-28.559	-9.974	-20.356	-14.691	-4.453	-18.260	7.945	-4.612	10.624	-15.397
i_soln	93	-20.616	-5.080	-2.994	-5.131	-40.902	-44.379	-29.035	-58.280	-40.910	-26.241	-6.553	-21.007	-21.053	-7.779	-36.559	-11.492	-23.412	-17.747	-4.433	-20.640	-2.257	-6.972	5.533	-15.397
i_soln	94	-20.716	-5.279	-3.194	-5.530	-40.756	-44.210	-29.001	-58.180	-41.409	-25.979	-6.756	-20.889	-21.471	-7.977	-37.261	-11.517	-23.459	-17.794	-4.436	-20.723	-3.469	-7.177	4.926	-15.277
i_soln	95	-21.197	-6.160	-4.075	-7.292	-40.868	-44.537	-24.641	-57.861	-43.490	-19.394	-7.583	-20.172	-23.440	-9.097	-40.170	-10.198	-20.793	-15.128	-4.463	-20.805	-8.232	-8.032	2.531	-14.533
i_soln	96	-20.925	-5.689	-3.604	-6.349	-40.791	-44.357	-28.801	-57.990	-42.419	-25.966	-7.158	-20.594	-22.340	-8.499	-38.673	-11.516	-23.455	-17.790	-4.438	-20.827	-5.183	-7.581	4.068	-14.980
i_soln	97	-21.053	-5.917	-3.831	-6.805	-40.890	-44.541	-27.775	-57.917	-42.947	-24.125	-7.370	-20.316	-22.857	-8.885	-39.413	-11.210	-22.831	-17.166	-4.450	-20.749	-6.785	-7.805	3.261	-14.690
i_soln	98	-20.953	-5.716	-3.631	-6.404	-41.011	-44.673	-27.997	-58.017	-42.446	-23.988	-7.175	-20.244	-22.397	-8.692	-38.717	-11.256	-22.918	-17.253	-4.455	-20.477	-5.881	-7.616	3.710	-14.613
i_soln	99	-19.694	-2.157	-0.072	0.715	-45.184	-49.263	-25.576	-61.358	-31.987	-16.331	-2.846	-19.973	-14.744	-4.012	-23.930	-9.607	-19.348	-13.683	-4.726	-15.606	12.668	-3.558	12.849	-14.070
i_soln	100	-21.423	-6.486	-4.401	-7.944	-39.901	-43.074	-27.587	-57.887	-44.116	-21.543	-7.860	-19.863	-24.308	-9.373	-41.073	-11.249	-22.817	-17.152	-4.540	-20.696	-7.600	-8.387	2.808	-14.146

state	soln	si_Diaspore	si_Dolomite(disordered)	si_Dolomite(ordered)	si_Epsomite	si_Fe(OH)2	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_Fe2(SO4)3	si_Fe3(OH)8	si_FeAsO4:2H2O	si_FeCr2O4	si_Ferrihydrite	si_Fluorite	si_Gibbsite	si_Goethite	si_Goslarite	si_Gypsum	si_H-Jarosite	si_Halite	si_Hausmannite	si_Hematite	si_Hercynite	si_Huntite
i_soln	51	5.488	-10.422	-9.872	-6.133	-5.002	5.967	0.803	-33.355	-0.201	-6.305	-0.226	2.539	-6.489	4.070	5.239	-7.211	-3.569	-3.077	-8.086	-23.498	12.877	10.391	-24.038
i_soln	52	4.946	-12.973	-12.423	-6.239	-6.419	4.129	-3.385	-33.907	-5.752	-7.963	-4.108	0.472	-9.274	3.528	3.172	-7.358	-3.974	-6.889	-7.992	-28.406	8.744	7.889	-28.839
i_soln	53	4.057	-13.890	-13.340	-6.195	-7.371	2.922	-5.332	-34.722	-9.108	-8.903	-6.464	-0.730	-8.965	2.639	1.970	-7.464	-3.931	-9.436	-8.278	-32.284	6.339	5.160	-30.673
i_soln	54	2.508	-1.909	-1.359	-5.538	-6.190	6.501	-5.100	-44.699	0.637	-9.283	0.833	3.551	-2.180	1.090	6.251	-8.393	-2.827	-8.952	-6.734	-9.505	14.903	3.243	-7.159
i_soln	55	1.958	-0.894	-0.344	-6.289	-6.946	6.394	-9.562	-50.825	0.570	-11.094	-1.019	3.896	-2.680	0.540	6.596	-9.526	-3.428	-12.462	-7.328	0.242	15.591	1.387	-5.277
i_soln	56	1.479	-0.538	0.012	-6.404	-7.782	5.840	-12.329	-54.761	-0.940	-11.659	-6.288	3.559	-3.476	0.061	6.259	-10.575	-4.157	-15.647	-7.574	5.527	14.918	-0.406	-3.951
i_soln	57	4.101	-14.195	-13.645	-7.395	-7.219	3.072	-5.180	-38.083	-8.652	-8.747	-6.616	-0.578	-9.000	2.683	2.122	-9.027	-5.129	-11.423	-8.981	-29.935	6.644	5.400	-31.284
i_soln	58	3.185	-16.177	-15.627	-6.908	-8.060	1.932	-8.020	-36.255	-12.174	-9.607	-8.826	-1.919	-10.193	1.767	0.781	-8.219	-4.642	-12.439	-8.638	-34.949	3.962	2.728	-35.248
i_soln	59	2.742	-16.972	-16.422	-6.951	-8.804	1.058	-9.565	-37.067	-14.807	-10.411	-10.397	-2.863	-10.509	1.324	-0.163	-8.049	-4.685	-14.555	-8.479	-38.777	2.073	1.096	-36.838
i_soln	60	3.214	-6.698	-6.148	-5.027	-6.150	5.198	-2.171	-38.342	-1.643	-8.161	-0.967	2.392	-3.736	1.796	5.092	-7.274	-2.352	-6.647	-9.601	-11.989	12.583	4.695	-16.699
i_soln	61	3.911	-9.311	-8.761	-5.987	-6.527	4.334	-1.261	-37.199	-4.174	-8.189	-2.867	1.315	-4.018	2.493	4.015	-7.685	-2.879	-7.680	-9.709	-15.882	10.429	5.713	-22.358
i_soln	62	2.674	-13.355	-12.805	-5.333	-8.564	1.530	-6.924	-35.885	-12.885	-10.096	-9.020	-2.023	-6.364	1.256	0.677	-7.684	-2.974	-12.366	-9.110	-26.889	3.755	1.201	-29.697
i_soln	63	-0.043	-14.881	-14.331	-4.319	-10.464	-0.843	-11.625	-35.046	-19.986	-12.155	-14.149	-4.623	-4.764	-1.461	-1.923	-6.729	-1.536	-16.140	-8.894	-31.068	-1.446	-6.133	-33.172
i_soln	64	5.063	-8.936	-8.386	-7.343	-4.607	6.580	0.380	-38.326	1.986	-6.324	0.500	3.434	-4.480	3.645	6.134	-9.033	-5.077	-4.898	-9.082	-18.407	14.669	9.936	-20.766
i_soln	65	4.503	-7.093	-6.543	-7.032	-4.262	7.321	-0.672	-39.513	4.421	-6.374	2.546	4.479	-4.129	3.085	7.179	-8.540	-4.766	-3.948	-9.394	-12.038	16.758	9.161	-17.081
i_soln	66	3.891	-4.221	-3.671	-6.253	-4.393	7.968	-3.517	-41.726	6.227	-7.042	3.917	5.448	-2.396	2.473	8.148	-7.518	-3.686	-3.809	-8.648	-4.476	18.696	7.806	-11.637
i_soln	67	2.192	-1.374	-0.824	-6.493	-6.535	6.467	-8.342	-49.930	1.400	-10.149	0.187	4.106	-3.102	0.774	6.806	-9.404	-3.755	-11.515	-8.434	0.407	16.011	2.265	-6.116
i_soln	68	1.782	-1.307	-0.757	-6.224	-7.113	6.140	-10.073	-51.405	0.267	-11.041	-0.643	3.828	-3.612	0.364	6.528	-9.363	-3.967	-12.961	-8.067	4.419	15.456	0.869	-5.499
i_soln	69	2.499	-16.736	-16.186	-7.032	-8.961	0.857	-9.521	-37.879	-15.176	-10.541	-10.902	-2.970	-9.678	1.081	-0.270	-8.600	-4.766	-15.273	-8.943	-36.431	1.861	0.455	-36.367
i_soln	70	1.548	-18.334	-17.784	-6.500	-9.880	-0.289	-11.440	-37.118	-18.433	-11.663	-13.490	-4.139	-9.283	0.130	-1.439	-8.503	-4.235	-16.714	-9.039	-36.025	-0.478	-2.367	-39.561
i_soln	71	1.405	-17.923	-17.373	-6.583	-10.217	-0.579	-11.377	-38.458	-19.244	-11.887	-13.382	-4.376	-8.416	-0.013	-1.676	-8.666	-4.317	-18.003	-9.114	-37.164	-0.952	-2.990	-38.740
i_soln	72	2.666	-2.363	-1.813	-7.081	-5.950	6.570	-5.360	-47.776	1.755	-9.164	1.202	3.991	-2.653	1.248	6.691	-9.340	-3.913	-10.271	-9.074	-4.793	15.781	3.799	-8.523
i_soln	73	1.924	-1.353	-0.803	-6.403	-6.816	6.094	-8.256	-49.830	0.359	-10.631	0.083	3.725	-2.871	0.506	6.425	-9.328	-3.186	-12.082	-9.053	-0.210	15.251	1.448	-6.551
i_soln	74	1.640	-1.002	-0.452	-6.559	-7.213	5.857	-9.392	-51.887	-0.434	-11.228	-0.779	3.528	-2.622	0.222	6.228	-9.862	-3.341	-13.783	-8.983	-0.434	14.855	0.484	-5.850
i_soln	75	2.640	-0.901	-0.351	-5.472	-6.221	6.702	-7.350	-46.758	1.944	-9.965	1.386	4.220	-2.154	1.222	6.920	-8.316	-2.911	-9.209	-7.987	-2.024	16.241	3.476	-4.992
i_soln	76	2.145	-1.055	-0.505	-5.267	-6.931	5.993	-8.082	-47.500	-0.186	-10.688	0.672	3.510	-1.933	0.727	6.210	-7.899	-2.708	-10.887	-7.840	-3.898	14.821	1.776	-5.297
i_soln	77	2.165	-0.834	-0.284	-6.015	-6.896	6.360	-9.881	-50.287	0.919	-11.139	-1.048	4.045	-2.457	0.747	6.745	-8.872	-3.282	-11.854	-7.949	2.217	15.890	1.852	-5.030
i_soln	78	2.061	-1.626	-1.076	-5.953	-6.710	6.520	-9.315	-49.337	1.277	-10.375	-0.777	4.131	-3.148	0.643	6.831	-8.896	-3.695	-11.077	-7.752	2.331	16.063	1.829	-6.139
i_soln	79	2.633	-16.939	-16.389	-6.927	-8.798	1.079	-8.958	-37.643	-14.488	-10.349	-10.929	-2.707	-9.346	1.215	-0.007	-8.531	-4.661	-14.678	-8.900	-37.885	2.386	0.884	-36.773
i_soln	80	2.605	-16.748	-16.198	-6.613	-9.014	0.890	-8.974	-37.322	-15.035	-10.556	-10.952	-2.873	-9.005	1.187	-0.173	-8.205	-4.347	-14.741	-8.705	-38.022	2.055	0.613	-36.390
i_soln	81	3.725	-14.167	-13.617	-7.344	-8.152	2.056	-6.112	-39.836	-11.449	-9.676	-8.124	-1.511	-8.248	2.307	1.190	-9.165	-5.078	-14.146	-9.555	-33.976	4.779	3.715	-31.228
i_soln	82	4.294	-13.419	-12.869	-7.354	-7.391	2.996	-4.555	-39.129	-8.767	-8.922	-6.654	-0.550	-8.204	2.876	2.150	-8.729	-5.088	-12.074	-9.125	-32.392	6.700	5.614	-29.732
i_soln	83	3.282	-15.349	-14.799	-7.089	-8.461	1.590	-7.620	-38.460	-12.976	-9.987	-9.591	-2.120	-9.145	1.864	0.581	-8.593	-4.823	-14.244	-8.903	-35.503	3.561	2.521	-33.593
i_soln	84	3.761	-14.779	-14.229	-7.054	-7.738	2.494	-5.699	-38.125	-10.208	-9.263	-7.720	-1.097	-8.327	2.343	1.603	-8.787	-4.788	-12.316	-9.176	-33.992	5.606	4.201	-32.453
i_soln	85	4.080	-14.407	-13.857	-6.966	-7.366	2.892	-5.726	-36.657	-9.291	-8.497	-7.156	-0.825	-9.572	2.662	1.875	-8.198	-4.700	-10.884	-8.617	-33.950	6.151	5.211	-31.709
i_soln	86	5.479	-10.659	-10.109	-7.081	-5.128	5.814	0.082	-36.534	-0.577	-6.723	-0.671	2.413	-6.724	4.061	5.113	-8.372	-4.814	-5.405	-8.736	-22.329	12.627	10.248	-24.212
i_soln	87	4.647	-13.061	-12.511	-7.068	-6.907	3.581	-3.676	-37.686	-7.116	-8.444	-5.234	0.034	-8.321	3.229	2.734	-8.507	-4.802	-10.139	-8.845	-28.376	7.867	6.804	-29.016
i_soln	88	4.612	-13.062	-12.512	-6.892	-6.890	3.591	-3.658	-37.119	-7.063	-8.426	-5.218	0.051	-8.256	3.194	2.751	-8.286	-4.626	-9.731	-8.871	-28.616	7.903	6.751	-29.019
i_soln	89	4.539	-12.704	-12.154	-6.587	-6.873	3.674	-3.250	-36.561	-6.814	-8.415	-5.474	0.168	-7.595	3.121	2.868	-8.125	-4.322	-9.165	-8.582	-29.021	8.136	6.621	-28.302
i_soln	90	1.853	-15.190	-14.640	-5.084	-9.603	0.291	-9.563	-35.497	-16.803	-11.159	-11.756	-3.462	-6.660	0.435	-0.762	-7.405	-2.314	-14.506	-8.272	-32.354	0.876	-1.479	-33.779
i_soln	91	4.696	-8.337	-7.787	-5.553	-5.209	5.978	-0.081	-34.482	-0.020	-6.914	-1.330	2.732	-4.073	3.278	5.433	-7.536	-2.639	-3.505	-8.164	-19.759	13.265	8.601	-20.217
i_soln	92	4.852	-10.627	-10.077	-6.865	-6.016	4.844	-0.804	-37.709	-3.242	-7.606	-3.100	1.525	-5.493	3.434	4.225	-8.263	-4.600	-7.669	-8.880	-26.798	10.850	8.105	-24.148
i_soln	93	2.988	-15.343	-14.793	-6.885	-8.727	1.293	-7.887	-38.392	-13.775	-10.253	-9.851	-2.386	-8.569	1.570	0.314	-8.533	-4.619	-14.642	-9.005	-35.493	3.028	1.666	-33.580
i_soln	94	2.709	-15.740	-15.190	-6.765	-9.132	0.825	-8.692	-38.434	-15.189	-10.663	-10.655	-2.891	-8.616	1.291	-0.191	-8.743	-4.500	-15.512	-8.858	-36.300	2.019	0.704	-34.375
i_soln	95	-0.262	-16.987	-16.437	-5.722	-10.699	-1.087	-11.860	-37.652	-20.692	-12.374	-13.985	-4.858	-5.256	-1.680	-2.158	-7.526	-3.061	-18.270	-8.981	-35.659	-1.917	-6.807	-37.264
i_soln	96	2.105	-16.787	-16.237	-6.469	-9.588	0.196	-9.948	-37.647	-16.957	-11.150	-11.931	-3.547	-8.614	0.687	-0.847	-8.408	-4.204	-16.080	-8.971	-37.183	0.707	-0.962	-36.468
i_soln	97	1.454	-17.085	-16.535	-6.180	-10.183	-0.495	-10.943	-37.531	-18.942	-11.786	-12.982	-4.242	-7.515	0.036	-1.542	-8.183	-3.439	-17.161	-8.961	-36.216	-0.683	-2.857	-37.539
i_soln	98	1.796	-16.700	-16.150	-6.103	-9.928	-0.174	-10.288	-37.176	-17.978	-11.493	-12.325	-3.887	-7.602	0.378	-1.187	-7.993	-3.363	-16.333	-8.859	-35.342	0.026	-1.918	-36.768
i_soln	99	4.274	-5.088	-4.538	-4.723	-5.118	6.121	-0.765	-34.312	1.052	-7.050	-0.397	3.223	-2.619	2.856	5.923	-7.311	-1.406	-2.574	-9.090	-19.998	14.246	7.847	-14.121
i_soln	100	0.747	-16.965	-16.415	-5.023	-10.145	-0.454	-11.705	-34.750	-19.228	-11.937	-14.082	-4.404	-7.019	-0.671	-1.704	-6.845	-2.413	-15.578	-7.691	-38.167	-1.007	-4.234	-37.169

state	soln	si_Hydrocerussite	si_Hydromagnesite	si_K-Alum	si_K-Jarosite	si_K2Cr2O7	si_K2CrO4	si_Langite	si_Larnakite	si_Laurionite	si_Lepidocrocite	si_Li2CrO4	si_Lime	si_Litharge	si_Maghemite	si_Magnesioferrite	si_Magnesite	si_Magnetite	si_Malachite	si_Manganite	si_Massicot	si_Matlockite	si_Melanothallite	si_Melanterite
i_soln	51	-9.274	-37.398	-12.947	1.511	-54.120	-33.280	-12.494	-5.852	-5.018	4.359	-42.194	-24.695	-7.746	5.073	2.523	-6.062	16.618	-5.550	-9.429	-7.946	-7.918	-19.649	-5.412
i_soln	52	-13.447	-43.198	-11.751	-2.951	-61.786	-37.763	-17.227	-7.671	-5.760	2.292	-47.029	-26.295	-9.253	0.940	-2.910	-7.187	11.068	-8.340	-11.282	-9.453	-9.253	-19.602	-5.635
i_soln	53	-15.736	-45.518	-12.128	-6.046	-65.785	-40.310	-19.299	-8.706	-6.561	1.090	-48.974	-26.782	-10.034	-1.465	-5.801	-7.645	7.711	-9.612	-12.658	-10.234	-9.656	-20.289	-6.058
i_soln	54	-4.204	-15.613	-22.953	-2.476	-34.900	-21.782	-8.196	-5.770	-4.342	5.371	-31.650	-19.497	-5.476	7.099	9.600	-1.879	17.456	-2.042	-4.032	-5.676	-7.687	-20.648	-11.057
i_soln	55	-3.438	-12.361	-26.937	-4.878	-27.179	-16.813	-7.708	-6.081	-4.867	5.716	-26.681	-17.827	-4.496	7.787	11.809	-1.446	17.389	-1.749	-0.416	-4.696	-9.297	-22.968	-14.083
i_soln	56	-2.767	-9.450	-29.090	-7.562	-27.609	-16.527	-7.354	-6.071	-5.042	5.379	-25.793	-17.468	-3.947	7.114	12.108	-0.961	15.880	-1.516	1.513	-4.147	-10.050	-24.055	-16.008
i_soln	57	-16.507	-46.109	-14.524	-8.029	-66.081	-40.454	-20.428	-10.207	-6.708	1.242	-50.323	-26.757	-10.174	-1.160	-5.474	-7.799	8.168	-9.742	-11.875	-10.374	-9.832	-20.280	-7.127
i_soln	58	-18.612	-51.089	-12.636	-9.248	-70.856	-43.045	-24.915	-10.141	-6.756	-0.099	-53.515	-27.774	-10.893	-3.842	-9.172	-8.790	4.646	-12.711	-13.713	-11.093	-9.968	-20.437	-6.465
i_soln	59	-19.282	-53.081	-12.387	-11.388	-72.932	-44.107	-24.966	-10.235	-6.748	-1.043	-54.328	-28.176	-11.119	-5.731	-11.463	-9.187	2.012	-12.911	-15.056	-11.319	-9.918	-20.071	-6.850
i_soln	60	-8.455	-27.498	-17.654	-1.363	-46.324	-28.686	-10.065	-5.718	-6.241	4.212	-37.952	-21.914	-6.897	4.779	4.899	-4.255	15.177	-4.417	-5.260	-7.097	-9.155	-22.795	-8.124
i_soln	61	-11.133	-35.650	-15.451	-3.088	-53.432	-32.933	-13.912	-7.120	-6.782	3.135	-42.801	-23.541	-8.147	2.625	0.686	-5.778	12.646	-6.354	-6.791	-8.347	-9.024	-22.613	-7.402
i_soln	62	-18.166	-44.249	-12.666	-9.077	-67.952	-41.495	-21.558	-9.627	-7.590	-0.203	-50.761	-26.298	-10.732	-4.049	-7.997	-7.425	3.934	-11.147	-10.893	-10.932	-9.626	-21.636	-6.776
i_soln	63	-22.810	-49.146	-12.076	-13.572	-76.821	-46.650	-25.603	-10.742	-8.395	-2.803	-55.914	-26.873	-12.296	-9.250	-14.197	-8.400	-3.167	-14.152	-12.519	-12.496	-9.344	-21.632	-6.663
i_soln	64	-8.607	-32.784	-17.672	-0.102	-50.374	-31.198	-14.105	-7.458	-5.635	5.254	-40.465	-23.949	-7.422	6.865	5.358	-5.169	18.805	-5.380	-7.566	-7.622	-7.903	-21.369	-7.271
i_soln	65	-5.384	-27.696	-19.715	1.550	-43.071	-26.846	-9.302	-5.760	-5.252	6.299	-36.715	-22.546	-6.027	8.954	8.851	-4.248	21.240	-2.914	-5.209	-6.227	-8.047	-21.921	-8.018
i_soln	66	-1.646	-20.389	-21.525	3.259	-31.828	-19.655	-4.392	-3.482	-4.495	7.268	-29.273	-20.082	-4.196	10.892	12.952	-2.962	23.046	-0.645	-2.322	-4.396	-7.655	-22.495	-9.533
i_soln	67	-3.466	-13.440	-26.579	-4.124	-27.968	-17.400	-7.799	-6.186	-5.456	5.926	-26.667	-18.312	-4.628	8.207	11.866	-1.625	18.219	-1.690	-0.428	-4.828	-9.855	-23.945	-13.515
i_soln	68	-3.449	-11.766	-27.304	-5.272	-25.826	-16.032	0.195	-6.079	-5.413	5.648	-24.344	-18.217	-4.421	7.652	11.887	-1.350	17.086	2.158	1.010	-4.621	-10.114	-22.198	-14.399
i_soln	69	-21.247	-52.491	-13.451	-12.528	-73.826	-44.976	-25.860	-11.743	-7.717	-1.150	-54.845	-28.057	-11.774	-5.943	-11.557	-9.069	1.644	-13.259	-14.257	-11.974	-10.531	-20.873	-7.206
i_soln	70	-23.354	-56.186	-12.585	-14.219	-77.494	-47.060	-26.818	-11.719	-8.146	-2.319	-56.929	-28.559	-12.278	-8.282	-14.397	-9.868	-1.614	-14.552	-14.205	-12.478	-10.511	-21.221	-7.092
i_soln	71	-22.732	-55.159	-13.205	-15.406	-76.246	-46.334	-26.277	-11.591	-8.114	-2.556	-56.203	-28.352	-12.070	-8.756	-14.664	-9.663	-2.425	-14.139	-14.551	-12.270	-10.149	-21.366	-7.718
i_soln	72	-3.955	-17.660	-25.214	-3.578	-33.135	-20.682	-8.710	-6.615	-5.341	5.811	-30.551	-19.264	-5.240	7.977	10.254	-2.334	18.574	-1.870	-2.394	-5.440	-9.039	-22.918	-12.135
i_soln	73	-3.579	-14.552	-26.373	-4.791	-28.592	-17.812	-7.514	-5.932	-5.448	5.545	-27.681	-18.030	-4.645	7.447	10.909	-1.853	17.178	-1.723	-0.667	-4.845	-9.872	-23.896	-13.508
i_soln	74	-3.546	-13.451	-27.565	-6.292	-27.455	-17.044	-7.754	-6.166	-5.418	5.348	-26.912	-17.631	-4.485	7.051	10.912	-1.678	16.385	-1.789	-0.675	-4.685	-9.917	-24.077	-14.460
i_soln	75	-3.539	-12.098	-24.377	-2.025	-28.698	-17.973	-7.356	-5.633	-5.268	6.040	-27.239	-18.448	-4.842	8.437	12.137	-1.299	18.764	-1.675	-1.305	-5.042	-9.125	-23.276	-12.220
i_soln	76	-3.561	-12.423	-24.423	-3.706	-28.709	-17.981	-4.628	-5.349	-5.236	5.330	-27.849	-18.471	-4.813	7.017	10.695	-1.375	16.633	-0.478	-1.929	-5.013	-8.970	-22.643	-12.703
i_soln	77	-2.541	-11.792	-26.469	-4.169	-26.455	-16.350	-5.118	-5.269	-5.113	5.865	-25.264	-17.760	-4.130	8.086	12.303	-1.352	17.738	-0.595	0.276	-4.330	-9.465	-23.564	-13.954
i_soln	78	-2.568	-12.624	-26.156	-3.492	-27.171	-16.808	-7.302	-5.079	-4.903	5.951	-25.722	-18.432	-4.165	8.259	12.278	-1.511	18.097	-1.778	0.280	-4.365	-9.264	-23.685	-13.509
i_soln	79	-21.249	-52.696	-13.410	-11.833	-73.214	-44.570	-25.147	-11.437	-7.652	-0.887	-54.439	-27.855	-11.572	-5.418	-10.830	-9.171	2.332	-13.158	-14.708	-11.772	-10.400	-20.944	-7.140
i_soln	80	-20.065	-52.215	-12.953	-11.846	-72.622	-44.224	-24.540	-10.429	-7.333	-1.053	-52.695	-27.759	-11.177	-5.749	-11.064	-9.075	1.784	-12.964	-14.737	-11.377	-9.959	-21.000	-7.139
i_soln	81	-17.360	-46.039	-14.822	-10.748	-66.650	-40.735	-22.223	-10.739	-7.268	0.310	-50.604	-26.743	-10.459	-3.025	-7.325	-7.785	5.371	-10.657	-13.222	-10.659	-10.024	-21.291	-8.022
i_soln	82	-15.321	-44.148	-14.864	-8.478	-64.343	-39.383	-21.062	-9.757	-6.644	1.270	-49.252	-26.348	-9.765	-1.104	-5.009	-7.411	8.052	-9.895	-12.627	-9.965	-9.576	-21.039	-7.667
i_soln	83	-19.156	-49.014	-13.837	-11.148	-70.213	-42.819	-23.804	-11.096	-7.402	-0.300	-52.687	-27.353	-11.070	-4.243	-9.153	-8.376	3.844	-11.862	-13.831	-11.270	-10.302	-20.948	-7.467
i_soln	84	-17.981	-47.269	-14.198	-8.920	-66.662	-40.742	-21.953	-10.457	-7.196	0.723	-50.611	-26.748	-10.465	-2.198	-6.503	-8.091	6.612	-10.971	-13.227	-10.665	-9.989	-21.139	-7.314
i_soln	85	-16.411	-46.744	-13.067	-7.291	-66.678	-40.554	-22.552	-9.643	-6.522	0.995	-50.672	-26.968	-10.212	-1.653	-6.178	-7.905	7.528	-11.019	-13.247	-10.412	-9.828	-20.526	-6.634
i_soln	86	-9.603	-37.244	-14.902	-0.811	-54.430	-33.429	-14.315	-7.050	-5.219	4.233	-42.946	-24.965	-7.857	4.823	2.301	-6.031	16.243	-5.970	-9.040	-8.057	-8.102	-20.041	-6.514
i_soln	87	-14.251	-43.239	-14.228	-6.444	-62.610	-38.418	-19.006	-8.932	-6.273	1.854	-47.685	-26.155	-9.399	0.063	-3.649	-7.232	9.703	-8.928	-11.255	-9.599	-9.359	-20.538	-7.091
i_soln	88	-14.255	-43.242	-13.909	-6.036	-62.612	-38.419	-18.829	-8.758	-6.300	1.871	-47.685	-26.156	-9.401	0.099	-3.614	-7.232	9.756	-8.928	-11.335	-9.601	-9.354	-20.589	-6.896
i_soln	89	-14.241	-42.329	-13.666	-5.371	-62.085	-38.056	-17.940	-8.617	-6.396	1.988	-47.323	-25.960	-9.384	0.332	-3.185	-7.053	10.006	-8.555	-11.437	-9.584	-9.216	-20.617	-6.771
i_soln	90	-21.315	-49.582	-11.715	-11.625	-72.864	-44.358	-22.642	-10.260	-7.780	-1.642	-53.624	-26.727	-11.593	-6.928	-11.716	-8.548	0.016	-12.517	-12.848	-11.793	-9.750	-20.838	-6.727
i_soln	91	-9.552	-32.842	-14.651	1.180	-52.425	-32.335	-12.128	-6.253	-5.576	4.553	-42.203	-23.261	-7.694	5.461	3.995	-5.194	16.800	-5.331	-8.050	-7.894	-7.986	-20.652	-6.123
i_soln	92	-11.184	-37.166	-15.425	-3.372	-56.565	-34.794	-16.443	-7.906	-6.020	3.345	-44.662	-24.951	-8.385	3.046	0.539	-6.015	13.577	-7.133	-10.529	-8.585	-8.295	-21.169	-7.201
i_soln	93	-19.146	-48.998	-13.730	-11.546	-70.205	-42.814	-23.583	-10.889	-7.502	-0.566	-52.683	-27.350	-11.066	-4.776	-9.682	-8.373	3.045	-11.852	-13.828	-11.266	-10.115	-21.150	-7.533
i_soln	94	-19.748	-49.994	-13.465	-12.516	-71.405	-43.514	-24.071	-10.973	-7.583	-1.071	-52.429	-27.553	-11.270	-5.785	-10.894	-8.571	1.630	-12.253	-14.130	-11.470	-10.118	-21.106	-7.615
i_soln	95	-22.870	-53.807	-13.696	-15.679	-76.378	-46.406	-25.809	-11.093	-8.244	-3.038	-54.718	-27.687	-12.116	-9.721	-15.359	-9.392	-3.873	-14.200	-14.050	-12.316	-9.032	-21.565	-7.610
i_soln	96	-21.206	-52.491	-12.870	-13.285	-73.826	-44.925	-24.979	-11.087	-7.901	-1.727	-53.487	-27.957	-11.676	-7.097	-12.610	-9.094	-0.138	-13.176	-14.491	-11.876	-10.233	-21.333	-7.371
i_soln	97	-22.213	-54.251	-12.619	-14.468	-75.086	-45.657	-25.325	-11.023	-8.106	-2.422	-54.322	-27.694	-11.896	-8.487	-14.213	-9.481	-2.123	-13.774	-14.202	-12.096	-10.020	-21.516	-7.464
i_soln	98	-21.641	-53.284	-12.414	-13.541	-73.886	-44.958	-24.664	-10.758	-8.025	-2.067	-53.429	-27.499	-11.704	-7.778	-13.309	-9.288	-1.159	-13.387	-13.877	-11.904	-10.080	-21.543	-7.328
i_soln	99	-8.021	-26.048	-15.232	2.494	-48.417	-29.948	-11.136	-5.932	-6.436	5.043	-38.860	-21.757	-7.398	6.442	6.077	-3.771	17.871	-4.378	-7.996	-7.598	-8.870	-22.647	-6.303
i_soln	100	-23.772	-53.626	-11.472	-13.099	-77.854	-47.256	-26.254	-11.032	-7.949	-2.584	-55.124	-27.702	-12.417	-8.811	-14.414	-9.356	-2.409	-14.753	-14.919	-12.617	-9.611	-20.650	-6.392

state	soln	si_Mg(OH)2(active)	si_Mg(VO3)2	si_Mg2V2O7	si_MgCr2O4	si_MgCrO4	si_MgF2	si_Minium	si_Mirabilite	si_Mn(VO3)2	si_Mn2(SO4)3	si_Mn3(AsO4)2:8H2O	si_MnCl2:4H2O	si_MnSO4	si_Monteponite	si_Morenosite	si_Na-Jarosite	si_Na2Cr2O7	si_Na2CrO4	si_Na3VO4	si_Na4V2O7	si_Nantokite	si_Natron	si_NaVO3
i_soln	51	-10.871	-14.836	-21.993	-9.865	-35.027	-8.941	-38.277	-9.350	-10.668	-61.717	-18.637	-15.691	-13.055	-11.873	-8.421	-1.118	-59.525	-34.781	-33.843	-37.441	-4.828	-14.415	-6.738
i_soln	52	-12.170	-18.906	-27.362	-13.629	-39.508	-11.424	-44.097	-9.497	-14.642	-61.839	-21.428	-15.365	-13.064	-13.179	-8.864	-5.600	-67.231	-39.305	-37.240	-42.895	-4.896	-15.582	-8.794
i_soln	53	-12.657	-20.387	-29.330	-15.520	-41.447	-11.115	-46.943	-9.503	-16.763	-63.002	-24.282	-16.527	-13.660	-13.652	-9.084	-8.415	-70.671	-41.292	-38.540	-44.960	-5.315	-16.089	-9.559
i_soln	54	-5.819	-14.499	-16.604	-2.567	-22.252	-4.777	-27.069	-7.914	-12.186	-64.290	-17.026	-15.681	-14.314	-7.609	-9.658	-4.046	-38.187	-21.165	-27.361	-30.371	-6.434	-9.392	-6.149
i_soln	55	-4.299	-16.685	-17.270	-2.143	-17.980	-5.427	-21.929	-8.364	-13.376	-63.874	-13.790	-16.175	-14.070	-5.599	-10.164	-6.646	-30.861	-16.592	-26.482	-30.434	-8.349	-8.657	-7.092
i_soln	56	-3.326	-17.644	-17.256	-5.603	-17.723	-5.610	-19.282	-8.495	-13.879	-63.280	-9.960	-16.194	-13.729	-4.950	-10.416	-9.352	-31.337	-16.352	-26.013	-30.453	-9.212	-8.188	-7.579
i_soln	57	-12.634	-20.365	-29.285	-15.801	-41.577	-11.153	-47.363	-12.115	-15.980	-65.102	-21.925	-15.759	-14.099	-13.627	-10.760	-11.098	-72.365	-42.834	-40.626	-47.741	-5.299	-17.656	-10.255
i_soln	58	-13.651	-23.381	-33.317	-18.187	-44.778	-12.345	-50.519	-11.267	-19.317	-64.268	-24.977	-15.755	-13.934	-14.652	-10.273	-12.441	-77.390	-45.675	-42.608	-51.051	-5.626	-18.286	-11.582
i_soln	59	-14.053	-24.583	-34.922	-19.416	-46.193	-12.662	-51.597	-11.060	-21.260	-65.878	-28.125	-16.430	-14.718	-15.056	-10.317	-14.632	-79.568	-46.839	-43.236	-52.154	-5.294	-18.432	-12.058
i_soln	60	-8.200	-13.991	-18.477	-6.788	-29.153	-6.297	-33.730	-9.800	-9.325	-58.070	-12.546	-16.666	-11.450	-9.884	-7.186	-4.130	-52.005	-30.464	-33.084	-37.039	-6.903	-14.164	-7.094
i_soln	61	-10.260	-14.764	-21.310	-10.370	-34.074	-7.012	-38.882	-10.336	-8.869	-57.834	-12.941	-16.077	-11.182	-11.241	-8.031	-5.981	-59.363	-34.960	-34.894	-39.023	-6.730	-15.263	-7.268
i_soln	62	-12.268	-20.398	-28.952	-16.495	-42.040	-8.609	-49.236	-10.028	-15.297	-58.052	-18.488	-15.326	-11.322	-13.856	-8.398	-11.844	-73.633	-43.273	-40.239	-47.358	-6.230	-17.257	-10.259
i_soln	63	-13.267	-24.197	-33.750	-20.722	-46.753	-7.433	-55.329	-9.102	-19.024	-55.264	-20.183	-14.734	-10.234	-15.378	-7.422	-16.162	-82.149	-48.074	-43.269	-52.332	-6.285	-18.320	-12.202
i_soln	64	-9.827	-14.610	-20.722	-8.490	-32.317	-6.633	-36.306	-11.715	-10.123	-64.751	-16.376	-16.208	-13.946	-10.811	-10.232	-2.994	-56.305	-33.226	-34.417	-38.481	-6.109	-14.678	-7.203
i_soln	65	-8.424	-14.604	-19.314	-5.386	-27.964	-6.282	-30.720	-11.405	-9.864	-63.315	-13.596	-16.577	-13.381	-9.404	-9.924	-1.343	-49.002	-28.874	-33.013	-37.074	-6.348	-13.757	-7.200
i_soln	66	-6.260	-15.154	-17.700	-1.720	-21.749	-4.850	-23.027	-9.149	-10.789	-61.692	-11.508	-16.937	-12.978	-7.258	-8.236	0.616	-37.260	-21.183	-28.910	-32.507	-6.948	-10.995	-6.737
i_soln	67	-4.661	-16.238	-17.185	-1.709	-18.544	-5.727	-22.724	-9.503	-12.378	-63.422	-11.755	-16.902	-13.723	-5.849	-9.744	-6.347	-32.562	-18.091	-28.022	-32.218	-8.669	-9.770	-7.335
i_soln	68	-4.085	-16.815	-17.186	-1.385	-17.194	-5.756	-21.503	-8.747	-12.394	-61.466	-9.570	-16.092	-12.892	-5.411	-9.424	-7.262	-29.952	-16.255	-27.005	-31.247	-7.058	-9.010	-7.381
i_soln	69	-13.934	-24.264	-34.484	-19.646	-46.099	-11.831	-53.461	-11.559	-20.311	-64.879	-25.925	-16.310	-14.169	-14.925	-10.397	-15.500	-79.916	-47.163	-43.584	-52.552	-5.832	-18.732	-12.107
i_soln	70	-14.435	-25.766	-36.487	-21.816	-48.185	-11.434	-55.474	-10.866	-21.009	-61.675	-24.925	-15.858	-12.834	-15.422	-9.866	-17.112	-83.426	-49.088	-44.595	-54.234	-6.005	-19.370	-12.778
i_soln	71	-14.229	-25.159	-35.674	-21.164	-47.455	-10.567	-54.649	-10.952	-21.056	-63.234	-26.238	-16.657	-13.569	-15.214	-9.948	-18.299	-82.177	-48.362	-44.091	-53.428	-6.074	-19.168	-12.476
i_soln	72	-6.044	-15.224	-17.554	-2.662	-21.812	-5.708	-25.959	-11.443	-11.248	-64.971	-13.354	-16.715	-14.195	-7.074	-10.533	-6.470	-39.067	-22.710	-30.926	-35.291	-7.668	-11.832	-7.505
i_soln	73	-4.858	-16.068	-17.213	-1.730	-18.953	-5.975	-22.974	-10.504	-12.151	-63.038	-12.373	-16.991	-13.575	-5.981	-10.031	-7.558	-34.274	-19.591	-29.771	-34.428	-8.545	-11.090	-7.796
i_soln	74	-4.460	-16.408	-17.153	-1.796	-18.186	-5.726	-22.094	-10.657	-13.097	-64.717	-13.798	-17.459	-14.338	-5.646	-10.317	-9.059	-33.137	-18.822	-29.540	-34.365	-8.796	-10.913	-7.965
i_soln	75	-4.620	-15.520	-16.426	-0.784	-18.661	-4.601	-23.765	-8.432	-12.378	-62.234	-13.646	-16.775	-13.420	-6.233	-9.266	-3.997	-32.788	-18.159	-27.549	-31.362	-8.201	-9.397	-6.952
i_soln	76	-4.642	-15.563	-16.491	-0.810	-18.685	-4.378	-23.679	-7.920	-13.025	-62.804	-15.546	-17.392	-13.818	-6.239	-9.338	-5.531	-32.507	-17.875	-27.132	-30.813	-7.572	-9.165	-6.820
i_soln	77	-4.104	-16.860	-17.250	-2.027	-17.524	-5.077	-20.630	-8.303	-13.154	-62.252	-12.403	-16.807	-13.399	-5.428	-9.684	-6.047	-30.359	-16.350	-26.695	-30.841	-8.433	-8.777	-7.286
i_soln	78	-4.301	-16.677	-17.264	-2.139	-17.979	-5.293	-20.935	-8.139	-12.669	-61.464	-10.734	-16.212	-13.035	-5.557	-9.203	-5.317	-30.969	-16.703	-26.648	-30.652	-8.699	-8.833	-7.144
i_soln	79	-13.732	-23.662	-33.681	-19.634	-45.692	-11.498	-52.656	-11.296	-20.462	-66.072	-27.721	-17.135	-14.817	-14.722	-10.292	-14.725	-79.146	-46.598	-42.845	-51.433	-5.866	-18.676	-11.727
i_soln	80	-13.635	-23.365	-33.286	-19.344	-45.348	-11.157	-51.370	-10.535	-20.341	-65.477	-28.041	-17.367	-14.678	-14.625	-9.978	-14.516	-78.110	-45.809	-41.930	-50.147	-5.896	-18.134	-11.356
i_soln	81	-12.621	-20.351	-29.258	-16.363	-41.851	-10.400	-48.216	-12.673	-17.327	-67.684	-25.958	-17.659	-15.409	-13.605	-10.709	-14.118	-73.536	-43.718	-41.518	-48.931	-6.033	-18.250	-10.552
i_soln	82	-12.226	-19.160	-27.671	-15.259	-40.501	-10.357	-45.736	-12.078	-16.135	-67.709	-25.187	-17.403	-15.419	-13.214	-10.719	-11.546	-70.627	-41.763	-39.621	-46.135	-5.911	-17.272	-9.654
i_soln	83	-13.230	-22.160	-31.676	-18.131	-43.939	-11.297	-50.649	-11.459	-18.835	-66.308	-26.291	-17.013	-14.853	-14.220	-10.454	-14.040	-76.144	-44.847	-41.594	-49.431	-5.868	-17.882	-10.977
i_soln	84	-12.626	-20.356	-29.268	-16.378	-41.861	-10.480	-48.235	-11.779	-17.332	-66.811	-25.976	-17.506	-15.120	-13.612	-10.419	-11.988	-72.946	-43.123	-40.619	-47.732	-5.960	-17.952	-10.252
i_soln	85	-12.845	-20.975	-30.106	-16.406	-42.284	-11.725	-47.675	-11.194	-17.651	-65.927	-24.747	-16.585	-14.731	-13.843	-10.331	-10.417	-73.078	-43.050	-40.403	-47.578	-5.667	-17.270	-10.314
i_soln	86	-10.842	-15.403	-22.531	-10.156	-35.158	-8.876	-38.610	-11.444	-10.875	-63.865	-18.054	-15.482	-13.642	-11.838	-9.446	-4.004	-60.963	-36.059	-35.818	-40.274	-5.130	-15.531	-7.595
i_soln	87	-12.032	-18.571	-26.889	-14.130	-39.540	-10.473	-44.437	-11.437	-14.468	-64.689	-21.583	-16.121	-14.055	-13.024	-10.133	-9.336	-68.542	-40.446	-38.599	-44.642	-5.515	-16.737	-9.182
i_soln	88	-12.033	-18.572	-26.891	-14.132	-39.541	-10.408	-44.441	-11.260	-14.548	-64.317	-21.823	-16.252	-13.958	-13.024	-9.956	-8.929	-68.543	-40.447	-38.600	-44.642	-5.541	-16.737	-9.182
i_soln	89	-11.837	-17.984	-26.107	-14.208	-39.181	-9.747	-44.193	-10.351	-14.358	-64.195	-22.639	-16.677	-14.051	-12.828	-9.953	-7.962	-67.415	-39.482	-37.202	-42.648	-5.558	-15.953	-8.586
i_soln	90	-13.108	-22.838	-32.233	-19.032	-44.929	-9.317	-52.619	-8.606	-18.452	-58.694	-22.400	-15.540	-11.788	-14.705	-8.209	-13.818	-77.396	-44.988	-40.538	-48.290	-5.703	-17.207	-10.892
i_soln	91	-9.786	-14.429	-20.501	-9.678	-33.191	-6.874	-37.321	-8.789	-10.366	-60.471	-17.303	-15.931	-12.580	-11.082	-8.921	-1.013	-56.958	-32.965	-32.583	-35.988	-5.621	-13.567	-6.544
i_soln	92	-10.828	-15.385	-22.499	-11.682	-35.914	-7.645	-40.194	-10.986	-12.361	-66.242	-22.511	-17.517	-14.931	-11.814	-10.231	-6.140	-62.246	-36.572	-35.430	-39.756	-5.985	-15.272	-7.465
i_soln	93	-13.227	-22.157	-31.670	-18.122	-43.933	-10.721	-50.639	-11.256	-18.832	-65.700	-26.278	-17.216	-14.649	-14.214	-10.250	-14.438	-76.136	-44.842	-41.591	-49.427	-5.966	-17.880	-10.976
i_soln	94	-13.429	-22.759	-32.475	-18.723	-44.635	-10.768	-51.449	-10.885	-19.434	-65.338	-26.696	-17.173	-14.530	-14.417	-10.130	-15.283	-77.087	-45.293	-41.717	-49.729	-5.945	-17.828	-11.152
i_soln	95	-13.959	-24.889	-35.133	-21.015	-47.245	-7.803	-54.787	-9.929	-20.554	-60.460	-24.741	-16.323	-12.476	-15.245	-8.787	-18.349	-81.865	-47.990	-43.442	-52.563	-6.188	-18.736	-12.260
i_soln	96	-13.833	-23.963	-34.082	-19.947	-46.049	-10.765	-53.068	-10.586	-20.395	-63.961	-26.842	-17.159	-13.991	-14.819	-9.291	-16.052	-79.507	-46.703	-42.719	-51.331	-6.060	-18.348	-11.752
i_soln	97	-14.046	-24.576	-34.908	-20.615	-46.789	-10.142	-53.927	-10.095	-20.406	-61.877	-25.557	-16.741	-13.100	-15.031	-9.245	-17.138	-80.574	-47.242	-42.934	-51.752	-6.157	-18.532	-11.957
i_soln	98	-13.851	-23.981	-34.118	-20.019	-46.094	-10.229	-53.151	-9.787	-19.781	-61.582	-25.007	-16.738	-12.993	-14.836	-9.071	-16.097	-79.146	-46.315	-42.095	-50.500	-6.174	-18.108	-11.544
i_soln	99	-8.685	-14.102	-19.073	-7.735	-30.469	-5.822	-35.635	-8.601	-11.487	-61.176	-19.596	-18.589	-13.197	-10.378	-8.796	0.147	-53.257	-30.885	-32.282	-35.844	-6.861	-12.785	-6.702
i_soln	100	-13.923	-25.254	-35.463	-21.631	-47.836	-9.515	-55.892	-7.877	-21.724	-60.207	-27.086	-15.900	-12.582	-15.529	-7.952	-14.963	-81.728	-47.227	-41.559	-50.186	-5.769	-17.346	-11.766

state	soln	si_Nesquehonite	si_Ni(OH)2	si_Ni3(AsO4)2:8H2O	si_Ni4(OH)6SO4	si_NiCO3	si_Nsutite	si_O2(g)	si_Otavite	si_Pb(BO2)2	si_Pb(OH)2	si_Pb10(OH)6O(CO3)6	si_Pb2(OH)3Cl	si_Pb2O(OH)2	si_Pb2O3	si_Pb2OCO3	si_Pb2V2O7	si_Pb3(AsO4)2	si_Pb3(VO4)2	si_Pb3O2CO3	si_Pb3O2SO4	si_Pb4(OH)6SO4	si_Pb4O3SO4	si_PbCrO4
i_soln	51	-8.852	-7.177	-22.118	-25.714	-8.958	-16.743	-42.289	-6.215	-10.435	-3.202	-70.426	-8.239	-16.291	-30.743	-10.990	0.318	-14.224	-2.774	-17.620	-12.024	-17.490	-18.267	-20.021
i_soln	52	-9.977	-8.815	-26.213	-31.071	-10.421	-19.246	-44.889	-7.346	-11.997	-4.709	-84.450	-10.489	-19.305	-35.057	-13.830	-5.467	-17.927	-10.065	-21.966	-15.351	-22.323	-23.100	-24.711
i_soln	53	-10.435	-9.564	-27.938	-33.539	-11.143	-20.872	-45.889	-7.791	-12.723	-5.491	-92.100	-12.071	-20.869	-37.121	-15.366	-8.026	-19.749	-13.406	-24.284	-17.167	-24.921	-25.698	-26.945
i_soln	54	-4.669	-3.957	-20.441	-17.293	-6.607	-9.146	-33.490	-2.819	-8.813	-0.932	-52.944	-5.295	-11.753	-21.805	-7.320	0.141	-15.398	-0.681	-11.680	-9.673	-12.869	-13.646	-10.029
i_soln	55	-4.236	-2.192	-19.454	-12.502	-5.929	-4.430	-29.090	-1.897	-8.405	0.048	-49.668	-4.840	-9.793	-17.645	-6.448	-1.605	-16.768	-1.447	-9.828	-9.004	-11.220	-11.997	-6.297
i_soln	56	-3.751	-1.356	-17.404	-10.248	-5.581	-2.002	-27.089	-1.735	-8.718	0.597	-47.106	-4.466	-8.695	-15.547	-5.838	-2.438	-15.578	-1.732	-8.669	-8.445	-10.112	-10.890	-6.464
i_soln	57	-10.589	-10.018	-29.292	-36.576	-11.772	-20.089	-45.889	-7.942	-13.510	-5.630	-94.554	-12.358	-21.149	-37.401	-15.821	-8.305	-20.161	-13.826	-24.879	-18.808	-26.702	-27.479	-27.236
i_soln	58	-11.580	-11.034	-31.380	-39.139	-12.763	-22.427	-47.889	-8.941	-13.923	-6.349	-101.586	-13.124	-22.586	-39.838	-17.233	-11.742	-21.355	-17.981	-27.009	-19.461	-28.073	-28.850	-30.140
i_soln	59	-11.977	-11.437	-32.306	-40.389	-13.161	-23.970	-48.689	-9.341	-13.924	-6.575	-103.821	-13.343	-23.038	-40.690	-17.681	-12.995	-21.753	-19.460	-27.684	-19.781	-28.620	-29.397	-31.379
i_soln	60	-7.045	-4.377	-17.138	-16.081	-7.022	-11.574	-38.289	-5.089	-10.715	-2.353	-67.118	-8.614	-14.593	-27.045	-10.156	0.189	-15.095	-2.053	-15.936	-11.041	-15.658	-16.435	-15.969
i_soln	61	-8.568	-6.322	-20.874	-22.761	-8.430	-13.805	-41.089	-5.909	-11.959	-3.603	-76.405	-10.405	-17.095	-30.947	-12.121	-1.025	-16.749	-4.518	-19.152	-13.694	-19.561	-20.338	-20.081
i_soln	62	-10.215	-9.352	-27.101	-32.216	-11.099	-19.207	-46.289	-8.164	-14.216	-6.188	-100.088	-13.798	-22.264	-38.716	-16.930	-9.820	-21.643	-15.899	-26.545	-18.786	-27.238	-28.015	-28.624
i_soln	63	-11.190	-10.389	-29.129	-34.351	-12.112	-21.533	-49.090	-9.661	-15.677	-7.752	-115.584	-16.167	-25.393	-43.245	-20.034	-15.749	-25.252	-23.391	-31.214	-21.465	-31.481	-32.258	-33.902
i_soln	64	-7.959	-6.734	-22.619	-26.197	-8.667	-14.380	-40.289	-5.304	-10.594	-2.878	-68.099	-8.533	-15.644	-29.096	-10.495	0.147	-15.083	-2.621	-16.801	-13.307	-18.449	-19.226	-18.032
i_soln	65	-7.038	-5.334	-20.606	-21.687	-7.748	-11.323	-37.489	-4.379	-9.136	-1.483	-57.036	-6.755	-12.853	-24.905	-8.186	1.541	-13.086	0.168	-13.096	-10.213	-13.960	-14.737	-13.686
i_soln	66	-5.752	-2.262	-14.666	-10.784	-5.554	-7.336	-33.089	-3.110	-6.642	0.349	-43.990	-4.166	-9.191	-19.043	-5.401	2.489	-10.867	2.948	-8.480	-6.104	-8.019	-8.796	-7.804
i_soln	67	-4.415	-1.930	-17.200	-11.297	-5.483	-4.642	-29.889	-1.963	-8.525	-0.084	-49.884	-5.560	-10.056	-18.308	-6.528	-1.058	-15.693	-1.032	-10.039	-9.241	-11.588	-12.366	-6.631
i_soln	68	-4.140	-1.304	-16.549	-9.098	-5.159	-2.904	-28.689	-1.827	-8.922	0.123	-49.624	-5.310	-9.642	-17.294	-6.415	-1.798	-16.300	-1.565	-9.720	-8.926	-11.067	-11.844	-5.650
i_soln	69	-11.859	-11.318	-31.995	-40.113	-13.043	-23.121	-48.489	-9.211	-14.603	-7.230	-110.371	-14.966	-24.347	-41.899	-18.991	-14.103	-23.763	-21.223	-29.648	-21.944	-31.437	-32.214	-32.058
i_soln	70	-12.658	-11.819	-33.405	-41.085	-13.841	-23.319	-49.489	-10.005	-15.526	-7.734	-117.197	-15.900	-25.356	-43.408	-20.296	-16.112	-25.182	-23.736	-31.458	-22.424	-32.421	-33.198	-34.147
i_soln	71	-12.453	-11.612	-32.760	-40.548	-13.636	-23.565	-49.089	-9.798	-15.452	-7.526	-115.122	-15.659	-24.939	-42.791	-19.881	-15.296	-24.531	-22.711	-30.834	-22.088	-31.877	-32.654	-33.416
i_soln	72	-5.124	-3.514	-19.752	-16.839	-6.395	-7.308	-32.689	-2.515	-8.597	-0.696	-51.963	-6.057	-11.280	-20.932	-7.078	0.114	-15.328	-0.471	-11.202	-10.282	-13.241	-14.018	-9.128
i_soln	73	-4.643	-2.505	-19.126	-13.308	-6.090	-4.981	-30.289	-2.127	-8.440	-0.101	-50.240	-5.569	-10.089	-18.541	-6.592	-0.725	-15.945	-0.716	-10.121	-9.004	-11.368	-12.145	-6.859
i_soln	74	-4.468	-2.236	-19.120	-12.788	-6.044	-4.789	-29.489	-2.015	-8.540	0.059	-49.979	-5.379	-9.769	-17.821	-6.496	-1.143	-16.265	-0.974	-9.864	-9.078	-11.282	-12.059	-6.331
i_soln	75	-4.089	-2.433	-18.569	-12.327	-5.702	-5.719	-30.689	-2.063	-8.147	-0.298	-50.317	-5.586	-10.484	-19.136	-6.671	-0.809	-16.196	-0.997	-10.397	-8.902	-11.463	-12.240	-7.002
i_soln	76	-4.165	-2.731	-19.490	-13.294	-6.055	-6.343	-30.689	-2.123	-7.340	-0.269	-50.354	-5.524	-10.426	-19.078	-6.667	-0.773	-16.135	-0.932	-10.364	-8.589	-11.121	-11.898	-6.976
i_soln	77	-4.142	-1.792	-18.643	-10.823	-5.630	-3.639	-28.689	-1.826	-7.527	0.414	-46.611	-4.719	-9.060	-16.712	-5.816	-1.242	-16.058	-0.718	-8.830	-7.826	-9.676	-10.453	-5.670
i_soln	78	-4.301	-1.570	-16.623	-9.675	-5.369	-3.734	-29.089	-1.917	-7.907	0.379	-46.728	-4.543	-9.130	-16.982	-5.847	-0.931	-14.808	-0.442	-8.896	-7.671	-9.556	-10.333	-5.962
i_soln	79	-11.961	-11.116	-31.532	-39.403	-13.144	-23.472	-48.089	-9.311	-14.635	-7.028	-110.175	-14.700	-23.944	-41.296	-18.891	-13.300	-23.300	-20.218	-29.347	-21.436	-30.728	-31.505	-31.651
i_soln	80	-11.865	-11.019	-31.324	-38.797	-13.049	-23.451	-47.889	-9.215	-14.239	-6.633	-106.228	-13.985	-23.153	-40.405	-18.101	-12.309	-22.197	-18.832	-28.162	-20.032	-28.928	-29.705	-31.010
i_soln	81	-10.575	-10.004	-29.242	-36.483	-11.758	-21.436	-45.889	-7.920	-13.794	-5.915	-97.395	-13.203	-21.717	-37.969	-16.390	-8.874	-21.006	-14.679	-25.732	-19.624	-27.802	-28.579	-27.809
i_soln	82	-10.201	-9.609	-28.471	-35.309	-11.384	-20.641	-45.089	-7.549	-12.648	-5.221	-90.586	-11.886	-20.331	-36.183	-15.024	-6.691	-19.339	-11.802	-23.673	-17.949	-25.434	-26.211	-26.161
i_soln	83	-11.166	-10.614	-30.477	-38.057	-12.349	-22.345	-47.089	-8.516	-14.068	-6.526	-103.395	-13.948	-22.939	-39.791	-17.593	-11.295	-22.245	-17.711	-27.547	-20.592	-29.381	-30.159	-29.899
i_soln	84	-10.881	-10.009	-29.260	-36.209	-12.064	-21.441	-45.889	-8.228	-13.756	-5.921	-99.267	-13.137	-21.730	-37.982	-16.704	-8.887	-21.028	-14.698	-26.053	-19.349	-27.534	-28.311	-27.820
i_soln	85	-10.695	-10.228	-28.930	-36.779	-11.879	-21.561	-46.289	-8.054	-12.922	-5.668	-94.302	-12.210	-21.224	-37.676	-15.792	-8.780	-19.280	-14.338	-24.887	-18.281	-26.213	-26.990	-27.771
i_soln	86	-8.821	-7.226	-22.851	-26.887	-9.005	-16.354	-42.289	-6.177	-10.888	-3.313	-71.524	-8.552	-16.514	-30.966	-11.210	-0.500	-15.143	-3.703	-17.951	-13.334	-18.910	-19.687	-20.292
i_soln	87	-10.022	-9.115	-27.200	-33.240	-10.904	-19.169	-44.689	-7.374	-12.309	-4.855	-87.011	-11.149	-19.598	-35.250	-14.306	-5.563	-18.453	-10.308	-22.589	-16.758	-23.877	-24.654	-25.026
i_soln	88	-10.022	-9.116	-27.202	-33.066	-10.905	-19.249	-44.689	-7.374	-12.311	-4.857	-87.024	-11.177	-19.601	-35.253	-14.308	-5.565	-18.456	-10.312	-22.593	-16.585	-23.705	-24.482	-25.028
i_soln	89	-9.843	-9.221	-27.728	-33.377	-11.027	-19.251	-44.289	-7.194	-12.267	-4.840	-86.964	-11.256	-19.568	-35.020	-14.293	-5.142	-18.619	-9.872	-22.561	-16.428	-23.532	-24.309	-24.849
i_soln	90	-11.339	-10.251	-29.047	-34.726	-12.281	-21.562	-47.889	-9.295	-14.841	-7.049	-110.395	-14.849	-23.986	-41.238	-18.934	-13.142	-23.472	-20.081	-29.411	-20.280	-29.592	-30.370	-31.533
i_soln	91	-7.984	-7.172	-23.709	-26.200	-9.170	-14.964	-40.689	-5.641	-10.944	-3.150	-71.207	-8.746	-16.187	-29.839	-11.103	-0.256	-15.673	-3.296	-17.681	-12.373	-17.786	-18.563	-19.219
i_soln	92	-8.805	-8.212	-25.796	-30.629	-9.989	-17.843	-42.289	-6.152	-11.119	-3.841	-76.793	-9.881	-17.570	-32.022	-12.265	-1.553	-16.715	-5.284	-19.533	-14.717	-20.822	-21.599	-21.591
i_soln	93	-11.163	-10.610	-30.465	-37.844	-12.346	-22.342	-47.089	-8.510	-14.034	-6.522	-103.363	-14.045	-22.933	-39.785	-17.587	-11.289	-22.233	-17.701	-27.537	-20.382	-29.168	-29.946	-29.893
i_soln	94	-11.361	-10.813	-30.883	-38.332	-12.545	-22.744	-47.489	-8.709	-14.180	-6.726	-105.372	-14.328	-23.339	-40.391	-17.990	-12.095	-22.653	-18.711	-28.143	-20.670	-29.659	-30.436	-30.595
i_soln	95	-12.182	-11.042	-31.056	-37.675	-13.066	-23.064	-49.089	-9.829	-15.656	-7.572	-115.582	-15.835	-25.031	-42.883	-19.973	-15.388	-24.677	-22.849	-30.972	-21.635	-31.470	-32.247	-33.522
i_soln	96	-11.884	-10.673	-30.125	-37.072	-12.524	-23.305	-48.289	-9.230	-14.845	-7.132	-110.152	-15.054	-24.152	-41.604	-18.922	-13.708	-23.536	-20.730	-29.482	-21.189	-30.585	-31.362	-32.012
i_soln	97	-12.271	-11.129	-31.376	-38.394	-13.154	-23.116	-48.689	-9.617	-15.231	-7.352	-113.391	-15.478	-24.591	-42.243	-19.535	-14.547	-24.076	-21.789	-30.314	-21.346	-30.961	-31.738	-32.759
i_soln	98	-12.078	-10.837	-30.624	-37.346	-12.865	-22.691	-48.289	-9.424	-15.110	-7.160	-111.484	-15.205	-24.207	-41.659	-19.153	-13.763	-23.624	-20.813	-29.740	-20.888	-30.311	-31.088	-32.066
i_soln	99	-6.561	-6.776	-23.775	-24.887	-8.452	-14.510	-39.090	-4.614	-10.535	-2.854	-66.319	-9.310	-15.597	-28.449	-10.190	-0.439	-16.040	-3.183	-16.472	-11.757	-16.875	-17.652	-17.302
i_soln	100	-12.146	-10.871	-30.578	-36.326	-12.893	-24.033	-49.489	-10.112	-15.665	-7.873	-118.591	-15.843	-25.634	-43.686	-20.575	-16.391	-25.618	-24.154	-31.876	-21.876	-32.013	-32.790	-34.450

state	soln	si_PbF2	si_Pbmetal	si_PbO:0.3H2O	si_Periclase	si_Phosgenite	si_Plattnerite	si_Portlandite	si_Pyrochroite	si_Pyrolusite	si_Retgersite	si_Rhodochrosite	si_Siderite	si_Smithsonite	si_Spinel	si_Tenorite	si_Thenardite	si_Thermonatrite	si_V(OH)3	si_V2O5	si_V3O5	si_V4O7	si_V6O13	si_VCl2
i_soln	51	-12.605	-19.698	-8.032	-13.661	-10.424	-24.252	-14.800	-9.483	-15.269	-8.526	-5.154	-2.643	-4.484	-4.202	-2.350	-10.786	-16.363	-11.132	-10.119	-19.346	-23.732	-14.377	-51.301
i_soln	52	-15.297	-19.905	-9.539	-14.960	-11.735	-27.059	-16.399	-10.686	-17.772	-8.969	-6.183	-3.886	-5.651	-6.587	-3.831	-10.933	-17.530	-11.217	-12.890	-20.252	-25.374	-20.090	-49.208
i_soln	53	-15.283	-20.187	-10.320	-15.447	-13.308	-28.341	-16.886	-11.812	-19.398	-9.189	-7.280	-4.810	-6.259	-8.850	-4.482	-10.938	-18.037	-11.214	-13.885	-20.494	-25.864	-22.074	-48.992
i_soln	54	-11.225	-21.828	-5.762	-8.609	-9.942	-17.582	-9.601	-6.286	-7.672	-9.763	-2.825	-4.699	-2.078	-5.111	-0.161	-9.350	-11.339	-17.889	-14.834	-37.418	-46.362	-37.322	-63.446
i_soln	55	-12.415	-23.048	-4.782	-7.089	-12.079	-14.402	-7.931	-3.770	-2.956	-10.269	-1.397	-6.542	-2.027	-4.691	0.529	-9.799	-10.605	-21.942	-18.540	-48.477	-60.375	-52.840	-71.610
i_soln	56	-13.021	-23.500	-4.234	-6.116	-12.917	-12.854	-7.572	-2.342	-0.528	-10.521	-0.456	-7.867	-2.476	-4.675	0.889	-9.931	-10.136	-23.908	-20.471	-53.874	-67.237	-60.634	-75.523
i_soln	57	-15.483	-20.327	-10.460	-15.424	-13.778	-28.480	-16.862	-11.029	-18.615	-10.865	-6.673	-4.834	-6.775	-8.740	-4.459	-13.551	-19.604	-11.214	-13.885	-20.494	-25.864	-22.074	-49.006
i_soln	58	-16.377	-20.045	-11.179	-16.441	-13.848	-30.199	-17.878	-12.367	-20.953	-10.378	-7.986	-5.649	-7.445	-11.587	-5.956	-12.703	-20.233	-11.214	-15.884	-20.993	-26.862	-26.072	-47.165
i_soln	59	-16.518	-19.871	-11.405	-16.843	-13.827	-30.825	-18.280	-13.510	-22.496	-10.422	-9.124	-6.389	-7.629	-12.877	-6.059	-12.496	-20.380	-11.214	-16.684	-21.193	-27.263	-27.673	-46.496
i_soln	60	-11.784	-20.849	-7.183	-10.990	-13.735	-21.403	-12.019	-6.314	-10.100	-7.291	-2.848	-4.654	-3.846	-6.080	-1.351	-11.235	-16.112	-14.045	-11.945	-27.085	-33.385	-23.856	-59.359
i_soln	61	-11.690	-20.700	-8.433	-13.050	-14.280	-24.053	-13.645	-7.145	-12.331	-8.136	-3.143	-4.495	-4.820	-6.745	-2.588	-11.772	-17.211	-12.001	-10.658	-21.655	-26.611	-17.195	-55.196
i_soln	62	-13.863	-20.684	-11.018	-15.058	-15.535	-29.238	-16.403	-9.947	-17.733	-8.503	-5.584	-6.171	-7.121	-11.228	-5.165	-11.464	-19.205	-11.214	-14.284	-20.594	-26.063	-22.873	-49.555
i_soln	63	-13.252	-20.848	-12.582	-16.057	-17.121	-32.202	-16.978	-10.873	-20.059	-7.527	-6.486	-8.047	-8.155	-17.660	-6.680	-10.538	-20.268	-11.214	-17.085	-21.294	-27.463	-28.474	-47.337
i_soln	64	-11.018	-20.374	-7.708	-12.617	-11.810	-22.928	-14.054	-8.120	-12.906	-10.337	-3.943	-2.399	-4.204	-4.008	-2.189	-13.150	-16.625	-12.541	-10.937	-23.073	-28.368	-18.831	-55.091
i_soln	65	-10.675	-20.379	-6.313	-11.214	-11.527	-20.133	-12.651	-6.463	-9.849	-10.029	-2.768	-2.536	-3.101	-3.725	-0.715	-12.841	-15.705	-14.639	-12.334	-28.668	-35.363	-25.823	-59.916
i_soln	66	-9.575	-20.748	-4.482	-9.050	-10.889	-16.102	-10.187	-4.676	-5.862	-8.341	-1.858	-3.545	-1.572	-2.786	0.858	-10.585	-12.943	-18.196	-15.048	-38.238	-47.390	-38.363	-66.719
i_soln	67	-12.484	-22.780	-4.914	-7.451	-13.074	-14.934	-8.416	-3.582	-3.168	-9.849	-1.025	-5.949	-1.880	-4.586	0.467	-10.938	-11.718	-21.137	-17.731	-46.263	-57.555	-49.611	-71.519
i_soln	68	-12.881	-23.173	-4.707	-6.875	-13.290	-14.127	-8.322	-2.444	-1.430	-9.529	-0.189	-6.828	-1.834	-4.828	2.542	-10.182	-10.958	-22.314	-18.884	-49.493	-61.662	-54.271	-73.324
i_soln	69	-16.460	-20.626	-12.060	-16.724	-15.766	-31.380	-18.162	-12.761	-21.647	-10.502	-8.376	-6.546	-7.982	-13.243	-6.232	-12.994	-20.680	-11.214	-16.484	-21.143	-27.163	-27.272	-47.175
i_soln	70	-16.067	-20.630	-12.564	-17.225	-16.922	-32.384	-18.664	-12.459	-21.845	-9.971	-8.371	-7.762	-9.215	-15.647	-6.730	-12.302	-21.318	-11.214	-17.485	-21.394	-27.664	-29.274	-46.775
i_soln	71	-15.198	-20.622	-12.356	-17.019	-16.859	-31.976	-18.457	-12.905	-22.091	-10.053	-8.819	-8.100	-9.091	-15.727	-6.523	-12.388	-21.116	-11.214	-17.084	-21.294	-27.463	-28.473	-47.228
i_soln	72	-11.694	-21.992	-5.526	-8.834	-12.171	-16.946	-9.369	-4.848	-5.834	-10.638	-1.619	-4.691	-1.937	-5.019	0.040	-12.878	-13.780	-18.539	-15.334	-39.168	-48.563	-39.622	-66.768
i_soln	73	-12.551	-22.597	-4.931	-7.648	-13.089	-15.151	-8.134	-3.721	-3.507	-10.136	-1.196	-6.261	-2.123	-5.319	0.466	-11.939	-13.038	-20.754	-17.364	-45.213	-56.223	-48.112	-70.987
i_soln	74	-12.541	-22.837	-4.771	-7.250	-13.252	-14.591	-7.736	-3.929	-3.315	-10.422	-1.627	-6.882	-2.326	-5.487	0.545	-12.093	-12.861	-21.523	-18.102	-47.320	-58.899	-51.126	-72.215
i_soln	75	-11.613	-22.594	-5.128	-7.410	-12.414	-15.548	-8.553	-4.259	-4.245	-9.371	-1.418	-5.350	-1.488	-3.649	0.332	-9.868	-11.344	-20.399	-17.053	-44.247	-55.001	-46.780	-69.777
i_soln	76	-11.339	-22.565	-5.099	-7.432	-12.402	-15.519	-8.576	-4.883	-4.869	-9.443	-2.097	-6.114	-1.352	-4.660	0.958	-9.356	-11.113	-20.410	-17.075	-44.280	-55.045	-46.846	-69.780
i_soln	77	-11.893	-22.882	-4.416	-6.894	-12.671	-13.836	-7.864	-3.179	-2.165	-9.789	-0.906	-6.594	-1.553	-4.081	1.157	-9.739	-10.725	-22.327	-18.910	-49.531	-61.714	-54.349	-73.317
i_soln	78	-11.946	-22.717	-4.451	-7.092	-12.212	-14.071	-8.537	-3.074	-2.260	-9.308	-0.763	-6.369	-1.798	-4.488	0.546	-9.575	-10.781	-21.937	-18.530	-48.462	-60.354	-52.809	-72.338
i_soln	79	-16.128	-20.624	-11.858	-16.523	-15.940	-30.978	-17.960	-13.312	-21.998	-10.397	-9.231	-6.686	-8.119	-12.775	-6.030	-12.731	-20.624	-11.214	-16.084	-21.043	-26.963	-26.472	-47.549
i_soln	80	-15.488	-20.329	-11.463	-16.425	-15.303	-30.483	-17.863	-13.391	-21.977	-10.083	-9.311	-6.903	-8.012	-12.734	-5.932	-11.971	-20.082	-11.214	-15.884	-20.993	-26.862	-26.072	-47.752
i_soln	81	-15.028	-20.611	-10.745	-15.411	-14.899	-28.765	-16.848	-12.376	-19.962	-10.814	-8.020	-5.766	-6.951	-9.479	-4.917	-14.109	-20.198	-11.214	-13.885	-20.494	-25.864	-22.074	-49.559
i_soln	82	-14.686	-20.318	-10.051	-15.016	-13.672	-27.671	-16.453	-11.981	-19.167	-10.824	-7.646	-5.026	-6.131	-7.946	-4.525	-13.514	-19.220	-11.216	-13.088	-20.299	-25.471	-20.484	-49.900
i_soln	83	-15.927	-20.622	-11.356	-16.020	-15.148	-29.976	-17.458	-12.685	-20.871	-10.559	-8.311	-6.056	-7.225	-10.973	-5.528	-12.894	-19.830	-11.214	-15.084	-20.793	-26.462	-24.472	-48.305
i_soln	84	-15.109	-20.617	-10.751	-15.416	-15.055	-28.771	-16.853	-12.381	-19.967	-10.524	-8.327	-5.653	-7.168	-9.412	-4.923	-13.214	-19.900	-11.214	-13.885	-20.494	-25.864	-22.074	-49.401
i_soln	85	-15.882	-20.164	-10.498	-15.635	-13.303	-28.718	-17.072	-12.301	-20.087	-10.436	-7.841	-4.876	-6.482	-8.992	-5.150	-12.630	-19.218	-11.214	-14.284	-20.594	-26.063	-22.873	-48.460
i_soln	86	-12.681	-19.809	-8.143	-13.632	-10.825	-24.363	-15.070	-9.094	-14.880	-9.551	-4.762	-2.766	-4.667	-4.191	-2.561	-12.880	-17.479	-11.429	-10.715	-20.239	-24.924	-16.165	-51.780
i_soln	87	-14.630	-20.151	-9.685	-14.823	-12.944	-27.105	-16.260	-10.709	-17.695	-10.237	-6.389	-4.557	-6.015	-7.046	-4.034	-12.873	-18.685	-11.218	-12.692	-20.206	-25.279	-19.697	-49.992
i_soln	88	-14.566	-20.153	-9.687	-14.823	-12.998	-27.107	-16.261	-10.789	-17.775	-10.061	-6.468	-4.539	-5.971	-7.117	-4.034	-12.696	-18.685	-11.218	-12.692	-20.206	-25.279	-19.697	-50.043
i_soln	89	-14.084	-20.336	-9.670	-14.627	-13.206	-26.890	-16.065	-10.991	-17.777	-10.058	-6.687	-4.540	-5.936	-7.067	-3.839	-11.786	-17.901	-11.223	-12.301	-20.119	-25.097	-18.923	-50.371
i_soln	90	-14.592	-20.745	-11.879	-15.898	-16.199	-30.899	-16.831	-11.502	-20.088	-8.314	-7.422	-7.493	-8.214	-13.709	-5.708	-10.041	-19.154	-11.214	-15.884	-20.993	-26.862	-26.072	-47.814
i_soln	91	-11.572	-20.446	-7.980	-12.576	-11.758	-23.400	-13.365	-8.504	-13.490	-9.026	-4.391	-3.066	-4.522	-4.701	-2.132	-10.225	-15.515	-12.270	-10.797	-22.362	-27.488	-18.010	-54.060
i_soln	92	-11.992	-20.337	-8.671	-13.618	-12.425	-24.891	-15.055	-10.583	-16.369	-10.336	-6.250	-3.653	-4.757	-5.431	-3.143	-12.422	-17.220	-11.428	-10.712	-20.235	-24.918	-16.155	-52.324
i_soln	93	-15.351	-20.619	-11.352	-16.017	-15.348	-29.973	-17.455	-12.682	-20.868	-10.355	-8.307	-6.323	-7.366	-11.559	-5.523	-12.692	-19.828	-11.214	-15.084	-20.793	-26.462	-24.472	-48.511
i_soln	94	-15.398	-20.622	-11.556	-16.219	-15.505	-30.376	-17.657	-12.884	-21.270	-10.235	-8.506	-6.724	-7.894	-12.318	-5.726	-12.321	-19.776	-11.214	-15.484	-20.893	-26.662	-25.272	-48.165
i_soln	95	-12.750	-20.668	-12.402	-16.749	-17.119	-32.022	-17.791	-12.404	-21.590	-8.892	-8.317	-8.583	-8.541	-18.791	-6.553	-11.365	-20.684	-11.214	-17.084	-21.294	-27.463	-28.473	-47.396
i_soln	96	-15.398	-20.628	-11.962	-16.623	-16.262	-31.182	-18.062	-13.045	-21.831	-9.395	-8.786	-7.299	-8.378	-13.932	-6.128	-12.022	-20.296	-11.214	-16.284	-21.093	-27.063	-26.872	-47.790
i_soln	97	-14.782	-20.648	-12.182	-16.836	-16.846	-31.602	-17.799	-12.656	-21.642	-9.350	-8.571	-8.068	-8.829	-15.445	-6.340	-11.530	-20.480	-11.214	-16.684	-21.193	-27.263	-27.673	-47.661
i_soln	98	-14.871	-20.656	-11.990	-16.641	-16.686	-31.210	-17.604	-12.431	-21.217	-9.176	-8.349	-7.815	-8.523	-14.566	-6.145	-11.222	-20.056	-11.214	-16.284	-21.093	-27.063	-26.872	-47.983
i_soln	99	-11.325	-20.950	-7.684	-11.475	-13.156	-22.304	-11.862	-8.850	-13.036	-8.901	-4.415	-2.653	-3.703	-4.445	-1.816	-10.037	-14.733	-13.457	-11.571	-25.523	-31.436	-21.932	-57.958
i_soln	100	-14.799	-20.769	-12.703	-16.713	-16.529	-32.523	-17.807	-13.173	-22.559	-8.057	-9.086	-8.027	-8.523	-16.737	-6.830	-9.312	-19.294	-11.214	-17.485	-21.394	-27.664	-29.274	-46.104

state	soln	si_VCl3	si_VF4	si_Vmetal	si_VO	si_VO(OH)2	si_VO2Cl	si_VOCl	si_VOCl2	si_VOSO4	si_Witherite	si_Zincite	si_Zincosite	si_Zn(BO2)2	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zn2(OH)2SO4	si_Zn2(OH)3Cl	si_Zn3(AsO4)2:2.5H2O	si_Zn3O(SO4)2	si_Zn4(OH)6SO4
i_soln	51	-55.002	-63.954	-78.166	-28.497	-4.187	-17.924	-24.036	-30.483	-18.829	-6.007	-4.373	-13.152	-10.193	-5.239	-5.513	-4.793	-4.573	-4.773	-9.761	-10.612	-16.036	-30.396	-16.739
i_soln	52	-52.795	-67.058	-76.301	-27.932	-4.923	-18.545	-23.357	-29.690	-18.371	-7.257	-5.715	-13.299	-11.590	-6.581	-6.855	-6.135	-5.915	-6.115	-11.250	-12.531	-19.243	-32.033	-20.911
i_soln	53	-52.848	-65.715	-75.549	-27.680	-5.170	-19.061	-23.373	-29.974	-18.088	-7.877	-6.350	-13.405	-12.170	-7.216	-7.490	-6.770	-6.550	-6.750	-11.992	-13.821	-20.626	-32.880	-22.924
i_soln	54	-66.542	-70.289	-91.523	-37.454	-8.745	-21.875	-32.387	-38.228	-27.843	-2.583	-1.099	-14.334	-7.566	-1.965	-2.239	-1.519	-1.299	-1.499	-7.669	-5.658	-14.195	-29.486	-8.098
i_soln	55	-75.110	-77.582	-98.876	-42.607	-11.698	-25.233	-37.946	-44.191	-33.068	-1.415	0.040	-15.466	-7.000	-0.826	-1.100	-0.380	-0.160	-0.360	-7.662	-4.885	-15.089	-30.612	-5.814
i_soln	56	-79.246	-81.358	-102.342	-45.073	-13.163	-26.923	-40.635	-47.104	-35.621	-1.048	0.079	-16.516	-7.823	-0.788	-1.062	-0.342	-0.122	-0.322	-8.674	-5.532	-15.430	-32.673	-6.749
i_soln	57	-52.869	-65.834	-75.549	-27.680	-5.170	-19.068	-23.380	-29.988	-19.310	-8.387	-6.691	-14.968	-13.157	-7.557	-7.831	-7.111	-6.891	-7.091	-13.895	-14.509	-21.641	-36.346	-25.509
i_soln	58	-50.856	-66.685	-74.048	-27.179	-5.670	-19.397	-22.709	-29.147	-18.306	-9.020	-7.386	-14.159	-13.547	-8.252	-8.526	-7.806	-7.586	-7.786	-13.782	-15.229	-22.764	-35.425	-26.786
i_soln	59	-50.154	-66.715	-73.448	-26.979	-5.870	-19.563	-22.475	-28.878	-18.148	-9.299	-7.575	-13.990	-13.510	-8.441	-8.715	-7.995	-7.775	-7.975	-13.801	-15.372	-23.051	-35.275	-27.183
i_soln	60	-64.133	-65.922	-84.079	-32.410	-6.100	-20.910	-29.022	-36.541	-22.307	-5.237	-2.872	-13.214	-9.821	-3.738	-4.012	-3.292	-3.072	-3.272	-8.322	-9.682	-14.950	-29.021	-12.298
i_soln	61	-59.960	-61.890	-79.935	-29.666	-4.757	-19.556	-26.268	-33.778	-19.864	-6.086	-4.382	-13.626	-11.325	-5.248	-5.522	-4.802	-4.582	-4.782	-10.245	-11.994	-17.384	-31.355	-17.242
i_soln	62	-53.842	-61.580	-75.248	-27.579	-5.270	-19.592	-23.704	-30.737	-17.714	-8.265	-7.044	-13.625	-13.659	-7.910	-8.184	-7.464	-7.244	-7.444	-12.906	-15.540	-22.509	-34.015	-25.226
i_soln	63	-51.565	-57.930	-73.149	-26.880	-5.970	-20.233	-22.945	-29.919	-16.401	-9.531	-8.102	-12.670	-14.614	-8.968	-9.242	-8.522	-8.302	-8.502	-13.008	-16.897	-24.599	-33.162	-27.445
i_soln	64	-59.233	-62.336	-81.075	-30.406	-5.096	-19.273	-26.386	-33.273	-21.992	-5.593	-3.942	-14.974	-10.244	-4.808	-5.082	-4.362	-4.142	-4.342	-11.152	-10.690	-16.572	-33.610	-17.267
i_soln	65	-64.370	-65.838	-85.273	-33.204	-6.495	-20.985	-29.497	-36.697	-24.483	-4.432	-2.356	-14.481	-8.597	-3.222	-3.496	-2.776	-2.556	-2.756	-9.074	-8.532	-14.005	-31.039	-12.019
i_soln	66	-71.148	-69.757	-92.130	-37.861	-8.951	-23.415	-34.127	-41.301	-28.323	-2.680	0.050	-13.459	-5.528	-0.816	-1.090	-0.370	-0.150	-0.350	-5.645	-4.793	-10.061	-26.588	-3.778
i_soln	67	-75.677	-76.852	-97.472	-41.603	-11.093	-25.286	-37.598	-44.501	-32.305	-1.783	0.004	-15.344	-7.024	-0.862	-1.136	-0.416	-0.196	-0.396	-7.577	-5.415	-13.728	-30.405	-5.801
i_soln	68	-77.346	-78.938	-99.548	-43.079	-11.970	-26.027	-38.939	-45.706	-33.488	-1.619	0.351	-15.304	-7.281	-0.515	-0.789	-0.069	0.151	-0.049	-7.189	-4.885	-13.915	-29.977	-4.719
i_soln	69	-51.098	-65.241	-73.598	-27.029	-5.820	-19.777	-22.789	-29.457	-18.297	-9.853	-7.927	-14.541	-13.887	-8.793	-9.067	-8.347	-8.127	-8.327	-14.705	-16.391	-24.153	-36.730	-28.790
i_soln	70	-50.872	-63.695	-72.849	-26.780	-6.070	-20.202	-22.714	-29.557	-17.515	-10.323	-8.862	-14.444	-15.241	-9.728	-10.002	-9.282	-9.062	-9.262	-15.542	-18.186	-26.865	-37.469	-31.499
i_soln	71	-51.401	-62.274	-73.148	-26.879	-5.970	-20.179	-22.891	-29.810	-17.703	-10.328	-8.737	-14.607	-15.250	-9.603	-9.877	-9.157	-8.937	-9.137	-15.581	-18.113	-26.465	-37.672	-31.288
i_soln	72	-70.898	-72.150	-92.773	-38.304	-9.195	-23.361	-34.273	-41.149	-29.612	-2.526	-0.727	-15.281	-7.215	-1.593	-1.867	-1.147	-0.927	-1.127	-8.244	-6.150	-13.720	-31.009	-7.931
i_soln	73	-75.219	-76.670	-96.788	-41.119	-10.810	-25.078	-37.190	-44.169	-31.734	-2.027	-0.208	-15.269	-7.134	-1.074	-1.348	-0.628	-0.408	-0.608	-7.713	-5.813	-14.565	-30.466	-6.361
i_soln	74	-76.378	-77.539	-98.157	-42.088	-11.379	-25.577	-38.089	-44.997	-32.857	-1.824	-0.188	-15.803	-7.374	-1.054	-1.328	-0.608	-0.388	-0.588	-8.227	-5.902	-15.304	-31.513	-6.834
i_soln	75	-73.733	-74.144	-96.133	-40.664	-10.554	-24.546	-36.458	-43.159	-30.785	-1.664	0.111	-14.257	-6.325	-0.755	-1.029	-0.309	-0.089	-0.289	-6.383	-4.799	-13.268	-28.123	-4.393
i_soln	76	-73.732	-73.666	-96.144	-40.675	-10.565	-24.553	-36.465	-43.162	-30.570	-1.826	0.301	-13.840	-5.357	-0.565	-0.839	-0.119	0.101	-0.099	-5.775	-4.414	-12.723	-27.099	-3.405
i_soln	77	-77.329	-77.555	-99.561	-43.092	-11.982	-26.030	-38.942	-45.699	-33.273	-1.334	0.615	-14.813	-5.914	-0.252	-0.526	0.195	0.415	0.215	-6.434	-4.348	-13.754	-28.731	-3.438
i_soln	78	-76.204	-77.302	-98.871	-42.602	-11.693	-25.595	-38.307	-44.919	-32.724	-1.549	0.331	-14.837	-6.542	-0.535	-0.809	-0.089	0.131	-0.069	-6.742	-4.670	-13.250	-29.062	-4.312
i_soln	79	-51.507	-64.879	-73.898	-27.129	-5.720	-19.714	-22.926	-29.631	-18.294	-9.770	-7.761	-14.472	-13.955	-8.627	-8.901	-8.181	-7.961	-8.161	-14.469	-16.196	-23.797	-36.425	-28.223
i_soln	80	-51.737	-64.340	-74.048	-27.179	-5.670	-19.691	-23.003	-29.734	-18.027	-9.600	-7.652	-14.145	-13.845	-8.518	-8.792	-8.072	-7.852	-8.052	-14.034	-16.054	-23.553	-35.663	-27.569
i_soln	81	-53.698	-64.357	-75.549	-27.680	-5.170	-19.345	-23.657	-30.541	-19.273	-8.613	-6.867	-15.106	-13.333	-7.733	-8.007	-7.287	-7.067	-7.267	-14.209	-15.137	-22.160	-36.799	-26.174
i_soln	82	-53.908	-64.861	-76.150	-27.881	-4.972	-19.016	-23.728	-30.482	-19.479	-7.799	-6.026	-14.670	-12.039	-6.892	-7.166	-6.446	-6.226	-6.426	-12.932	-13.525	-20.051	-35.086	-23.216
i_soln	83	-52.266	-65.231	-74.648	-27.379	-5.470	-19.467	-23.179	-29.886	-18.708	-8.827	-7.159	-14.534	-13.289	-8.025	-8.299	-7.579	-7.359	-7.559	-13.930	-15.245	-22.444	-35.947	-26.480
i_soln	84	-53.461	-64.506	-75.549	-27.680	-5.170	-19.265	-23.577	-30.383	-18.978	-8.740	-6.783	-14.728	-13.205	-7.649	-7.923	-7.203	-6.983	-7.183	-13.748	-14.891	-21.912	-35.960	-25.546
i_soln	85	-52.200	-66.657	-75.248	-27.579	-5.270	-19.045	-23.157	-29.642	-18.770	-8.088	-6.502	-14.139	-12.343	-7.368	-7.642	-6.922	-6.702	-6.902	-12.877	-13.908	-20.080	-34.499	-24.112
i_soln	86	-55.572	-64.181	-78.464	-28.795	-4.485	-18.312	-24.424	-30.962	-20.103	-6.175	-4.558	-14.313	-10.720	-5.424	-5.698	-4.978	-4.758	-4.958	-11.107	-11.073	-17.177	-32.904	-18.455
i_soln	87	-53.895	-65.383	-76.453	-27.984	-4.874	-18.813	-23.725	-30.374	-19.289	-7.565	-5.896	-14.448	-11.937	-6.762	-7.036	-6.316	-6.096	-6.296	-12.580	-13.260	-19.873	-34.512	-22.604
i_soln	88	-53.972	-65.251	-76.453	-27.984	-4.874	-18.838	-23.750	-30.425	-19.112	-7.482	-5.852	-14.227	-11.893	-6.718	-6.992	-6.272	-6.052	-6.252	-12.315	-13.197	-19.740	-34.025	-22.250
i_soln	89	-54.312	-64.225	-76.757	-28.088	-4.778	-18.754	-23.866	-30.553	-18.908	-7.345	-5.799	-14.066	-11.813	-6.665	-6.939	-6.219	-5.999	-6.199	-12.102	-13.204	-19.794	-33.651	-21.932
i_soln	90	-51.830	-61.715	-74.048	-27.179	-5.670	-19.722	-23.034	-29.796	-17.025	-9.137	-7.854	-13.346	-14.233	-8.720	-8.994	-8.274	-8.054	-8.254	-13.437	-16.490	-24.186	-34.267	-27.377
i_soln	91	-57.972	-62.730	-80.505	-30.036	-4.926	-18.873	-25.785	-32.442	-20.073	-5.487	-4.194	-13.477	-10.575	-5.060	-5.334	-4.614	-4.394	-4.594	-9.907	-10.864	-17.103	-30.868	-16.527
i_soln	92	-56.389	-61.746	-78.462	-28.793	-4.483	-18.584	-24.696	-31.506	-19.901	-6.253	-4.650	-14.204	-10.514	-5.516	-5.790	-5.070	-4.850	-5.050	-11.090	-11.529	-17.440	-32.777	-18.621
i_soln	93	-52.576	-64.085	-74.648	-27.379	-5.470	-19.570	-23.282	-30.093	-18.507	-8.941	-7.300	-14.474	-13.399	-8.166	-8.440	-7.720	-7.500	-7.700	-14.010	-15.630	-22.863	-35.968	-26.842
i_soln	94	-52.207	-63.874	-74.348	-27.279	-5.570	-19.647	-23.159	-29.947	-18.285	-9.150	-7.832	-14.684	-13.873	-8.698	-8.972	-8.252	-8.032	-8.232	-14.752	-16.570	-24.270	-36.920	-28.648
i_soln	95	-51.653	-57.286	-73.149	-26.880	-5.970	-20.263	-22.975	-29.978	-17.113	-9.881	-8.187	-13.467	-14.858	-9.053	-9.327	-8.607	-8.387	-8.587	-13.890	-17.096	-24.821	-34.840	-28.496
i_soln	96	-51.945	-63.261	-73.748	-27.079	-5.770	-19.960	-23.072	-29.972	-17.785	-9.560	-8.197	-14.349	-14.497	-9.063	-9.337	-8.617	-8.397	-8.597	-14.782	-17.213	-25.028	-36.615	-29.408
i_soln	97	-51.901	-61.690	-73.448	-26.979	-5.870	-20.145	-23.057	-30.043	-17.383	-9.824	-8.474	-14.124	-14.940	-9.340	-9.614	-8.894	-8.674	-8.874	-14.834	-17.753	-25.740	-36.442	-30.014
i_soln	98	-52.234	-62.153	-73.748	-27.079	-5.770	-20.056	-23.168	-30.165	-17.401	-9.637	-8.165	-13.934	-14.703	-9.031	-9.305	-8.585	-8.365	-8.565	-14.335	-17.246	-24.939	-35.753	-28.898
i_soln	99	-62.625	-63.614	-82.892	-31.623	-5.713	-20.415	-28.128	-35.540	-21.130	-4.427	-3.698	-13.252	-9.965	-4.564	-4.838	-4.118	-3.898	-4.098	-9.186	-11.027	-16.869	-29.921	-14.813
i_soln	100	-49.865	-60.880	-72.849	-26.780	-6.070	-19.867	-22.379	-28.886	-16.549	-9.931	-8.170	-12.786	-14.549	-9.036	-9.310	-8.590	-8.370	-8.570	-13.193	-16.467	-24.807	-33.462	-27.765

state	soln	si_Zn5(OH)8Cl2	si_ZnCl2	si_ZnCO3:1H2O	si_ZnF2	si_Znmetal	si_ZnO(active)	si_ZnSO4:1H2O
i_soln	51	-22.381	-18.775	-4.224	-17.498	-39.228	-4.227	-8.584
i_soln	52	-27.560	-18.588	-5.391	-20.024	-39.269	-5.569	-8.731
i_soln	53	-30.775	-19.261	-5.999	-19.865	-39.405	-6.205	-8.837
i_soln	54	-9.198	-18.689	-1.818	-15.113	-40.353	-0.953	-9.766
i_soln	55	-6.513	-20.560	-1.767	-16.144	-41.414	0.186	-10.899
i_soln	56	-7.769	-21.969	-2.216	-17.261	-42.376	0.224	-11.948
i_soln	57	-32.494	-19.616	-6.516	-20.265	-39.746	-6.545	-10.400
i_soln	58	-34.627	-18.969	-7.185	-21.136	-39.441	-7.240	-9.592
i_soln	59	-35.104	-18.690	-7.369	-21.240	-39.230	-7.429	-9.422
i_soln	60	-19.019	-21.419	-3.586	-16.024	-39.726	-2.726	-8.647
i_soln	61	-25.154	-21.510	-4.560	-16.191	-39.837	-4.237	-9.058
i_soln	62	-34.908	-20.618	-6.861	-18.441	-39.899	-6.899	-9.058
i_soln	63	-38.680	-20.158	-7.895	-17.324	-39.557	-7.957	-8.102
i_soln	64	-22.105	-20.225	-3.944	-15.804	-39.796	-3.796	-10.406
i_soln	65	-16.205	-20.665	-2.841	-15.270	-39.611	-2.211	-9.914
i_soln	66	-6.321	-20.406	-1.312	-13.595	-39.405	0.195	-8.891
i_soln	67	-7.609	-21.511	-1.620	-16.118	-41.051	0.150	-10.777
i_soln	68	-6.202	-21.492	-1.574	-16.375	-41.304	0.497	-10.736
i_soln	69	-37.493	-19.671	-7.722	-20.879	-39.682	-7.781	-9.974
i_soln	70	-42.019	-20.456	-8.955	-20.917	-40.117	-8.717	-9.876
i_soln	71	-41.747	-20.684	-8.831	-20.131	-40.192	-8.592	-10.040
i_soln	72	-9.811	-20.788	-1.677	-15.447	-40.382	-0.582	-10.713
i_soln	73	-8.618	-21.673	-1.863	-16.380	-41.062	-0.062	-10.701
i_soln	74	-8.776	-21.912	-2.066	-16.510	-41.442	-0.042	-11.235
i_soln	75	-6.272	-20.601	-1.228	-14.926	-40.544	0.256	-9.689
i_soln	76	-5.312	-20.402	-1.092	-14.491	-40.353	0.447	-9.272
i_soln	77	-4.865	-21.209	-1.293	-15.414	-41.040	0.760	-10.245
i_soln	78	-5.792	-21.002	-1.538	-15.716	-41.124	0.477	-10.269
i_soln	79	-36.936	-19.778	-7.859	-20.582	-39.716	-7.615	-9.904
i_soln	80	-36.544	-19.822	-7.752	-20.229	-39.707	-7.506	-9.578
i_soln	81	-33.925	-20.344	-6.691	-19.702	-39.921	-6.721	-10.538
i_soln	82	-29.859	-19.642	-5.871	-19.213	-39.480	-5.880	-10.102
i_soln	83	-34.434	-19.682	-6.965	-20.282	-39.614	-7.014	-9.966
i_soln	84	-33.349	-20.102	-6.908	-19.693	-39.838	-6.638	-10.160
i_soln	85	-31.101	-18.981	-6.222	-20.437	-39.356	-6.356	-9.571
i_soln	86	-23.487	-19.141	-4.407	-17.648	-39.413	-4.412	-9.745
i_soln	87	-29.200	-19.502	-5.755	-19.392	-39.551	-5.750	-9.880
i_soln	88	-29.030	-19.509	-5.711	-19.282	-39.506	-5.706	-9.659
i_soln	89	-28.992	-19.680	-5.676	-18.765	-39.654	-5.654	-9.498
i_soln	90	-37.617	-20.087	-7.954	-19.119	-39.909	-7.709	-8.779
i_soln	91	-22.705	-19.816	-4.262	-16.338	-39.848	-4.048	-8.909
i_soln	92	-24.491	-19.778	-4.497	-16.523	-39.504	-4.504	-9.636
i_soln	93	-35.343	-20.029	-7.106	-19.850	-39.755	-7.154	-9.907
i_soln	94	-37.757	-20.316	-7.634	-20.226	-40.086	-7.686	-10.116
i_soln	95	-39.163	-20.301	-8.281	-17.087	-39.642	-8.041	-8.899
i_soln	96	-39.407	-20.505	-8.118	-20.185	-40.051	-8.051	-9.782
i_soln	97	-40.763	-20.754	-8.569	-19.626	-40.128	-8.328	-9.557
i_soln	98	-39.442	-20.667	-8.263	-19.599	-40.020	-8.020	-9.366
i_soln	99	-22.536	-21.631	-3.443	-15.890	-40.152	-3.552	-8.684
i_soln	100	-37.888	-19.092	-8.263	-18.818	-39.425	-8.025	-8.218

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Al(OH)3(am)	si_Al2O3	si_Al4(OH)10SO4	si_AlAsO4:2H2O	si_AlOHSO4	si_Alunite	si_Anglesite
i_soln	101	4.2	4	-7.6E-05	6.6E-03	1	6.07E-14	7.61E-10	2.13E-03	5.12E-05	6.99E-04	3.09E-04	5.76E-04	1.88E-03	9.99E-06	5.27E-06	1.07E-06	1.57E-08	0.00E+00	0.00E+00	1.17E-06	-4.411	-6.873	-8.462	-8.904	-1.700	-2.203	-3.753
i_soln	102	5.2	4	1.2E-04	8.4E-04	1	-1.87E-18	-1.59E-13	1.30E-04	2.56E-05	2.50E-05	4.11E-05	5.51E-04	2.08E-05	2.00E-05	5.26E-06	3.87E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	0.102	2.152	5.706	-4.757	-1.071	4.294	-4.921
i_soln	103	5	4	1.9E-05	8.0E-04	1	7.12E-15	6.20E-10	3.04E-04	2.56E-05	2.50E-05	4.11E-05	3.82E-04	1.04E-04	9.99E-06	5.26E-06	6.09E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.800	0.349	3.229	-5.460	-0.843	3.648	-4.677
i_soln	104	5.2	4	3.3E-05	1.0E-03	1	5.85E-19	3.59E-14	5.65E-04	2.56E-05	2.50E-05	4.11E-05	5.76E-04	1.25E-04	2.00E-05	5.26E-06	5.19E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.428	1.091	4.397	-5.290	-0.788	4.327	-4.607
react	1001	4.7	4	3.3E-05	1.2E-03	1	1.09E-16	7.16E-12	1.74E-04	5.12E-05	2.50E-05	4.11E-05	7.03E-04	4.16E-05	3.00E-05	5.26E-06	3.21E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.988	-0.029	2.562	-5.387	-0.944	3.257	-4.715
react	1002	4.8	4	3.4E-05	1.0E-03	1	-1.10E-20	-7.69E-16	2.61E-04	2.56E-05	2.50E-05	4.11E-05	5.97E-04	7.29E-05	2.00E-05	5.26E-06	1.83E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.858	0.232	3.169	-5.335	-0.728	3.618	-4.431
react	1003	5	4	3.1E-05	6.3E-04	1	8.19E-14	9.10E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.11E-04	2.08E-05	2.00E-05	5.26E-06	1.74E-05	1.73E-07	0.00E+00	0.00E+00	3.09E-07	-0.659	0.631	3.088	-5.318	-1.407	2.663	-5.364
react	1004	5.1	4	7.6E-05	7.4E-04	1	4.04E-13	3.90E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.81E-04	2.08E-05	2.00E-05	5.26E-06	2.04E-05	3.15E-08	0.00E+00	0.00E+00	3.09E-07	-0.204	1.541	4.688	-4.962	-1.172	3.688	-5.389
react	1005	4.7	4	1.8E-05	1.1E-03	1	5.02E-17	3.36E-12	1.74E-04	5.12E-05	2.50E-05	4.11E-05	6.65E-04	5.20E-05	2.00E-05	5.26E-06	6.43E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-1.128	-0.307	2.133	-5.526	-0.955	3.096	-4.587
react	1006	4.5	4	-2.0E-05	8.8E-04	1	3.55E-17	2.79E-12	2.17E-04	5.12E-05	2.50E-05	4.11E-05	5.66E-04	4.16E-05	3.00E-05	5.26E-06	3.46E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-1.949	-1.951	-0.807	-6.254	-1.429	1.127	-4.506
react	1007	9.1	4	3.5E-04	8.3E-04	1	-1.08E-19	-9.23E-15	1.31E-04	2.56E-05	1.75E-04	4.11E-05	2.63E-04	2.08E-05	2.20E-04	1.05E-05	6.98E-06	1.57E-08	0.00E+00	0.00E+00	2.00E-07	-1.995	-2.042	-10.432	-12.933	-10.918	-13.598	-7.201
react	1008	9.1	4	3.8E-04	9.4E-04	1	-1.36E-15	-1.07E-10	8.70E-05	2.56E-05	2.25E-04	4.11E-05	2.62E-04	3.12E-05	2.50E-04	1.58E-05	8.24E-06	1.57E-08	0.00E+00	0.00E+00	2.37E-07	-2.056	-2.165	-10.509	-12.998	-10.811	-13.445	-7.057
react	1009	8.8	4	2.3E-04	3.1E-03	1	-2.47E-15	-7.31E-11	1.31E-04	2.56E-05	7.99E-04	4.11E-05	1.47E-04	7.29E-04	1.80E-04	2.63E-05	1.43E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.139	-2.331	-8.945	-12.534	-8.997	-10.213	-5.372
react	1010	8.1	4	2.6E-04	3.4E-03	1	-1.06E-16	-2.83E-12	1.31E-04	2.56E-05	7.74E-04	1.65E-04	3.28E-04	7.60E-04	1.60E-04	1.05E-05	6.63E-06	4.72E-08	0.00E+00	0.00E+00	3.64E-08	-0.941	0.066	-2.740	-9.960	-6.388	-4.497	-4.695
react	1011	7.4	4	2.2E-04	5.1E-03	1	2.83E-15	5.18E-11	3.92E-04	2.56E-05	1.75E-04	1.11E-03	2.62E-04	1.32E-03	6.00E-05	1.58E-05	1.59E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-0.037	1.874	2.493	-7.765	-3.867	0.742	-4.020
react	1012	4	4	-1.8E-04	4.9E-02	1	1.28E-15	2.48E-12	6.54E-04	7.69E-05	1.48E-02	3.51E-03	5.55E-03	1.61E-02	1.00E-05	5.28E-06	8.97E-07	3.15E-08	0.00E+00	0.00E+00	2.01E-06	-5.200	-8.452	-10.634	-10.012	-1.503	-2.679	-3.544
react	1013	7.8	4	4.3E-04	4.6E-02	1	-6.55E-18	-1.35E-14	3.92E-04	2.56E-05	1.43E-02	3.38E-03	3.68E-03	1.59E-02	4.21E-04	3.17E-05	8.97E-07	1.58E-08	0.00E+00	0.00E+00	1.82E-08	-2.129	-2.310	-5.944	-10.871	-6.026	-5.331	-3.848
react	1014	7.2	4	7.3E-04	5.0E-04	1	1.24E-15	1.56E-10	1.31E-04	5.12E-05	2.50E-05	4.11E-05	1.81E-04	2.08E-05	4.00E-05	5.26E-06	7.14E-05	3.15E-08	0.00E+00	0.00E+00	1.27E-07	0.804	3.556	4.585	-6.200	-4.298	0.847	-4.871
react	1015	8.3	4	8.8E-04	2.4E-03	1	5.60E-13	1.80E-08	8.70E-05	2.56E-05	6.99E-04	4.11E-05	5.94E-04	1.35E-04	6.30E-04	3.68E-05	4.48E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.678	0.592	-2.817	-10.069	-7.254	-5.761	-5.911
react	1016	6.3	4	2.3E-04	5.0E-04	1	8.73E-15	1.16E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.66E-04	3.12E-05	4.00E-05	5.26E-06	2.40E-05	1.57E-08	0.00E+00	0.00E+00	9.10E-08	1.030	4.008	7.464	-5.008	-2.097	4.273	-4.862
react	1017	4.9	4	2.4E-05	7.0E-04	1	3.42E-13	3.52E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.31E-04	3.12E-05	2.00E-05	5.26E-06	2.51E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.847	0.254	2.697	-5.411	-1.233	2.722	-4.905
react	1018	4.9	4	2.4E-05	8.0E-04	1	2.83E-14	2.44E-09	2.17E-04	2.56E-05	2.50E-05	4.11E-05	5.25E-04	3.12E-05	3.00E-05	5.26E-06	2.70E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.845	0.257	2.700	-5.410	-1.235	2.719	-4.737
react	1019	4.45	4	-3.4E-05	5.7E-04	1	6.77E-18	7.72E-13	1.96E-04	2.56E-05	2.50E-05	4.11E-05	3.68E-04	3.64E-05	9.99E-06	5.26E-06	4.30E-06	1.57E-08	0.00E+00	0.00E+00	2.18E-07	-2.781	-3.615	-4.031	-7.084	-2.158	-1.511	-5.092
react	1020	5.2	4	6.4E-05	5.4E-04	1	1.81E-15	2.33E-10	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.68E-04	1.04E-05	2.00E-05	5.26E-06	8.60E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.154	1.641	4.419	-5.010	-1.591	3.001	-5.649
react	1021	5.3	4	3.7E-05	4.7E-04	1	3.08E-13	4.50E-08	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.21E-04	1.04E-05	2.00E-05	5.26E-06	1.54E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.264	1.421	3.801	-5.220	-1.879	2.416	-5.623
react	1022	5.6	4	7.0E-05	4.5E-04	1	8.85E-14	1.30E-08	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.15E-04	1.04E-05	2.00E-05	5.26E-06	1.45E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	0.287	2.521	5.410	-4.979	-1.920	3.183	-5.617
react	1023	4.9	4	3.5E-05	8.5E-04	1	-1.45E-19	-1.20E-14	2.17E-04	2.56E-05	2.50E-05	4.11E-05	5.53E-04	3.12E-05	2.00E-05	5.26E-06	2.29E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-08	-0.733	0.482	3.134	-5.299	-1.138	3.025	-4.754
react	1024	4.6	4	-2.0E-05	6.9E-04	1	6.88E-17	6.32E-12	3.04E-04	2.56E-05	2.50E-05	4.11E-05	4.66E-04	4.16E-05	9.99E-06	5.26E-06	3.40E-06	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-2.173	-2.398	-1.850	-6.507	-1.802	-0.041	-5.050
react	1025	4.6	4	-2.2E-05	1.4E-03	1	3.52E-15	1.45E-10	9.79E-04	2.56E-05	2.50E-05	4.11E-05	1.05E-03	8.85E-05	9.99E-06	5.26E-06	2.87E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.258	-2.567	-1.879	-6.597	-1.577	0.319	-4.775
react	1026	4.4	4	-4.2E-05	2.1E-03	1	8.89E-16	2.49E-11	1.48E-03	2.56E-05	2.50E-05	8.23E-05	1.43E-03	1.77E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-6.141	-10.333	-16.712	-10.461	-4.761	-10.137	-4.506
react	1027	4.7	4	-1.7E-05	4.7E-04	1	6.01E-19	8.72E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.63E-04	4.16E-05	2.00E-05	5.26E-06	4.83E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-2.265	-2.583	-2.399	-6.658	-2.073	-0.575	-5.019
react	1028	4.2	4	-6.5E-05	1.3E-03	1	6.96E-15	3.38E-10	6.09E-04	2.56E-05	2.50E-05	1.23E-04	7.47E-04	1.46E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.09E-07	-3.990	-6.033	-7.786	-8.479	-2.285	-3.231	-4.553
react	1029	4.3	4	-5.2E-05	1.0E-03	1	1.61E-15	1.02E-10	4.78E-04	2.56E-05	2.50E-05	8.23E-05	5.86E-04	1.04E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-4.370	-6.793	-9.636	-8.749	-2.996	-4.929	-4.668
react	1030	5.5	4	1.4E-04	6.8E-04	1	-1.66E-19	-1.66E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.57E-04	2.08E-05	3.00E-05	5.26E-06	3.67E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	0.484	2.916	6.677	-4.681	-1.245	4.629	-4.873
react	1031	5	4	1.0E-04	1.1E-03	1	3.01E-20	1.94E-15	1.74E-04	5.12E-05	2.50E-05	4.11E-05	7.08E-04	4.16E-05	3.00E-05	5.26E-06	4.80E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-0.224	1.501	5.052	-4.887	-0.748	4.713	-4.560
react	1032	5.8	4	1.5E-04	7.8E-04	1	5.68E-19	4.82E-14	2.17E-04	2.56E-05	2.50E-05	4.11E-05	4.97E-04	4.16E-05	3.00E-05	5.26E-06	6.11E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.761	3.469	7.493	-4.419	-1.259	5.176	-4.354
react	1033	5.1	4	9.9E-05	8.4E-04	1	1.56E-18	1.32E-13	1.30E-04	2.56E-05	2.50E-05	4.11E-05	5.70E-04	1.04E-05	2.00E-05	5.26E-06	3.38E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	-0.100	1.748	4.783	-4.859	-1.387	3.360	-5.410
react	1034	5.3	4	1.8E-04	8.7E-04	1	-1.39E-18	-1.14E-13	8.70E-05	2.56E-05	2.50E-05	4.11E-05	5.87E-04	1.04E-05	3.00E-05	5.26E-06	5.62E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	0.383	2.714	6.330	-4.578	-1.290	4.236	-5.223
react	1035	4.7	4	2.1E-05	1.0E-03	1	2.15E-13	1.61E-08	1.31E-04	2.56E-05	2.50E-05	4.11E-05	6.19E-04	3.12E-05	2.00E-05	5.26E-06	5.73E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-08	-1.098	-0.248	2.027	-5.496	-1.150	2.435	-4.983
react	1036	4.9	4	1.3E-04	1.6E-03	1	7.51E-15	3.61E-10	1.74E-04	7.67E-05	2.50E-05	4.11E-05	1.01E-03	2.08E-05	2.00E-05	5.26E-06	6.61E-05	4.72E-08	0.00E+00	0.00E+00	3.64E-08	-0.260	1.427	4.726	-4.530	-0.963	4.319	-4.707
react	1037	4.9	4	6.4E-05	1.1E-03	1	8.97E-19	6.01E-14	2.17E-04	5.12E-05	2.50E-05	4.11E-05	7.12E-04	2.08E-05	2.00E-05	5.26E-06	2.88E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.523	0.901	3.755	-5.091	-1.146	3.518	-4.979
react	1038	6.5	4	1.4E-03	1.2E-03	1	2.89E-15	1.62E-10	2.61E-04	5.12E-05	7.49E-05	4.11E-05	5.25E-04	4.16E-05	7.99E-05	1.05E-05	1.16E-04	7.87E-08	0.00E+00	0.00E+00	7.46E-07	1.742	5.431	10.004	-4.553	-1.692	6.291	-4.163
react	1039	5.9	4	1.1E-03	2.1E-03	1	1.61E-15	4.97E-11	3.92E-04	7.67E-05	7.49E-05	4.11E-05	1.44E-03	6.25E-05	5.00E-05	1.05E-05	1.90E-04	1.42E-07	0.00E+00	0.00E+00	4.91E-07	1.691	5.329	11.132	-3.910	-0.410	8.374	-3.902
react	1040	5.3	4	1.8E-04	1.6E-03	1	1.01E-14	4.31E-10	5.66E-04	5.12E-05	2.50E-05	4.11E-05	8.80E-04	1.67E-04	4.00E-05	1.05E-05	6.72E-05	6.30E-08	0.00E+00	0.00E+00	3.64E-08	0.370	2.688	7.463	-4.296	-0.117	6.865	-3.652
react	1041	6	4	2.0E-04	5.8E-04	1	5.43E-16	6.05E-11	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.03E-04	1.04E-05	4.00E-05	5.26E-06	4.12E-05	1.57E-08	0.00E+00	0.00E+00	6.55E-07	0.969	3.885	7.334	-4.727	-2.042	4.021	-5.335
react	1042	6.8	4	4.2E-04	5.1E-04	1	6.66E-14	8.43E-09	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.67E-04	1.04E-05	4.00E-05	5.26E-06	6.20E-05	3.15E-08	0.00E+00	0.00E+00	5.10E-07	0.939	3.826	5.621	-5.750	-3.666	1.544	-5.210
react	1043	4.9	4	-5.5E-06	4.8E-04	1	6.31E-15	1.03E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	1.45E-04	8.33E-05	2.00E-05	5.26E-06	7.88E-06	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-1.598	-1.249	0.169	-6.160	-1.507	1.425	-4.725
react	1044	4.6	4	-2.5E-05	4.6E-04	1	1.32E-19	2.04E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	1.75E-04	7.29E-05	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.27E-07	-4.659	-7.371	-11.523	-8.992	-4.016	-6.954	-4.771
react	1045	4.6	4	-2.5E-05	4.4E-04	1	9.12E-21	1.42E-15	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.15E-04	5.20E-05	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-4.881	-7.814	-12.555	-9.213	-4.382	-7.908	-4.912
react	1046	5.5	4	8.5E-05	5.2E-04	1	6.64E-14	8.82E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.32E-04	2.08E-05	3.00E-05	5.26E-06	2.08E-05	1.57E-08	0.00E+00	0.00E+00	4.37E-07	0.273	2.495	5.849	-4.889	-1.441	4.027	-5.028

state	soln	si_Anhydrite	si_Antlerite	si_Aragonite	si_Arsenolite	si_Artinite	si_As2O5	si_Atacamite	si_Azurite	si_Ba(OH)2:8H2O	si_Ba2V2O7:2H2O	si_Ba3(AsO4)2	si_Ba3(VO4)2:4H2O	si_BaCrO4	si_BaF2	si_Barite	si_Be(OH)2(alpha)	si_Be(OH)2(am)	si_Be(OH)2(beta)	si_Bianchite	si_Birnessite	si_Bixbyite	si_Boehmite	si_Brochantite
i_soln	101	-1.942	-19.065	-8.367	-29.223	-21.929	-27.694	-14.173	-25.420	-21.569	-29.868	-3.603	-44.111	-36.035	-12.481	1.485	-5.516	-5.816	-5.116	-6.545	-24.796	-29.165	-2.188	-25.152
i_soln	102	-5.104	-15.574	-7.372	-38.686	-19.098	-28.425	-10.253	-17.499	-19.873	-22.474	0.755	-35.020	-28.479	-15.351	-0.702	-3.705	-4.005	-3.305	-8.682	-22.140	-25.854	2.324	-19.203
i_soln	103	-4.379	-16.546	-8.067	-36.291	-20.195	-28.027	-11.613	-20.180	-20.477	-24.482	-0.660	-37.632	-30.550	-14.967	-0.176	-4.045	-4.345	-3.645	-8.455	-23.244	-27.662	1.423	-20.875
i_soln	104	-4.305	-15.705	-7.386	-38.693	-19.123	-28.429	-10.864	-18.443	-20.120	-22.967	0.011	-35.761	-29.217	-14.588	-0.136	-3.715	-4.015	-3.315	-8.372	-22.454	-26.481	1.794	-19.648
react	1001	-4.897	-18.296	-8.186	-32.844	-20.922	-27.504	-12.276	-21.046	-20.792	-26.311	-1.080	-39.777	-31.894	-16.096	-0.403	-4.589	-4.889	-4.189	-8.282	-24.151	-28.876	1.234	-23.238
react	1002	-4.611	-17.601	-8.163	-33.958	-20.697	-27.661	-12.039	-20.792	-20.572	-25.471	-0.578	-38.717	-31.346	-15.734	-0.098	-4.404	-4.704	-4.004	-8.067	-24.050	-28.874	1.364	-22.339
react	1003	-5.072	-14.095	-7.754	-36.284	-19.873	-28.024	-9.475	-16.423	-20.372	-24.272	-0.341	-37.317	-30.130	-15.123	-0.776	-4.037	-4.337	-3.637	-8.698	-22.003	-25.180	1.564	-17.372
react	1004	-5.096	-15.953	-7.563	-37.482	-19.485	-28.223	-10.601	-18.071	-20.179	-23.485	0.040	-36.337	-29.447	-15.439	-0.803	-3.869	-4.169	-3.469	-8.821	-21.607	-24.588	2.019	-19.776
react	1005	-4.768	-18.164	-8.361	-32.842	-21.096	-27.503	-12.297	-21.393	-20.831	-26.391	-1.199	-39.896	-32.109	-15.857	-0.315	-4.588	-4.888	-4.188	-8.161	-23.974	-28.522	1.095	-23.104
react	1006	-4.814	-18.989	-8.574	-30.867	-21.703	-27.316	-12.947	-22.206	-21.238	-28.004	-2.231	-41.916	-33.524	-15.414	-0.374	-4.957	-5.257	-4.557	-8.332	-24.767	-29.707	0.273	-24.320
react	1007	-4.218	-7.562	-0.461	-94.201	-5.238	-40.583	-3.965	-5.188	-12.049	-9.532	12.069	-14.255	-5.735	-10.024	-0.629	-0.419	-0.719	-0.019	-10.140	-5.814	-1.000	0.227	-5.936
react	1008	-3.945	-7.449	-0.305	-94.216	-5.194	-40.590	-4.005	-5.139	-12.051	-9.542	12.055	-14.267	-5.737	-9.675	-0.461	-0.419	-0.719	-0.019	-10.087	-5.745	-0.864	0.166	-5.842
react	1009	-2.173	-5.936	-0.277	-89.627	-6.384	-39.496	-4.224	-5.218	-12.645	-9.778	11.369	-15.097	-7.160	-9.251	0.842	-0.412	-0.712	-0.012	-8.515	-8.131	-5.036	0.083	-4.457
react	1010	-2.179	-4.861	-1.032	-78.524	-7.323	-36.744	-3.400	-4.229	-13.999	-10.441	10.057	-17.114	-10.835	-10.012	0.898	-0.630	-0.930	-0.230	-8.237	-10.631	-8.636	1.281	-3.493
react	1011	-2.650	-7.038	-2.873	-67.759	-8.294	-34.162	-5.332	-7.530	-15.248	-11.334	8.895	-19.255	-14.767	-9.573	1.267	-1.159	-1.459	-0.759	-7.629	-13.170	-12.314	2.185	-6.936
react	1012	-0.313	-19.408	-7.723	-28.892	-21.157	-28.329	-13.922	-26.746	-22.101	-31.732	-5.827	-46.506	-38.216	-12.577	1.942	-6.338	-6.638	-5.938	-5.986	-25.701	-30.575	-2.978	-25.938
react	1013	-0.322	-6.529	-0.099	-75.013	-5.947	-36.189	-4.250	-6.196	-14.814	-11.593	8.174	-19.079	-12.841	-9.503	1.635	-0.866	-1.166	-0.466	-6.649	-12.537	-11.847	0.093	-6.234
react	1014	-5.021	-8.034	-3.945	-63.265	-11.659	-32.715	-5.087	-7.199	-15.822	-12.005	8.617	-20.501	-15.632	-10.597	-0.580	-1.316	-1.616	-0.916	-8.560	-13.583	-12.740	3.026	-7.840
react	1015	-2.910	-7.899	-0.235	-81.613	-7.252	-37.489	-4.611	-5.339	-13.743	-10.440	10.080	-16.857	-9.863	-9.051	0.025	-0.534	-0.834	-0.134	-8.696	-10.094	-7.960	1.544	-7.168
react	1016	-4.847	-11.854	-5.111	-52.201	-14.625	-30.783	-7.883	-11.724	-17.704	-14.449	4.902	-24.827	-21.706	-11.649	-0.488	-2.237	-2.537	-1.837	-8.618	-17.330	-18.433	3.252	-13.591
react	1017	-4.914	-17.468	-7.953	-35.106	-20.275	-27.835	-11.845	-20.149	-20.422	-24.772	-0.303	-37.869	-30.982	-15.196	-0.465	-4.215	-4.515	-3.815	-8.447	-23.336	-27.645	1.375	-21.989
react	1018	-4.921	-17.488	-7.780	-35.109	-20.106	-27.837	-11.772	-19.814	-20.343	-24.615	-0.069	-37.632	-30.907	-15.127	-0.389	-4.218	-4.518	-3.818	-8.394	-23.640	-28.254	1.377	-22.015
react	1019	-4.800	-19.139	-9.140	-30.458	-22.357	-27.311	-13.250	-23.412	-21.158	-28.044	-1.987	-41.876	-33.989	-13.907	-0.191	-5.047	-5.347	-4.647	-8.738	-24.353	-28.779	-0.559	-24.555
react	1020	-5.357	-16.696	-7.361	-38.674	-19.076	-28.419	-10.997	-18.356	-20.229	-23.185	-0.306	-36.088	-28.999	-15.189	-1.322	-3.698	-3.998	-3.298	-9.216	-22.429	-26.432	2.069	-20.610
react	1021	-5.332	-16.262	-7.165	-39.875	-18.677	-28.620	-10.748	-17.759	-20.219	-22.766	-0.478	-35.659	-28.324	-14.600	-1.490	-3.538	-3.838	-3.138	-9.560	-22.026	-25.825	1.958	-19.972
react	1022	-5.323	-15.060	-6.599	-43.511	-17.510	-29.237	-9.860	-16.034	-19.345	-19.826	1.527	-31.844	-26.495	-13.705	-1.208	-3.093	-3.393	-2.693	-9.245	-20.223	-22.820	2.509	-18.172
react	1023	-4.937	-16.606	-7.958	-35.111	-20.285	-27.838	-11.152	-19.269	-20.386	-24.700	-0.197	-37.759	-30.650	-15.392	-0.447	-4.218	-4.518	-3.818	-8.507	-23.642	-28.258	1.489	-20.835
react	1024	-4.757	-18.513	-8.847	-31.786	-21.769	-27.375	-12.713	-22.538	-21.043	-27.214	-1.706	-40.932	-33.114	-14.396	-0.328	-4.766	-5.066	-4.366	-8.883	-24.360	-29.093	0.049	-23.635
react	1025	-4.471	-18.317	-8.871	-31.805	-21.816	-27.384	-12.441	-22.652	-20.942	-27.011	-1.411	-40.627	-33.043	-14.172	0.083	-4.787	-5.087	-4.387	-8.238	-24.862	-30.098	-0.036	-23.477
react	1026	-4.192	-18.905	-9.288	-30.130	-22.049	-27.347	-12.968	-23.933	-21.117	-28.163	-1.900	-41.953	-34.314	-10.470	0.607	-5.381	-5.681	-4.981	-7.242	-25.206	-30.386	-3.919	-24.494
react	1027	-4.728	-18.053	-8.340	-32.821	-21.053	-27.493	-12.633	-21.301	-21.383	-27.493	-2.842	-41.550	-32.937	-14.202	-0.847	-4.577	-4.877	-4.177	-8.873	-24.428	-29.429	-0.043	-22.963
react	1028	-4.249	-19.673	-9.669	-29.202	-22.460	-27.683	-13.776	-25.023	-21.661	-30.052	-3.869	-44.387	-35.845	-13.138	0.388	-5.565	-5.865	-5.165	-7.523	-25.685	-30.944	-1.768	-25.627
react	1029	-4.368	-19.360	-9.458	-29.562	-22.391	-27.463	-13.550	-24.381	-21.482	-29.293	-3.111	-43.449	-35.127	-12.132	0.236	-5.391	-5.691	-4.991	-7.824	-25.450	-30.673	-2.148	-25.099
react	1030	-5.055	-15.217	-6.619	-42.306	-17.740	-29.035	-10.024	-16.290	-19.376	-20.285	1.634	-32.335	-26.707	-14.446	-0.761	-3.238	-3.538	-2.838	-8.594	-20.633	-23.440	2.706	-18.541
react	1031	-4.865	-17.067	-7.595	-36.302	-19.731	-28.033	-11.374	-19.266	-20.183	-23.893	0.217	-36.750	-29.783	-15.818	-0.363	-4.050	-4.350	-3.650	-8.192	-22.650	-26.473	1.999	-21.409
react	1032	-4.751	-13.737	-6.076	-44.768	-16.601	-29.066	-9.108	-14.623	-18.625	-17.612	3.857	-28.911	-24.556	-13.193	-0.301	-2.830	-3.130	-2.430	-8.302	-20.041	-22.855	2.983	-16.471
react	1033	-5.418	-16.287	-7.565	-37.486	-19.491	-28.225	-10.538	-18.086	-20.292	-23.712	-0.302	-36.678	-29.563	-15.762	-1.235	-3.871	-4.171	-3.471	-9.213	-22.540	-26.453	2.122	-20.115
react	1034	-5.405	-15.481	-7.004	-39.892	-18.531	-28.628	-9.929	-16.568	-19.918	-22.164	0.417	-34.756	-28.037	-15.561	-1.248	-3.545	-3.845	-3.145	-9.205	-21.741	-25.255	2.605	-18.911
react	1035	-4.989	-17.472	-8.357	-32.840	-21.089	-27.502	-11.716	-20.476	-21.045	-26.818	-1.838	-40.537	-32.142	-16.125	-0.753	-4.585	-4.885	-4.185	-8.687	-24.447	-29.468	1.125	-22.106
react	1036	-5.254	-16.465	-7.977	-33.928	-20.323	-27.246	-10.601	-18.830	-20.284	-24.495	0.701	-37.453	-30.170	-16.263	-0.642	-4.234	-4.534	-3.834	-8.437	-23.362	-27.698	1.962	-20.547
react	1037	-5.161	-17.756	-7.964	-35.118	-20.297	-27.841	-11.664	-20.201	-20.367	-24.663	-0.145	-37.704	-30.637	-15.800	-0.646	-4.223	-4.523	-3.823	-8.556	-23.649	-28.271	1.699	-22.295
react	1038	-4.299	-9.010	-4.066	-54.829	-13.680	-31.297	-5.693	-8.192	-16.651	-11.808	7.548	-21.133	-18.771	-10.705	0.260	-2.026	-2.326	-1.626	-7.974	-15.641	-15.455	3.964	-9.696
react	1039	-4.188	-10.530	-5.238	-47.249	-16.074	-29.907	-6.564	-10.946	-17.709	-14.813	5.764	-25.196	-22.333	-13.088	0.534	-2.713	-3.013	-2.313	-7.655	-18.247	-19.467	3.913	-12.168
react	1040	-4.247	-13.493	-6.908	-38.711	-18.460	-28.038	-9.225	-15.518	-19.311	-20.951	2.827	-32.936	-27.459	-14.376	0.546	-3.563	-3.863	-3.163	-7.515	-21.770	-25.312	2.592	-16.657
react	1041	-5.332	-13.510	-5.594	-48.432	-15.711	-30.098	-8.585	-13.261	-18.342	-16.339	3.676	-27.355	-23.359	-12.694	-1.008	-2.578	-2.878	-2.178	-9.177	-17.675	-18.523	3.191	-15.838
react	1042	-5.324	-9.604	-4.417	-58.803	-12.931	-32.084	-5.896	-8.611	-16.659	-12.878	6.739	-22.211	-18.263	-10.719	-0.920	-1.710	-2.010	-1.310	-9.231	-14.581	-13.935	3.161	-10.098
react	1043	-4.432	-16.956	-7.949	-35.096	-20.265	-27.830	-12.294	-20.115	-20.571	-25.070	-0.746	-38.315	-31.128	-13.910	-0.136	-4.215	-4.515	-3.815	-8.586	-23.029	-27.031	0.624	-21.467
react	1044	-4.478	-18.201	-8.540	-31.778	-21.455	-27.371	-13.110	-21.897	-21.139	-27.406	-1.990	-41.219	-33.222	-11.219	-0.151	-4.905	-5.205	-4.505	-8.422	-23.984	-28.342	-2.437	-23.310
react	1045	-4.620	-18.341	-8.537	-31.777	-21.450	-27.371	-13.016	-21.892	-21.102	-27.332	-1.878	-41.107	-33.183	-11.052	-0.259	-4.924	-5.224	-4.524	-8.547	-24.827	-30.028	-2.659	-23.449
react	1046	-5.035	-15.176	-6.613	-42.299	-17.727	-29.031	-10.143	-16.263	-19.473	-20.478	1.348	-32.625	-27.099	-14.143	-0.844	-3.236	-3.536	-2.836	-8.903	-19.849	-21.871	2.495	-18.491

state	soln	si_Brucite	si_Bunsenite	si_Ca(VO3)2	si_Ca2V2O7	si_Ca2V2O7:2H2O	si_Ca3(AsO4)2:4H2O	si_Ca3(VO4)2	si_Ca3(VO4)2:4H2O	si_CaCrO4	si_Calcite	si_Cd(BO2)2	si_Cd(OH)2	si_Cd(OH)2(am)	si_Cd3(OH)2(SO4)2	si_Cd3(OH)4SO4	si_Cd4(OH)6SO4	si_CdCl2	si_CdCl2:1H2O	si_CdCl2:2.5H2O	si_CdF2	si_Cdmetal(alpha)	si_Cdmetal(gamma)	si_CdOHCl
i_soln	101	-12.166	-10.625	-20.288	-27.110	-31.162	-28.234	-43.552	-44.452	-41.246	-8.187	-20.005	-14.539	-14.625	-32.033	-36.563	-43.298	-15.189	-14.155	-13.935	-20.808	-30.809	-30.912	-11.908
i_soln	102	-10.888	-9.873	-15.565	-21.667	-25.719	-26.803	-37.388	-38.288	-34.665	-7.192	-17.548	-12.373	-12.459	-33.302	-33.949	-38.518	-15.016	-13.981	-13.762	-23.208	-30.643	-30.747	-10.739
i_soln	103	-11.291	-10.277	-16.770	-23.276	-27.328	-27.619	-39.402	-40.302	-36.537	-7.887	-18.239	-12.772	-12.858	-32.239	-34.016	-38.983	-15.332	-14.298	-14.078	-22.619	-30.642	-30.746	-11.097
i_soln	104	-10.900	-9.886	-15.579	-21.694	-25.746	-26.847	-37.429	-38.329	-35.171	-7.206	-17.640	-12.387	-12.473	-31.719	-33.179	-37.761	-14.995	-13.960	-13.740	-22.213	-30.658	-30.761	-10.735
react	1001	-11.898	-10.883	-18.575	-25.687	-29.739	-28.912	-42.418	-43.318	-38.172	-8.006	-18.492	-13.388	-13.474	-33.911	-35.776	-41.360	-14.825	-13.790	-13.570	-24.050	-30.658	-30.762	-11.151
react	1002	-11.696	-10.682	-17.974	-24.884	-28.936	-28.466	-41.415	-42.315	-37.643	-7.983	-18.180	-13.183	-13.269	-33.128	-35.078	-40.457	-14.960	-13.925	-13.705	-23.703	-30.654	-30.757	-11.116
react	1003	-11.281	-10.266	-16.758	-23.252	-27.304	-27.580	-39.366	-40.266	-36.211	-7.574	-18.301	-12.761	-12.847	-33.617	-34.689	-39.646	-15.254	-14.220	-14.000	-22.869	-30.632	-30.735	-11.052
react	1004	-11.084	-10.069	-16.162	-22.460	-26.512	-27.190	-38.377	-39.277	-35.525	-7.383	-18.070	-12.567	-12.653	-33.475	-34.327	-39.090	-15.127	-14.093	-13.873	-23.185	-30.638	-30.741	-10.892
react	1005	-11.897	-10.882	-18.575	-25.686	-29.738	-28.910	-42.417	-43.317	-38.347	-8.181	-18.324	-13.386	-13.472	-33.650	-35.643	-41.225	-14.870	-13.836	-13.616	-23.770	-30.657	-30.760	-11.173
react	1006	-12.290	-11.275	-19.768	-27.272	-31.324	-29.901	-44.396	-45.296	-39.749	-8.394	-19.002	-13.776	-13.862	-34.126	-36.466	-42.438	-14.997	-13.963	-13.743	-23.310	-30.647	-30.750	-11.431
react	1007	-3.094	-2.299	-9.634	-7.099	-11.151	-13.050	-14.184	-15.084	-11.108	-0.281	-11.036	-4.688	-4.774	-25.750	-18.646	-15.530	-15.773	-14.739	-14.519	-18.020	-30.759	-30.862	-7.275
react	1008	-3.099	-2.315	-9.537	-6.898	-10.950	-12.746	-13.878	-14.778	-11.005	-0.125	-11.106	-4.701	-4.787	-25.449	-18.515	-15.411	-15.790	-14.756	-14.536	-17.683	-30.771	-30.875	-7.290
react	1009	-3.770	-2.845	-8.710	-6.196	-10.248	-12.027	-13.301	-14.202	-11.959	-0.097	-11.249	-5.293	-5.379	-23.433	-18.395	-15.885	-16.308	-15.274	-15.054	-17.258	-30.764	-30.867	-7.846
react	1010	-4.571	-4.180	-8.082	-6.984	-11.036	-13.526	-15.507	-16.407	-15.696	-0.852	-12.767	-6.665	-6.751	-24.726	-21.099	-19.960	-15.587	-14.552	-14.333	-18.036	-30.736	-30.839	-8.171
react	1011	-5.179	-5.126	-8.566	-9.556	-13.608	-17.206	-20.166	-21.066	-20.469	-2.693	-13.772	-8.097	-8.183	-25.789	-23.779	-24.072	-15.824	-14.789	-14.569	-17.780	-30.768	-30.871	-9.005
react	1012	-11.781	-11.328	-20.450	-26.631	-30.683	-26.944	-42.431	-43.332	-42.256	-7.543	-19.818	-14.999	-15.085	-31.441	-36.958	-44.153	-13.376	-12.342	-12.122	-20.835	-30.869	-30.973	-11.232
react	1013	-4.195	-4.641	-7.299	-5.894	-9.946	-12.047	-14.108	-15.009	-16.582	0.081	-13.425	-7.681	-7.767	-24.676	-22.599	-22.476	-14.013	-12.978	-12.759	-17.729	-31.151	-31.255	-7.892
react	1014	-6.876	-5.562	-9.186	-11.275	-15.327	-19.056	-22.984	-23.884	-21.857	-3.765	-13.507	-8.348	-8.434	-29.087	-25.805	-26.349	-15.952	-14.918	-14.698	-18.481	-30.619	-30.722	-9.195
react	1015	-4.735	-3.810	-8.194	-6.699	-10.751	-13.076	-14.823	-15.723	-14.583	-0.055	-12.336	-6.262	-6.348	-25.775	-21.019	-19.476	-15.058	-14.023	-13.804	-16.927	-30.732	-30.836	-7.704
react	1016	-8.676	-7.662	-9.666	-13.556	-17.608	-22.527	-27.066	-27.966	-27.850	-4.931	-15.554	-10.152	-10.238	-30.547	-29.240	-31.588	-15.622	-14.587	-14.368	-19.454	-30.622	-30.726	-9.931
react	1017	-11.484	-10.469	-17.361	-24.058	-28.110	-28.001	-40.376	-41.276	-37.215	-7.773	-18.140	-12.965	-13.051	-33.505	-34.938	-40.099	-15.220	-14.185	-13.966	-23.096	-30.635	-30.739	-11.137
react	1018	-11.487	-10.472	-17.365	-24.065	-28.117	-28.013	-40.386	-41.286	-37.222	-7.600	-18.122	-12.971	-13.057	-33.532	-34.962	-40.129	-15.056	-14.022	-13.802	-23.112	-30.642	-30.745	-11.058
react	1019	-12.379	-11.188	-20.057	-27.650	-31.702	-30.164	-44.863	-45.763	-40.382	-8.960	-19.542	-13.858	-13.944	-34.166	-36.610	-42.664	-15.347	-14.313	-14.093	-21.965	-30.629	-30.732	-11.647
react	1020	-10.876	-9.861	-15.554	-21.644	-25.696	-26.762	-37.354	-38.254	-34.819	-7.181	-17.974	-12.355	-12.441	-33.779	-34.161	-38.712	-15.344	-14.309	-14.089	-22.674	-30.626	-30.729	-10.894
react	1021	-10.673	-9.658	-14.951	-20.838	-24.890	-26.353	-36.344	-37.244	-33.950	-6.985	-17.812	-12.150	-12.236	-33.519	-33.724	-38.070	-15.456	-14.422	-14.202	-21.889	-30.621	-30.724	-10.848
react	1022	-10.073	-9.058	-13.158	-18.444	-22.496	-25.169	-33.350	-34.250	-32.394	-6.419	-17.129	-11.550	-11.636	-32.901	-32.514	-36.259	-15.472	-14.438	-14.218	-21.267	-30.620	-30.724	-10.555
react	1023	-11.489	-10.474	-17.366	-24.068	-28.120	-28.018	-40.390	-41.290	-36.924	-7.778	-17.970	-12.974	-13.060	-33.569	-34.984	-40.153	-15.015	-13.980	-13.760	-23.337	-30.644	-30.748	-11.039
react	1024	-12.084	-10.768	-19.162	-26.460	-30.512	-29.342	-43.377	-44.278	-39.327	-8.667	-19.000	-13.567	-13.653	-33.795	-35.986	-41.749	-15.153	-14.118	-13.899	-22.277	-30.637	-30.741	-11.404
react	1025	-12.107	-10.792	-19.186	-26.508	-30.560	-29.424	-43.449	-44.349	-39.382	-8.691	-19.207	-13.609	-13.695	-33.303	-35.804	-41.609	-14.500	-13.466	-13.246	-22.197	-30.680	-30.783	-11.099
react	1026	-12.226	-11.036	-20.406	-28.148	-32.200	-30.647	-45.510	-46.410	-40.897	-9.108	-19.408	-14.039	-14.125	-33.197	-36.396	-42.632	-14.268	-13.234	-13.014	-18.750	-30.710	-30.813	-11.198
react	1027	-11.875	-10.559	-18.553	-25.643	-29.695	-28.834	-42.352	-43.252	-38.603	-8.160	-18.854	-13.351	-13.437	-33.507	-35.519	-41.066	-15.629	-14.594	-14.375	-21.528	-30.622	-30.725	-11.535
react	1028	-12.432	-10.749	-21.589	-29.713	-33.765	-32.129	-47.457	-48.357	-42.266	-9.489	-20.154	-14.401	-14.487	-33.631	-37.156	-43.753	-14.787	-13.753	-13.533	-21.235	-30.672	-30.775	-11.639
react	1029	-12.397	-10.729	-20.977	-28.890	-32.942	-31.275	-46.423	-47.323	-41.516	-9.278	-20.366	-14.185	-14.271	-33.644	-36.839	-43.220	-14.978	-13.944	-13.724	-20.192	-30.656	-30.759	-11.626
react	1030	-10.282	-9.268	-13.764	-19.260	-23.312	-25.597	-34.376	-35.276	-32.784	-6.439	-16.915	-11.764	-11.850	-32.589	-32.680	-36.640	-15.167	-14.133	-13.913	-22.192	-30.635	-30.738	-10.511
react	1031	-11.297	-10.283	-16.775	-23.286	-27.338	-27.640	-39.417	-40.317	-36.070	-7.415	-17.745	-12.788	-12.874	-33.249	-34.545	-39.529	-14.818	-13.784	-13.564	-23.781	-30.658	-30.762	-10.848
react	1032	-9.687	-8.673	-11.999	-16.900	-20.952	-23.843	-31.421	-32.321	-30.790	-5.896	-16.298	-11.171	-11.257	-31.390	-31.190	-34.557	-15.102	-14.068	-13.848	-21.096	-30.641	-30.745	-10.181
react	1033	-11.087	-10.072	-16.165	-22.465	-26.517	-27.201	-38.386	-39.286	-35.530	-7.385	-18.040	-12.573	-12.659	-34.130	-34.663	-39.432	-14.987	-13.953	-13.733	-23.401	-30.644	-30.747	-10.825
react	1034	-10.688	-9.673	-14.966	-20.868	-24.920	-26.407	-36.389	-37.289	-33.979	-6.824	-17.753	-12.174	-12.260	-33.708	-33.855	-38.225	-14.963	-13.928	-13.709	-23.175	-30.645	-30.748	-10.613
react	1035	-11.893	-10.879	-18.571	-25.678	-29.730	-28.897	-42.405	-43.305	-38.162	-8.177	-18.607	-13.381	-13.467	-34.085	-35.852	-41.429	-14.926	-13.892	-13.672	-23.818	-30.651	-30.755	-11.198
react	1036	-11.507	-10.493	-17.385	-24.106	-28.158	-27.483	-40.446	-41.346	-36.566	-7.797	-17.821	-13.007	-13.093	-34.264	-35.381	-40.583	-14.532	-13.498	-13.278	-24.344	-30.677	-30.781	-10.814
react	1037	-11.494	-10.480	-17.372	-24.080	-28.132	-28.038	-40.407	-41.307	-36.936	-7.784	-17.981	-12.985	-13.071	-34.037	-35.234	-40.415	-14.808	-13.774	-13.554	-23.775	-30.655	-30.759	-10.941
react	1038	-8.299	-6.332	-8.277	-11.313	-15.365	-20.477	-23.968	-24.868	-25.114	-3.886	-14.536	-9.783	-9.869	-30.053	-28.440	-30.419	-15.073	-14.039	-13.819	-19.194	-30.654	-30.757	-9.473
react	1039	-9.521	-7.393	-10.388	-14.646	-18.698	-22.754	-28.523	-29.423	-28.840	-5.058	-15.458	-11.033	-11.119	-31.137	-30.857	-34.086	-14.260	-13.225	-13.006	-21.770	-30.704	-30.807	-9.691
react	1040	-10.715	-9.701	-14.995	-20.925	-24.977	-25.903	-36.476	-37.376	-34.037	-6.728	-16.933	-12.212	-12.298	-31.446	-32.779	-37.187	-14.658	-13.624	-13.404	-22.634	-30.682	-30.785	-10.479
react	1041	-9.278	-7.963	-10.884	-15.376	-19.428	-23.646	-29.487	-30.387	-29.468	-5.414	-16.159	-10.758	-10.844	-32.133	-30.943	-33.897	-15.268	-14.234	-14.014	-20.468	-30.629	-30.732	-10.058
react	1042	-7.675	-6.185	-9.186	-12.075	-16.127	-20.824	-24.583	-25.483	-24.451	-4.237	-14.657	-9.151	-9.237	-30.500	-27.715	-29.061	-15.617	-14.582	-14.362	-18.569	-30.621	-30.725	-9.428
react	1043	-11.478	-10.464	-17.357	-24.050	-28.102	-27.983	-40.363	-41.263	-37.208	-7.769	-18.612	-12.950	-13.036	-32.506	-34.418	-39.564	-16.148	-15.114	-14.894	-21.646	-30.621	-30.724	-11.594
react	1044	-12.077	-10.761	-19.156	-26.447	-30.499	-29.319	-43.359	-44.259	-39.332	-8.360	-19.731	-13.550	-13.636	-33.201	-35.664	-41.410	-15.984	-14.950	-14.730	-18.987	-30.621	-30.724	-11.812
react	1045	-12.075	-10.759	-19.153	-26.442	-30.494	-29.311	-43.351	-44.251	-39.329	-8.357	-19.460	-13.549	-13.635	-33.488	-35.806	-41.551	-15.801	-14.767	-14.547	-18.857	-30.620	-30.723	-11.720
react	1046	-10.276	-8.784	-13.758	-19.247	-23.299	-25.574	-34.357	-35.257	-33.074	-6.433	-17.222	-11.754	-11.840	-32.529	-32.634	-36.584	-15.431	-14.397	-14.177	-21.781	-30.625	-30.728	-10.637

state	soln	si_CdSO4	si_CdSO4:1H2O	si_CdSO4:2.67H2O	si_Cerussite	si_CH4(g)	si_Chalcanthite	si_Claudetite	si_Co(BO2)2	si_Co(OH)2	si_Co(OH)3	si_CO2(g)	si_Co3(AsO4)2	si_Co3O4	si_CoCl2	si_CoCl2:6H2O	si_CoCO3	si_CoF2	si_CoF3	si_CoFe2O4	si_CoO	si_CoSO4	si_CoSO4:6H2O	si_Cotunnite
i_soln	101	-12.042	-10.488	-10.341	-8.777	-46.239	-8.333	-28.918	-35.243	-11.997	-20.794	-3.538	-30.731	-34.613	-22.124	-16.393	-10.608	-18.432	-53.334	-0.666	-12.489	-13.025	-7.751	-10.396
i_soln	102	-13.760	-12.206	-12.059	-5.789	-53.966	-9.758	-38.381	-33.481	-10.525	-18.322	-3.264	-27.047	-28.199	-22.645	-16.914	-8.862	-21.527	-57.711	10.286	-11.018	-15.437	-10.162	-9.674
i_soln	103	-13.029	-11.475	-11.328	-6.965	-52.656	-9.328	-35.986	-34.177	-10.929	-18.926	-3.554	-27.860	-29.809	-22.966	-17.235	-9.556	-20.942	-56.832	7.067	-11.421	-14.711	-9.436	-10.477
i_soln	104	-12.961	-11.407	-11.260	-6.288	-53.966	-9.259	-38.388	-33.572	-10.539	-18.336	-3.264	-27.091	-28.238	-22.622	-16.892	-8.876	-20.530	-56.210	8.499	-11.031	-14.637	-9.362	-10.138
react	1001	-13.557	-12.003	-11.856	-6.604	-49.769	-9.853	-32.539	-34.421	-11.536	-19.833	-3.067	-29.159	-32.232	-22.449	-16.719	-9.677	-22.364	-58.962	6.090	-12.029	-15.230	-9.955	-9.480
react	1002	-13.267	-11.714	-11.567	-6.583	-50.748	-9.565	-33.653	-34.111	-11.335	-19.532	-3.246	-28.711	-31.426	-22.587	-16.856	-9.653	-22.020	-58.448	6.406	-11.827	-14.944	-9.669	-9.619
react	1003	-13.723	-12.169	-12.022	-6.646	-52.355	-8.981	-35.979	-34.238	-10.917	-18.914	-3.253	-27.822	-29.775	-22.887	-17.156	-9.243	-21.191	-57.213	8.014	-11.410	-15.404	-10.129	-10.392
react	1004	-13.749	-12.195	-12.048	-6.456	-53.160	-9.747	-37.177	-34.005	-10.722	-18.619	-3.258	-27.434	-28.987	-22.758	-17.027	-9.052	-21.505	-57.681	8.942	-11.214	-15.428	-10.153	-10.264
react	1005	-13.427	-11.873	-11.726	-6.780	-49.945	-9.724	-32.537	-34.254	-11.536	-19.833	-3.243	-29.156	-32.229	-22.496	-16.766	-9.852	-22.085	-58.544	6.697	-12.028	-15.101	-9.826	-9.527
react	1006	-13.470	-11.916	-11.769	-6.867	-48.165	-9.767	-30.562	-34.935	-11.928	-20.425	-3.064	-30.146	-33.806	-22.625	-16.894	-10.065	-21.628	-57.862	4.580	-12.420	-15.147	-9.872	-9.530
react	1007	-13.826	-12.272	-12.125	-2.044	-86.892	-12.254	-93.896	-27.066	-2.938	-6.835	-4.990	-16.442	2.364	-23.499	-17.768	-3.001	-16.436	-49.969	27.771	-3.430	-15.600	-10.325	-12.645
react	1008	-13.669	-12.115	-11.968	-2.016	-86.839	-12.103	-93.911	-27.133	-2.947	-6.844	-4.937	-16.477	2.337	-23.512	-17.782	-2.957	-16.095	-49.453	27.904	-3.439	-15.440	-10.165	-12.674
react	1009	-12.365	-10.811	-10.664	-2.077	-84.287	-10.334	-89.322	-27.229	-3.494	-7.691	-4.785	-17.022	0.097	-23.985	-18.254	-3.351	-15.623	-48.773	26.058	-3.986	-14.090	-8.815	-12.813
react	1010	-12.326	-10.772	-10.625	-2.147	-78.024	-9.036	-78.219	-28.717	-4.834	-9.731	-4.123	-18.293	-5.326	-23.232	-17.502	-4.030	-16.371	-49.923	25.988	-5.327	-14.020	-8.745	-11.452
react	1011	-12.141	-10.587	-10.440	-2.843	-72.178	-8.683	-67.454	-29.719	-6.264	-11.861	-3.876	-19.999	-11.014	-23.466	-17.736	-5.213	-16.112	-49.521	24.420	-6.756	-13.832	-8.557	-11.199
react	1012	-11.516	-9.962	-9.815	-9.554	-44.637	-7.790	-28.587	-35.194	-12.594	-21.592	-3.536	-33.156	-36.805	-20.447	-14.718	-11.203	-18.595	-53.481	-3.325	-13.086	-12.635	-7.362	-8.901
react	1013	-11.792	-10.239	-10.092	-2.225	-74.999	-8.560	-74.708	-29.364	-5.840	-11.037	-3.498	-20.754	-8.941	-21.647	-15.918	-4.410	-16.054	-49.245	22.886	-6.332	-13.476	-8.202	-9.565
react	1014	-13.664	-12.110	-11.963	-2.394	-70.550	-9.863	-62.960	-29.454	-6.514	-12.311	-3.848	-19.303	-12.165	-23.594	-17.863	-5.436	-16.812	-50.645	25.119	-7.007	-15.354	-10.079	-10.655
react	1015	-13.051	-11.497	-11.351	-1.835	-79.225	-10.801	-81.308	-28.286	-4.431	-9.128	-3.723	-17.828	-3.716	-22.704	-16.973	-3.227	-15.263	-48.263	26.159	-4.924	-14.746	-9.471	-11.414
react	1016	-13.493	-11.939	-11.792	-3.726	-62.715	-9.820	-51.896	-31.496	-8.313	-15.010	-3.214	-22.769	-19.362	-23.259	-17.529	-6.600	-17.781	-52.099	18.634	-8.806	-15.179	-9.904	-10.488
react	1017	-13.565	-12.011	-11.864	-6.545	-51.551	-9.864	-34.801	-34.077	-11.121	-19.218	-3.249	-28.243	-30.585	-22.852	-17.121	-9.443	-21.418	-57.550	7.523	-11.613	-15.246	-9.971	-10.057
react	1018	-13.575	-12.021	-11.874	-6.197	-51.375	-9.873	-34.804	-34.056	-11.125	-19.222	-3.073	-28.257	-30.596	-22.685	-16.955	-9.270	-21.431	-57.569	7.578	-11.617	-15.253	-9.978	-9.715
react	1019	-13.449	-11.895	-11.748	-8.032	-48.242	-9.748	-30.153	-35.480	-12.016	-20.563	-3.540	-30.405	-34.170	-22.981	-17.250	-10.629	-20.288	-55.859	2.405	-12.508	-15.131	-9.856	-10.486
react	1020	-14.007	-12.453	-12.306	-6.252	-53.966	-10.308	-38.369	-33.913	-10.513	-18.310	-3.264	-27.004	-28.162	-22.977	-17.247	-8.850	-20.997	-56.923	9.016	-11.006	-15.689	-10.414	-10.482
react	1021	-13.979	-12.425	-12.278	-6.056	-54.773	-10.281	-39.570	-33.752	-10.310	-18.007	-3.271	-26.595	-27.351	-23.092	-17.361	-8.654	-20.214	-55.750	10.333	-10.802	-15.663	-10.388	-10.597
react	1022	-13.970	-12.417	-12.270	-5.493	-57.208	-10.275	-43.206	-33.068	-9.709	-17.106	-3.306	-25.411	-24.950	-23.107	-17.377	-8.088	-19.592	-54.818	12.680	-10.201	-15.655	-10.380	-10.615
react	1023	-13.592	-12.038	-11.892	-6.375	-51.551	-9.589	-34.806	-33.903	-11.126	-19.223	-3.249	-28.262	-30.601	-22.643	-16.913	-9.448	-21.656	-57.904	7.429	-11.619	-15.270	-9.995	-9.673
react	1024	-13.409	-11.855	-11.708	-7.741	-49.444	-9.707	-31.481	-34.935	-11.721	-20.118	-3.542	-29.585	-32.986	-22.784	-17.053	-10.336	-20.597	-56.319	3.387	-12.214	-15.088	-9.813	-10.291
react	1025	-13.142	-11.588	-11.441	-7.775	-49.444	-9.436	-31.500	-35.126	-11.747	-20.144	-3.542	-29.672	-33.064	-22.114	-16.384	-10.363	-20.501	-56.162	3.159	-12.240	-14.805	-9.530	-9.629
react	1026	-12.873	-11.320	-11.173	-8.202	-47.841	-9.166	-29.825	-35.318	-12.169	-20.766	-3.539	-30.900	-34.729	-21.874	-16.143	-10.781	-17.045	-50.967	0.483	-12.661	-14.528	-9.253	-9.397
react	1027	-13.373	-11.819	-11.672	-7.231	-49.945	-9.674	-32.516	-34.795	-11.512	-19.809	-3.243	-29.074	-32.158	-23.266	-17.535	-9.828	-19.854	-55.210	4.519	-12.004	-15.059	-9.784	-10.771
react	1028	-12.910	-11.356	-11.209	-8.572	-46.239	-9.205	-28.897	-35.178	-11.645	-20.442	-3.538	-29.665	-33.558	-21.508	-15.777	-10.256	-18.645	-53.829	-0.154	-12.138	-13.679	-8.404	-9.927
react	1029	-13.024	-11.470	-11.324	-8.358	-47.040	-9.321	-29.257	-35.598	-11.638	-20.335	-3.538	-29.422	-33.335	-21.906	-16.176	-10.249	-17.810	-52.481	0.479	-12.130	-14.001	-8.727	-10.118
react	1030	-13.707	-12.153	-12.006	-5.037	-56.218	-10.009	-42.001	-32.851	-9.920	-17.417	-3.116	-25.840	-25.781	-22.799	-17.068	-8.109	-20.513	-56.194	12.657	-10.412	-15.387	-10.112	-9.830
react	1031	-13.526	-11.972	-11.825	-5.890	-52.179	-9.823	-35.997	-33.673	-10.936	-18.933	-3.077	-27.887	-29.831	-22.443	-16.712	-9.086	-22.095	-58.558	8.842	-11.429	-15.199	-9.924	-9.349
react	1032	-13.404	-11.851	-11.704	-4.279	-58.670	-9.710	-44.463	-32.233	-9.325	-16.522	-3.168	-24.087	-23.397	-22.733	-17.002	-7.566	-19.416	-54.545	15.476	-9.817	-15.083	-9.808	-9.548
react	1033	-14.074	-12.520	-12.373	-6.158	-53.160	-10.071	-37.181	-33.973	-10.725	-18.622	-3.258	-27.446	-28.997	-22.616	-16.885	-9.056	-21.719	-58.000	9.372	-11.217	-15.750	-10.475	-9.820
react	1034	-14.062	-12.508	-12.361	-5.422	-54.597	-10.060	-39.587	-33.685	-10.326	-18.023	-3.095	-26.652	-27.400	-22.591	-16.860	-8.494	-21.492	-57.660	11.409	-10.818	-15.738	-10.463	-9.621
react	1035	-13.647	-12.093	-11.946	-6.951	-49.945	-9.643	-32.535	-34.538	-11.532	-19.829	-3.243	-29.143	-32.217	-22.553	-16.823	-9.848	-22.135	-58.621	6.609	-12.024	-15.322	-10.048	-9.759
react	1036	-13.923	-12.369	-12.222	-6.030	-51.551	-9.741	-33.623	-33.743	-11.148	-19.245	-3.249	-27.735	-30.665	-22.149	-16.418	-9.470	-22.650	-59.385	8.287	-11.640	-15.589	-10.314	-8.812
react	1037	-13.821	-12.267	-12.120	-6.382	-51.551	-10.118	-34.813	-33.910	-11.133	-19.230	-3.249	-28.285	-30.621	-22.433	-16.702	-9.455	-22.088	-58.550	7.609	-11.625	-15.494	-10.219	-9.462
react	1038	-13.430	-11.876	-11.729	-2.529	-64.125	-9.076	-54.524	-29.995	-7.462	-13.959	-3.023	-20.728	-16.407	-22.228	-16.497	-5.558	-17.039	-51.211	21.910	-7.954	-14.633	-9.359	-9.302
react	1039	-13.347	-11.793	-11.646	-3.552	-59.275	-8.694	-46.944	-30.767	-8.561	-15.658	-2.973	-22.636	-20.906	-21.264	-15.534	-6.607	-19.463	-54.899	17.748	-9.054	-14.400	-9.125	-8.311
react	1040	-12.912	-11.358	-11.211	-4.913	-54.473	-8.607	-38.406	-32.858	-10.356	-18.053	-2.971	-26.151	-27.489	-22.278	-16.548	-8.400	-20.944	-56.822	11.472	-10.848	-14.581	-9.306	-8.894
react	1041	-13.982	-12.429	-12.282	-4.197	-60.198	-10.294	-48.127	-32.097	-8.915	-15.912	-3.096	-23.890	-21.768	-22.901	-17.171	-7.084	-18.791	-53.613	16.753	-9.408	-15.664	-10.389	-10.117
react	1042	-13.969	-12.415	-12.269	-2.903	-67.023	-10.055	-58.498	-30.600	-7.313	-13.510	-3.521	-21.069	-15.361	-23.255	-17.524	-5.907	-16.897	-50.773	22.965	-7.805	-15.656	-10.381	-10.353
react	1043	-13.073	-11.519	-11.372	-6.842	-51.551	-9.375	-34.791	-34.557	-11.115	-19.212	-3.249	-28.221	-30.567	-23.789	-18.058	-9.437	-19.977	-55.392	6.533	-11.607	-14.762	-9.487	-11.297
react	1044	-13.120	-11.566	-11.419	-7.433	-49.143	-9.422	-31.473	-35.675	-11.714	-20.111	-3.241	-29.558	-32.963	-23.624	-17.893	-10.028	-17.317	-51.402	2.248	-12.206	-14.808	-9.533	-11.131
react	1045	-13.264	-11.710	-11.563	-7.429	-49.143	-9.566	-31.472	-35.403	-11.711	-20.108	-3.241	-29.550	-32.956	-23.440	-17.709	-10.025	-17.185	-51.206	2.256	-12.204	-14.951	-9.676	-10.946
react	1046	-13.682	-12.129	-11.982	-5.206	-56.218	-9.986	-41.994	-32.860	-9.612	-17.109	-3.116	-24.913	-24.858	-22.765	-17.035	-7.801	-19.805	-55.286	12.483	-10.104	-15.065	-9.790	-10.273

state	soln	si_Cr(OH)2	si_Cr(OH)3	si_Cr(OH)3(am)	si_Cr2O3	si_CrCl2	si_CrCl3	si_CrF3	si_Crmetal	si_CrO3	si_Cryolite	si_Cu(OH)2	si_Cu2SO4	si_Cu3(AsO4)2:2H2O	si_CuCO3	si_CuCrO4	si_CuF	si_CuF2	si_CuF2:2H2O	si_Cumetal	si_CuOCuSO4	si_Cupricferrite	si_Cuprite	si_Cuprousferrite	si_CuSO4
i_soln	101	-21.826	-7.089	-5.004	-9.150	-40.052	-43.298	-26.106	-57.890	-45.319	-18.683	-8.326	-19.695	-26.045	-9.837	-42.742	-10.820	-21.894	-16.229	-4.606	-20.928	-10.932	-8.919	1.109	-13.912
i_soln	102	-19.966	-4.229	-2.144	-3.430	-40.184	-43.427	-30.095	-58.030	-39.459	-28.430	-5.869	-20.662	-19.402	-7.105	-34.424	-11.645	-24.002	-18.337	-4.149	-19.895	1.007	-6.003	7.307	-15.337
i_soln	103	-20.633	-5.097	-3.011	-5.165	-40.770	-44.171	-29.480	-58.297	-40.927	-25.862	-6.569	-20.533	-21.106	-8.096	-36.592	-11.651	-23.714	-18.049	-4.449	-20.166	-2.509	-7.004	5.399	-14.908
i_soln	104	-20.457	-4.721	-2.636	-4.413	-40.641	-43.866	-29.072	-58.522	-39.951	-24.026	-6.183	-20.478	-20.349	-7.420	-35.230	-11.454	-23.306	-17.641	-4.463	-19.711	-1.081	-6.632	6.106	-14.838
react	1001	-20.462	-5.226	-3.140	-5.423	-39.474	-42.614	-30.831	-57.526	-41.956	-30.132	-7.182	-21.071	-22.421	-8.222	-38.234	-12.371	-25.141	-19.476	-4.462	-21.304	-3.491	-7.629	4.902	-15.432
react	1002	-20.534	-5.198	-3.112	-5.367	-39.886	-43.096	-30.590	-57.798	-41.628	-28.746	-6.978	-20.779	-21.967	-8.197	-37.702	-12.197	-24.796	-19.131	-4.458	-20.812	-3.174	-7.422	5.063	-15.144
react	1003	-20.318	-4.782	-2.696	-4.535	-40.387	-43.755	-29.557	-57.982	-40.612	-27.604	-5.517	-19.134	-17.947	-6.743	-35.225	-10.730	-22.923	-17.258	-3.397	-18.768	-0.522	-4.900	6.919	-14.561
react	1004	-20.229	-4.592	-2.507	-4.156	-40.365	-43.666	-30.132	-58.093	-40.122	-28.381	-6.063	-20.646	-19.784	-7.294	-35.282	-11.631	-23.979	-18.314	-4.143	-20.079	-0.336	-6.192	6.639	-15.327
react	1005	-20.638	-5.402	-3.316	-5.774	-39.698	-42.862	-30.590	-57.702	-42.132	-29.435	-7.180	-20.940	-22.416	-8.397	-38.408	-12.231	-24.861	-19.196	-4.460	-21.173	-2.884	-7.626	5.206	-15.303
react	1006	-20.846	-5.810	-3.724	-6.591	-39.643	-42.875	-29.724	-57.511	-43.140	-28.012	-7.571	-20.974	-23.400	-8.607	-39.807	-11.997	-24.403	-18.738	-4.451	-21.607	-4.999	-8.008	4.153	-15.347
react	1007	-20.646	-1.009	1.076	3.010	-49.306	-52.870	-30.620	-66.510	-24.539	-26.317	-0.614	-25.704	-15.797	-3.577	-14.250	-11.539	-21.244	-15.579	-6.694	-17.137	16.158	-3.294	13.610	-17.833
react	1008	-20.646	-1.010	1.076	3.009	-49.311	-52.877	-30.095	-66.510	-24.540	-25.859	-0.633	-25.572	-15.861	-3.543	-14.269	-11.383	-20.912	-15.248	-6.713	-17.005	16.282	-3.332	13.663	-17.683
react	1009	-20.275	-0.939	1.147	3.151	-48.866	-52.695	-28.498	-65.539	-25.369	-23.298	-0.761	-23.331	-15.150	-3.519	-15.226	-10.702	-20.023	-14.358	-6.241	-15.364	14.855	-2.988	13.185	-15.914
react	1010	-19.795	-1.159	0.927	2.711	-46.293	-49.775	-27.828	-63.660	-27.689	-22.422	-0.873	-20.744	-12.734	-2.968	-17.658	-9.817	-19.541	-13.876	-4.953	-14.177	16.014	-1.811	14.409	-14.615
react	1011	-19.680	-1.744	0.342	1.541	-44.982	-48.567	-25.881	-62.144	-30.374	-17.142	-2.137	-20.257	-13.946	-3.986	-21.608	-9.538	-19.118	-13.453	-4.817	-15.090	14.610	-2.941	13.775	-14.263
react	1012	-22.677	-8.141	-6.056	-11.253	-38.630	-40.939	-26.507	-58.341	-46.971	-20.477	-8.770	-19.194	-28.010	-10.278	-44.837	-10.846	-21.903	-16.239	-4.649	-20.827	-13.437	-9.405	-0.165	-13.368
react	1013	-19.789	-1.453	0.632	2.123	-43.696	-46.184	-26.138	-63.053	-28.883	-19.305	-1.945	-20.739	-15.396	-3.415	-19.924	-9.928	-19.291	-13.626	-5.425	-14.772	12.845	-3.355	12.588	-14.138
react	1014	-19.170	-1.433	0.652	2.163	-44.349	-48.072	-26.244	-61.234	-30.663	-19.608	-2.045	-20.945	-12.223	-3.867	-21.805	-9.470	-19.475	-13.810	-4.325	-16.178	15.651	-2.357	14.541	-15.443
react	1015	-19.880	-1.044	1.042	2.942	-46.252	-49.471	-26.655	-64.144	-26.974	-19.958	-1.509	-23.546	-15.388	-3.205	-17.579	-10.301	-19.472	-13.807	-5.989	-16.579	15.145	-3.484	13.456	-16.381
react	1016	-19.762	-2.926	-0.840	-0.822	-42.808	-46.364	-26.491	-60.026	-34.856	-19.593	-3.977	-21.033	-16.086	-5.164	-27.929	-10.087	-20.577	-14.912	-4.457	-18.066	9.034	-4.420	11.167	-15.400
react	1017	-20.720	-5.283	-3.198	-5.538	-40.550	-43.899	-30.092	-58.184	-41.413	-28.162	-6.762	-21.062	-21.492	-7.984	-37.271	-11.886	-24.190	-18.525	-4.442	-20.895	-2.054	-7.189	5.630	-15.444
react	1018	-20.723	-5.287	-3.201	-5.545	-40.384	-43.647	-30.111	-58.187	-41.417	-27.527	-6.767	-21.077	-21.511	-7.813	-37.281	-11.896	-24.206	-18.541	-4.447	-20.910	-2.002	-7.201	5.654	-15.453
react	1019	-21.191	-6.204	-4.119	-7.380	-40.255	-43.670	-27.977	-57.755	-43.684	-24.842	-7.656	-20.940	-23.650	-9.168	-40.436	-11.318	-23.060	-17.395	-4.436	-21.673	-7.171	-8.077	3.075	-15.328
react	1020	-20.131	-4.394	-2.309	-3.760	-40.694	-44.110	-29.484	-58.195	-39.624	-27.654	-6.154	-21.498	-20.253	-7.391	-34.875	-11.672	-23.770	-18.105	-4.434	-20.731	-0.561	-6.574	6.381	-15.887
react	1021	-19.865	-4.029	-1.943	-3.029	-40.747	-44.221	-28.249	-58.130	-38.959	-25.723	-5.950	-21.468	-19.843	-7.195	-34.006	-11.278	-22.987	-17.322	-4.430	-20.501	0.756	-6.367	7.041	-15.861
react	1022	-20.110	-3.974	-1.888	-2.919	-41.608	-45.090	-28.163	-58.974	-38.004	-24.209	-5.352	-21.463	-18.666	-6.631	-32.452	-10.970	-22.367	-16.702	-4.432	-19.897	3.101	-5.770	8.213	-15.855
react	1023	-20.424	-4.987	-2.902	-4.946	-40.040	-43.282	-30.145	-57.888	-41.117	-28.084	-6.468	-20.494	-20.615	-7.690	-36.682	-11.709	-24.130	-18.465	-4.148	-20.327	-1.849	-6.603	5.879	-15.169
react	1024	-21.030	-5.894	-3.809	-6.760	-40.192	-43.507	-28.572	-57.895	-42.924	-25.021	-7.363	-20.906	-22.835	-8.878	-39.383	-11.476	-23.370	-17.705	-4.443	-21.339	-6.191	-7.791	3.561	-15.287
react	1025	-21.062	-5.925	-3.840	-6.822	-39.528	-42.495	-28.420	-57.926	-42.955	-23.235	-7.401	-20.672	-22.958	-8.916	-39.452	-11.453	-23.286	-17.621	-4.481	-21.106	-6.430	-7.867	3.423	-15.015
react	1026	-21.357	-6.420	-4.335	-7.812	-39.161	-41.997	-23.098	-57.821	-44.050	-15.557	-7.829	-20.431	-24.207	-9.342	-40.976	-9.743	-19.837	-14.172	-4.509	-21.264	-9.113	-8.325	2.067	-14.745
react	1027	-20.915	-5.678	-3.593	-6.328	-40.768	-44.328	-27.556	-57.979	-42.408	-24.310	-7.150	-20.860	-22.313	-8.366	-38.655	-11.097	-22.624	-16.959	-4.430	-21.093	-5.055	-7.565	4.136	-15.253
react	1028	-21.543	-6.807	-4.722	-8.585	-39.505	-42.619	-26.671	-57.608	-45.037	-21.522	-8.194	-20.435	-25.637	-9.705	-42.328	-10.970	-22.326	-16.661	-4.474	-21.668	-10.639	-8.654	1.322	-14.784
react	1029	-21.405	-6.569	-4.483	-8.109	-39.774	-42.991	-25.192	-57.669	-44.499	-19.428	-7.979	-20.536	-24.773	-9.491	-41.575	-10.442	-21.284	-15.619	-4.459	-21.570	-9.799	-8.425	1.749	-14.901
react	1030	-19.890	-3.854	-1.768	-2.679	-40.869	-44.191	-29.108	-58.554	-38.184	-25.920	-5.564	-21.209	-19.099	-6.653	-32.844	-11.437	-23.289	-17.624	-4.444	-19.842	3.076	-5.994	8.194	-15.589
react	1031	-20.160	-4.624	-2.539	-4.219	-39.767	-42.903	-30.726	-57.825	-40.454	-29.460	-6.582	-21.041	-21.151	-7.632	-36.133	-12.237	-24.873	-19.208	-4.462	-20.674	-0.741	-7.030	6.277	-15.402
react	1032	-19.691	-3.355	-1.269	-1.680	-41.198	-44.485	-27.855	-58.955	-36.785	-22.573	-4.974	-20.920	-17.359	-6.115	-30.855	-10.895	-22.196	-16.531	-4.454	-18.953	5.891	-5.414	9.597	-15.289
react	1033	-20.231	-4.595	-2.509	-4.161	-40.222	-43.450	-30.450	-58.096	-40.125	-28.910	-6.068	-20.975	-19.801	-7.299	-35.290	-11.741	-24.194	-18.529	-4.148	-20.408	0.093	-6.202	6.850	-15.651
react	1034	-19.880	-4.043	-1.958	-3.058	-40.244	-43.459	-30.157	-58.144	-38.973	-28.873	-5.670	-20.966	-19.011	-6.739	-33.740	-11.629	-23.968	-18.303	-4.150	-19.999	2.129	-5.807	7.868	-15.639
react	1035	-20.457	-5.220	-3.135	-5.412	-39.578	-42.772	-30.489	-57.521	-41.950	-29.940	-6.874	-20.553	-21.497	-8.091	-37.921	-11.952	-24.610	-18.945	-4.154	-20.786	-2.670	-7.015	5.466	-15.222
react	1036	-20.046	-4.610	-2.525	-4.191	-39.147	-42.131	-31.228	-57.511	-40.740	-30.836	-6.322	-20.499	-19.584	-7.544	-36.159	-12.049	-24.956	-19.291	-4.002	-20.332	-0.824	-6.310	6.465	-15.320
react	1037	-20.430	-4.993	-2.908	-4.958	-39.829	-42.962	-30.791	-57.894	-41.123	-29.158	-6.779	-21.333	-21.550	-8.001	-36.999	-12.233	-24.866	-19.201	-4.459	-21.166	-1.973	-7.224	5.662	-15.697
react	1038	-18.680	-1.643	0.442	1.742	-41.545	-44.812	-25.373	-59.344	-32.973	-17.722	-2.927	-19.639	-13.449	-3.923	-24.996	-9.291	-19.636	-13.971	-3.807	-16.272	12.509	-2.719	13.229	-14.656
react	1039	-18.784	-2.347	-0.262	0.334	-39.586	-42.421	-28.065	-58.248	-35.477	-23.037	-3.878	-19.008	-14.912	-4.824	-28.452	-10.305	-21.912	-16.247	-3.558	-16.841	8.495	-3.422	11.347	-14.274
react	1040	-19.908	-4.072	-1.986	-3.115	-39.930	-42.975	-29.318	-58.172	-39.002	-24.729	-5.404	-19.246	-17.620	-6.347	-33.502	-11.073	-23.123	-17.458	-3.883	-18.279	2.487	-5.273	8.180	-14.186
react	1041	-19.578	-3.041	-0.956	-1.054	-41.663	-45.040	-27.219	-59.242	-35.871	-21.781	-4.568	-21.498	-17.173	-5.637	-29.536	-10.582	-21.576	-15.911	-4.448	-19.131	7.164	-5.002	10.236	-15.874
react	1042	-19.364	-2.028	0.058	0.973	-43.406	-46.960	-25.768	-60.628	-32.458	-18.532	-2.734	-21.025	-13.658	-4.229	-24.289	-9.402	-19.450	-13.785	-4.214	-17.059	13.608	-2.934	13.575	-15.635
react	1043	-20.717	-5.280	-3.195	-5.532	-41.490	-45.310	-27.937	-58.181	-41.410	-25.130	-6.751	-20.562	-21.454	-7.972	-37.257	-11.157	-22.744	-17.079	-4.431	-20.395	-3.039	-7.167	5.143	-14.955
react	1044	-21.043	-5.906	-3.821	-6.784	-41.052	-44.791	-23.675	-57.907	-42.936	-18.786	-7.349	-20.607	-22.791	-8.564	-39.382	-9.827	-20.084	-14.419	-4.429	-21.040	-7.324	-7.765	3.002	-15.001
react	1045	-21.041	-5.905	-3.820	-6.781	-40.869	-44.517	-23.479	-57.906	-42.935	-18.619	-7.348	-20.750	-22.786	-8.562	-39.379	-9.761	-19.953	-14.288	-4.428	-21.183	-7.317	-7.762	3.006	-15.145
react	1046	-20.186	-4.149	-2.064	-3.270	-41.439	-44.899	-28.803	-58.850	-38.479	-25.454	-5.555	-21.177	-19.068	-6.644	-33.131	-11.227	-22.880	-17.215	-4.435	-19.810	2.603	-5.976	7.962	-15.565

state	soln	si_Diaspore	si_Dolomite(disordered)	si_Dolomite(ordered)	si_Epsomite	si_Fe(OH)2	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_Fe2(SO4)3	si_Fe3(OH)8	si_FeAsO4:2H2O	si_FeCr2O4	si_Ferrihydrite	si_Fluorite	si_Gibbsite	si_Goethite	si_Goslarite	si_Gypsum	si_H-Jarosite	si_Halite	si_Hausmannite	si_Hematite	si_Hercynite	si_Huntite
i_soln	101	-0.483	-17.133	-16.583	-4.516	-11.378	-1.849	-13.739	-35.517	-23.327	-13.540	-16.521	-5.837	-5.608	-1.902	-3.137	-6.299	-1.692	-18.477	-7.590	-37.894	-3.874	-7.928	-37.718
i_soln	102	4.029	-14.587	-14.037	-7.120	-7.637	2.593	-5.998	-37.685	-10.106	-9.165	-7.061	-1.096	-9.453	2.611	1.604	-8.436	-4.854	-12.022	-8.774	-33.928	5.607	4.838	-32.068
i_soln	103	3.128	-15.975	-15.425	-6.394	-8.845	1.197	-8.005	-37.112	-14.130	-10.374	-10.004	-2.504	-8.870	1.710	0.196	-8.209	-4.129	-13.986	-8.565	-36.440	2.792	1.827	-34.843
i_soln	104	3.499	-14.613	-14.063	-6.320	-8.524	1.711	-6.884	-37.020	-12.766	-10.053	-8.931	-1.983	-8.457	2.081	0.717	-8.126	-4.055	-13.056	-8.121	-34.869	3.834	2.890	-32.119
react	1001	2.939	-16.214	-15.664	-6.913	-8.730	1.181	-9.090	-37.217	-14.383	-10.297	-10.146	-2.689	-10.290	1.521	0.011	-8.035	-4.647	-14.364	-8.548	-37.960	2.423	1.565	-35.321
react	1002	3.069	-16.168	-15.618	-6.626	-8.773	1.187	-8.733	-36.849	-14.312	-10.318	-10.133	-2.632	-9.947	1.651	0.068	-7.821	-4.361	-14.023	-8.441	-38.057	2.537	1.783	-35.230
react	1003	3.269	-15.350	-14.800	-7.088	-8.377	1.675	-7.537	-38.291	-12.725	-9.904	-8.906	-2.036	-9.119	1.851	0.664	-8.452	-4.822	-13.992	-8.898	-32.716	3.728	2.577	-33.595
react	1004	3.724	-14.968	-14.418	-7.112	-8.111	2.031	-6.871	-38.218	-11.728	-9.638	-8.261	-1.670	-9.432	2.306	1.030	-8.575	-4.846	-13.334	-8.832	-31.928	4.460	3.753	-32.830
react	1005	2.800	-16.565	-16.015	-6.784	-8.427	1.477	-8.787	-36.227	-13.475	-9.994	-10.195	-2.386	-10.011	1.382	0.314	-7.915	-4.518	-13.199	-8.572	-37.430	3.028	1.589	-36.023
react	1006	1.978	-16.991	-16.441	-6.830	-9.089	0.655	-10.249	-36.910	-15.861	-10.762	-11.674	-3.248	-9.554	0.560	-0.548	-8.086	-4.564	-15.091	-8.542	-39.007	1.304	-0.716	-36.876
react	1007	1.932	-1.608	-1.058	-7.078	-6.589	6.275	-7.655	-51.040	0.840	-10.295	0.428	3.852	-3.313	0.514	6.552	-9.894	-3.968	-12.677	-9.095	-0.547	15.505	1.693	-6.955
react	1008	1.871	-1.404	-0.854	-6.913	-6.517	6.346	-7.590	-50.390	1.054	-10.228	0.498	3.924	-2.859	0.453	6.624	-9.841	-3.695	-12.125	-9.274	-0.343	15.647	1.641	-6.654
react	1009	1.788	-1.895	-1.345	-5.687	-6.867	5.707	-6.988	-45.998	-0.595	-10.330	0.290	3.274	-1.966	0.370	5.974	-8.269	-1.923	-10.280	-9.374	-6.300	14.348	1.125	-8.183
react	1010	2.986	-2.789	-2.239	-5.077	-5.532	6.657	-3.607	-40.496	2.011	-8.319	1.185	3.909	-2.790	1.568	6.609	-7.991	-1.929	-5.553	-9.028	-11.001	15.618	4.858	-9.354
react	1011	3.890	-4.991	-4.441	-4.069	-4.901	6.766	-1.373	-35.784	2.502	-7.097	0.646	3.840	-3.190	2.472	6.540	-7.383	-2.400	-2.528	-8.660	-15.818	15.480	7.297	-12.280
react	1012	-1.273	-16.102	-15.552	-3.145	-12.209	-2.539	-15.375	-34.617	-26.221	-14.888	-19.455	-6.868	-4.533	-2.691	-4.168	-5.740	-0.064	-19.597	-7.222	-39.810	-5.935	-10.337	-35.912
react	1013	1.798	-0.854	-0.304	-3.154	-6.280	5.996	-3.881	-37.945	-0.835	-9.090	-0.151	2.861	-1.159	0.380	5.561	-6.403	-0.073	-5.601	-7.620	-15.517	13.522	1.734	-5.417
react	1014	4.731	-7.732	-7.182	-7.037	-4.227	7.260	-0.219	-38.650	4.126	-5.899	1.942	4.315	-4.738	3.313	7.015	-8.313	-4.771	-3.647	-9.251	-16.257	16.429	9.653	-18.358
react	1015	3.249	-1.756	-1.206	-6.371	-5.848	6.559	-4.434	-44.116	1.462	-8.807	1.100	3.793	-1.687	1.831	6.493	-8.450	-2.660	-8.160	-8.936	-10.187	15.386	5.068	-7.850
react	1016	4.957	-10.063	-9.513	-6.863	-5.669	5.237	-0.341	-37.412	-2.002	-7.276	-2.486	1.972	-5.709	3.539	4.672	-8.372	-4.597	-6.726	-9.085	-23.897	11.743	8.662	-23.021
react	1017	3.080	-15.749	-15.199	-6.929	-8.421	1.567	-7.981	-37.493	-13.058	-9.954	-9.953	-2.180	-9.345	1.662	0.520	-8.201	-4.664	-13.700	-8.879	-36.314	3.440	2.156	-34.391
react	1018	3.082	-15.403	-14.853	-6.936	-8.392	1.622	-7.952	-37.445	-12.970	-9.925	-9.931	-2.151	-9.358	1.664	0.549	-8.148	-4.671	-13.620	-8.573	-37.228	3.498	2.189	-33.701
react	1019	1.146	-18.122	-17.572	-6.815	-10.083	-0.429	-11.443	-38.687	-18.942	-11.803	-13.457	-4.292	-8.216	-0.272	-1.592	-8.492	-4.550	-18.015	-8.768	-37.565	-0.783	-3.374	-39.138
react	1020	3.774	-14.564	-14.014	-7.373	-8.278	1.900	-6.639	-39.761	-12.029	-9.803	-8.032	-1.737	-8.925	2.356	0.963	-8.970	-5.107	-14.474	-9.120	-34.795	4.325	3.686	-32.022
react	1021	3.663	-14.172	-13.622	-7.348	-7.822	2.409	-5.783	-39.180	-10.460	-9.347	-6.845	-1.181	-8.142	2.245	1.519	-9.314	-5.082	-13.160	-9.178	-33.984	5.438	3.922	-31.239
react	1022	4.214	-13.040	-12.490	-7.339	-7.248	3.190	-4.017	-39.210	-8.139	-8.782	-6.161	-0.307	-7.520	2.796	2.393	-8.998	-5.073	-11.723	-9.186	-29.776	7.185	5.596	-28.975
react	1023	3.194	-15.758	-15.208	-6.953	-8.465	1.555	-8.025	-37.637	-13.190	-9.999	-9.405	-2.224	-9.582	1.776	0.476	-8.261	-4.687	-13.870	-8.551	-37.233	3.351	2.340	-34.411
react	1024	1.754	-17.536	-16.986	-6.772	-9.889	-0.101	-10.649	-38.756	-18.061	-11.492	-12.643	-3.948	-8.524	0.336	-1.248	-8.637	-4.507	-17.489	-8.477	-38.187	-0.096	-1.964	-37.966
react	1025	1.670	-17.584	-17.034	-6.486	-9.990	-0.097	-10.750	-38.029	-18.363	-11.597	-12.805	-4.049	-8.426	0.252	-1.349	-7.992	-4.221	-17.172	-7.627	-39.694	-0.297	-2.234	-38.061
react	1026	-2.214	-18.116	-17.566	-5.906	-10.917	-1.125	-12.478	-38.187	-21.545	-12.706	-14.723	-5.176	-4.969	-3.632	-2.476	-6.996	-3.942	-19.156	-7.321	-39.925	-2.552	-10.927	-38.824
react	1027	1.662	-16.521	-15.971	-6.743	-9.528	0.257	-9.888	-38.371	-16.777	-11.089	-11.850	-3.487	-7.782	0.244	-0.787	-8.626	-4.478	-16.463	-9.088	-38.791	0.827	-1.787	-35.936
react	1028	-0.063	-18.701	-18.151	-5.786	-11.297	-1.729	-13.658	-38.370	-23.085	-13.454	-15.876	-5.756	-7.475	-1.481	-3.056	-7.276	-3.999	-20.245	-7.980	-40.563	-3.712	-7.007	-39.817
react	1029	-0.443	-18.456	-17.906	-6.082	-11.085	-1.477	-13.046	-38.738	-22.249	-13.031	-15.188	-5.444	-6.436	-1.861	-2.744	-7.578	-4.118	-19.970	-8.186	-40.256	-3.088	-7.554	-39.505
react	1030	4.411	-13.080	-12.530	-7.071	-7.055	3.361	-4.219	-37.589	-7.759	-8.588	-5.728	-0.214	-8.440	2.993	2.486	-8.347	-4.805	-10.487	-8.853	-30.607	7.372	6.184	-29.055
react	1031	3.704	-15.032	-14.482	-6.881	-7.954	2.168	-7.114	-36.773	-11.457	-9.486	-8.168	-1.613	-10.021	2.286	1.087	-7.946	-4.616	-12.276	-8.545	-34.656	4.574	3.870	-32.959
react	1032	4.688	-11.994	-11.444	-6.767	-6.242	4.395	-2.236	-36.236	-4.721	-7.490	-3.917	0.899	-7.343	3.270	3.599	-8.055	-4.501	-7.731	-8.596	-30.029	9.597	7.550	-26.882
react	1033	3.827	-14.973	-14.423	-7.434	-7.895	2.270	-6.655	-38.742	-11.078	-9.422	-8.050	-1.454	-9.645	2.409	1.246	-8.967	-5.168	-13.322	-8.760	-34.727	4.893	4.176	-32.842
react	1034	4.310	-13.850	-13.300	-7.421	-7.275	3.033	-5.236	-38.264	-8.820	-8.805	-6.327	-0.634	-9.419	2.892	2.066	-8.959	-5.155	-11.638	-8.923	-33.129	6.531	5.762	-30.596
react	1035	2.830	-16.557	-16.007	-7.005	-8.473	1.422	-8.833	-36.994	-13.612	-10.039	-9.878	-2.432	-10.061	1.412	0.268	-8.441	-4.739	-13.787	-8.727	-38.849	2.937	1.603	-36.008
react	1036	3.667	-15.796	-15.246	-7.270	-8.026	2.072	-7.586	-37.652	-11.872	-9.264	-8.211	-1.785	-10.574	2.249	0.915	-8.191	-5.004	-13.148	-8.395	-36.393	4.230	3.724	-34.487
react	1037	3.404	-15.770	-15.220	-7.177	-8.372	1.681	-7.932	-38.104	-12.910	-9.908	-9.324	-2.131	-10.014	1.986	0.569	-8.309	-4.911	-14.025	-8.444	-37.253	3.538	2.853	-34.435
react	1038	5.669	-8.451	-7.901	-6.792	-4.657	6.476	1.205	-35.906	1.435	-6.320	1.091	3.184	-4.963	4.251	5.884	-7.728	-4.049	-3.702	-8.499	-19.629	14.168	11.098	-20.272
react	1039	5.618	-10.794	-10.244	-6.681	-5.589	5.254	-0.615	-34.970	-2.560	-7.157	-1.248	1.652	-7.511	4.200	4.352	-7.409	-3.938	-5.631	-7.897	-25.047	11.105	10.064	-24.960
react	1040	4.297	-13.657	-13.107	-6.262	-7.230	3.130	-5.190	-34.611	-8.682	-8.463	-6.338	-0.589	-8.869	2.879	2.112	-7.269	-3.997	-9.126	-7.944	-33.215	6.623	5.782	-30.207
react	1041	4.896	-11.031	-10.481	-7.348	-6.009	4.741	-1.298	-38.341	-3.621	-7.573	-3.057	1.332	-6.718	3.478	4.032	-8.931	-5.082	-8.412	-8.905	-23.731	10.464	8.200	-24.957
react	1042	4.866	-8.677	-8.127	-7.340	-4.504	6.753	0.303	-38.515	2.494	-6.261	0.475	3.637	-4.823	3.448	6.337	-8.985	-5.074	-4.686	-9.083	-17.649	15.074	9.645	-20.248
react	1043	2.329	-15.739	-15.189	-6.447	-8.919	0.928	-8.479	-37.057	-14.552	-10.449	-10.445	-2.678	-7.905	0.911	0.022	-8.340	-4.182	-14.239	-9.524	-35.393	2.443	0.155	-34.371
react	1044	-0.732	-16.921	-16.371	-6.493	-10.462	-0.801	-11.222	-39.085	-19.781	-12.063	-13.240	-4.521	-5.245	-2.150	-1.821	-8.176	-4.228	-18.663	-9.266	-37.060	-1.242	-7.510	-36.736
react	1045	-0.954	-16.916	-16.366	-6.636	-10.460	-0.771	-11.220	-39.515	-19.772	-12.060	-13.235	-4.519	-5.113	-2.372	-1.819	-8.301	-4.371	-18.946	-9.175	-39.589	-1.237	-7.950	-36.726
react	1046	4.200	-13.067	-12.517	-7.051	-7.296	3.079	-4.460	-38.028	-8.481	-8.826	-6.560	-0.455	-8.034	2.782	2.245	-8.657	-4.785	-11.181	-9.165	-28.253	6.891	5.522	-29.029

state	soln	si_Hydrocerussite	si_Hydromagnesite	si_K-Alum	si_K-Jarosite	si_K2Cr2O7	si_K2CrO4	si_Langite	si_Larnakite	si_Laurionite	si_Lepidocrocite	si_Li2CrO4	si_Lime	si_Litharge	si_Maghemite	si_Magnesioferrite	si_Magnesite	si_Magnetite	si_Malachite	si_Manganite	si_Massicot	si_Matlockite	si_Melanothallite	si_Melanterite
i_soln	101	-25.267	-54.583	-11.213	-15.909	-80.081	-48.280	-27.418	-11.331	-8.322	-4.017	-56.367	-27.681	-12.917	-11.678	-17.473	-9.547	-6.508	-15.683	-14.895	-13.117	-9.289	-20.863	-6.925
i_soln	102	-16.576	-47.096	-13.740	-8.728	-66.910	-40.969	-21.470	-9.785	-6.604	0.724	-50.838	-26.961	-10.202	-2.197	-6.714	-7.995	6.713	-10.494	-13.239	-10.402	-9.854	-20.398	-7.067
i_soln	103	-19.812	-50.273	-12.583	-10.893	-70.245	-42.837	-23.141	-10.426	-7.449	-0.684	-52.705	-27.365	-11.088	-5.012	-9.933	-8.688	2.690	-12.185	-14.143	-11.288	-10.204	-21.016	-7.146
i_soln	104	-18.073	-47.157	-12.647	-9.765	-67.897	-41.465	-21.914	-9.970	-7.086	-0.163	-51.333	-26.974	-10.701	-3.970	-8.500	-8.007	4.053	-11.123	-13.553	-10.901	-9.830	-20.677	-7.141
react	1001	-19.218	-51.359	-12.597	-11.272	-72.305	-43.868	-25.505	-10.591	-7.013	-0.869	-53.737	-27.971	-11.214	-5.382	-10.909	-8.808	2.436	-12.924	-14.750	-11.414	-10.176	-20.505	-6.942
react	1002	-18.975	-51.066	-12.497	-11.131	-72.050	-43.941	-24.605	-10.106	-6.983	-0.812	-53.207	-27.770	-11.014	-5.267	-10.593	-8.785	2.507	-12.695	-14.749	-11.214	-10.075	-20.641	-6.900
react	1003	-19.157	-49.015	-13.850	-10.897	-69.611	-42.518	-19.639	-11.096	-7.397	-0.216	-52.387	-27.353	-11.070	-4.076	-8.986	-8.376	4.094	-9.780	-12.902	-11.270	-10.283	-19.897	-7.382
react	1004	-18.582	-48.055	-13.735	-10.139	-68.434	-41.830	-22.043	-10.925	-7.236	0.150	-51.699	-27.157	-10.875	-3.344	-8.058	-8.185	5.092	-10.877	-12.606	-11.075	-10.377	-20.510	-7.336
react	1005	-19.570	-52.060	-12.480	-10.107	-72.657	-44.044	-25.371	-10.463	-7.037	-0.566	-54.514	-27.970	-11.214	-4.776	-10.303	-8.983	3.344	-13.097	-14.573	-11.414	-10.060	-20.551	-6.511
react	1006	-20.009	-53.307	-12.805	-12.197	-75.070	-45.449	-26.586	-10.648	-7.171	-1.428	-54.521	-28.363	-11.480	-6.500	-12.420	-9.197	0.959	-13.698	-15.166	-11.680	-9.770	-20.678	-6.826
react	1007	-3.614	-15.033	-27.439	-5.484	-29.270	-18.249	-8.203	-6.593	-5.354	5.672	-28.118	-18.324	-4.731	7.701	10.977	-1.927	17.659	-1.711	-0.813	-4.931	-9.852	-23.585	-13.769
react	1008	-3.584	-14.846	-27.162	-4.932	-29.273	-18.251	-8.109	-6.474	-5.381	5.744	-28.120	-18.220	-4.756	7.843	11.114	-1.879	17.873	-1.696	-0.744	-4.956	-9.704	-23.608	-13.529
react	1009	-3.917	-17.591	-23.765	-3.401	-31.557	-19.706	-6.724	-5.003	-5.557	5.094	-29.574	-18.345	-4.969	6.544	9.144	-2.398	16.224	-1.800	-2.830	-5.169	-9.371	-23.662	-11.982
react	1010	-4.792	-18.947	-20.446	0.625	-37.600	-23.429	-5.760	-5.058	-5.243	5.729	-33.296	-19.762	-5.702	7.814	9.614	-2.536	18.830	-1.361	-4.630	-5.902	-8.760	-21.680	-9.236
react	1011	-7.125	-21.003	-17.015	2.945	-44.382	-27.527	-9.202	-5.325	-5.588	5.660	-37.393	-21.849	-6.644	7.676	8.867	-2.898	19.322	-3.644	-6.469	-6.844	-8.261	-21.750	-6.988
react	1012	-27.599	-52.648	-10.112	-17.109	-83.546	-50.094	-28.205	-11.901	-7.964	-5.048	-59.702	-27.040	-13.695	-13.739	-19.149	-9.159	-9.400	-16.568	-15.600	-13.895	-8.714	-19.033	-6.770
react	1013	-5.651	-14.567	-18.906	0.211	-40.722	-25.358	-8.500	-4.915	-4.651	4.681	-34.012	-19.454	-6.405	5.718	7.893	-1.535	15.985	-2.880	-6.236	-6.605	-7.507	-20.163	-8.436
react	1014	-5.807	-29.374	-18.592	1.951	-44.709	-27.565	-10.106	-5.755	-5.105	6.135	-38.035	-22.948	-6.223	8.625	8.120	-4.567	20.946	-3.432	-6.682	-6.423	-8.003	-21.535	-7.585
react	1015	-4.253	-18.170	-22.236	-1.776	-35.757	-22.302	-9.435	-6.361	-5.267	5.613	-32.171	-19.364	-5.789	7.582	9.217	-2.301	18.281	-2.234	-4.293	-5.989	-8.432	-22.191	-10.681
react	1016	-10.437	-35.838	-15.617	-2.330	-55.496	-34.159	-15.858	-7.713	-6.005	3.792	-44.028	-24.749	-8.189	3.939	1.633	-5.733	14.817	-6.661	-9.529	-8.389	-8.488	-21.333	-7.054
react	1017	-18.858	-50.015	-13.415	-10.706	-71.415	-43.521	-24.256	-10.540	-7.181	-0.360	-53.389	-27.557	-10.973	-4.364	-9.478	-8.575	3.762	-12.265	-14.135	-11.173	-10.078	-20.903	-7.065
react	1018	-17.991	-49.328	-13.421	-10.626	-71.425	-43.526	-24.282	-10.200	-6.924	-0.331	-52.793	-27.560	-10.801	-4.306	-9.423	-8.403	3.849	-12.101	-14.439	-11.001	-9.827	-20.738	-7.039
react	1019	-23.028	-55.658	-13.779	-15.469	-76.855	-46.690	-26.821	-11.922	-7.994	-2.472	-55.956	-28.452	-12.169	-8.587	-14.596	-9.762	-2.122	-14.344	-14.702	-12.369	-9.879	-21.030	-7.716
react	1020	-17.964	-47.039	-14.522	-11.178	-67.234	-41.129	-22.876	-10.975	-7.240	0.083	-50.997	-26.949	-10.665	-3.479	-7.985	-7.983	4.790	-11.065	-13.528	-10.865	-10.231	-21.028	-7.973
react	1021	-17.370	-46.053	-14.887	-9.762	-65.702	-40.262	-22.239	-10.746	-7.195	0.639	-50.131	-26.746	-10.462	-2.366	-6.669	-7.787	6.360	-10.665	-13.225	-10.662	-9.897	-21.142	-7.694
react	1022	-15.644	-43.188	-15.220	-8.026	-63.191	-38.706	-20.438	-10.142	-6.905	1.513	-48.575	-26.145	-9.864	-0.619	-4.321	-7.221	8.680	-9.503	-11.722	-10.064	-9.596	-21.160	-7.713
react	1023	-18.349	-50.040	-13.339	-10.876	-70.826	-43.228	-23.101	-10.219	-6.904	-0.404	-52.494	-27.561	-10.803	-4.453	-9.571	-8.580	3.629	-11.679	-14.441	-11.003	-9.918	-20.395	-7.127
react	1024	-22.152	-54.191	-13.526	-14.794	-75.037	-45.632	-25.902	-11.587	-7.749	-2.128	-54.546	-28.157	-11.875	-7.900	-13.614	-9.469	-1.242	-13.761	-14.859	-12.075	-9.936	-20.835	-7.775
react	1025	-22.254	-54.308	-12.997	-14.482	-75.110	-45.673	-25.744	-11.346	-7.435	-2.229	-53.792	-28.181	-11.909	-8.101	-13.838	-9.493	-1.544	-13.836	-15.361	-12.109	-9.561	-20.178	-7.566
react	1026	-23.538	-54.887	-15.686	-16.670	-77.708	-47.176	-26.761	-11.506	-7.534	-3.356	-55.045	-28.601	-12.339	-10.356	-16.211	-9.608	-4.726	-14.691	-15.505	-12.539	-7.721	-19.944	-7.795
react	1027	-20.922	-51.952	-13.875	-13.666	-73.802	-44.912	-25.229	-11.345	-7.884	-1.667	-53.826	-27.949	-11.665	-6.977	-12.482	-8.962	0.043	-13.035	-15.027	-11.865	-9.804	-21.313	-7.593
react	1028	-24.652	-55.910	-13.080	-17.955	-80.073	-48.555	-27.894	-11.926	-7.985	-3.936	-56.733	-28.983	-12.712	-11.516	-17.578	-9.812	-6.266	-15.419	-15.784	-12.912	-9.234	-20.466	-7.849
react	1029	-24.007	-55.740	-14.019	-17.578	-78.792	-47.812	-27.366	-11.826	-7.973	-3.624	-56.282	-28.772	-12.496	-10.892	-16.918	-9.778	-5.429	-14.990	-15.649	-12.696	-8.809	-20.658	-7.968
react	1030	-14.469	-43.478	-14.169	-6.892	-63.756	-39.091	-20.808	-9.133	-6.380	1.606	-48.960	-26.355	-9.598	-0.432	-4.344	-7.241	9.060	-9.737	-12.032	-9.798	-9.426	-20.853	-7.041
react	1031	-17.064	-48.397	-12.670	-8.883	-68.702	-41.767	-23.676	-9.711	-6.585	0.207	-51.635	-27.370	-10.490	-3.231	-8.158	-8.217	5.363	-11.734	-13.549	-10.690	-9.914	-20.499	-6.736
react	1032	-12.140	-40.709	-14.175	-3.837	-60.360	-37.094	-18.738	-7.803	-5.834	2.719	-46.962	-25.760	-8.788	1.793	-1.524	-6.698	12.098	-8.609	-11.740	-8.988	-8.628	-20.791	-6.519
react	1033	-17.688	-48.069	-14.270	-10.128	-68.441	-41.835	-22.382	-10.649	-6.865	0.366	-51.704	-27.160	-10.577	-2.911	-7.628	-8.188	5.741	-10.887	-13.539	-10.777	-10.111	-20.369	-7.439
react	1034	-15.642	-45.424	-14.361	-8.244	-65.738	-40.284	-21.177	-9.888	-6.478	1.186	-50.152	-26.761	-10.003	-1.273	-5.591	-7.627	7.999	-9.929	-12.940	-10.203	-9.810	-20.345	-7.206
react	1035	-20.081	-52.042	-13.200	-10.995	-72.895	-44.463	-24.373	-11.028	-7.237	-0.612	-54.332	-27.966	-11.384	-4.867	-10.390	-8.980	3.207	-12.485	-15.046	-11.584	-10.288	-20.306	-6.782
react	1036	-17.314	-50.135	-12.990	-9.682	-69.127	-41.906	-22.813	-9.827	-6.301	0.035	-52.127	-27.580	-10.458	-3.574	-8.711	-8.600	4.947	-11.386	-14.161	-10.658	-9.802	-19.733	-6.986
react	1037	-18.369	-50.070	-13.266	-10.732	-70.240	-42.635	-24.561	-10.450	-6.802	-0.311	-52.151	-27.567	-10.810	-4.266	-9.390	-8.586	3.909	-12.300	-14.448	-11.010	-10.029	-20.489	-7.252
react	1038	-7.038	-33.189	-15.023	1.190	-50.741	-31.286	-11.963	-6.008	-4.909	5.004	-40.200	-23.895	-7.183	6.364	4.435	-5.165	18.254	-4.370	-8.040	-7.383	-7.446	-20.103	-6.348
react	1039	-10.154	-39.098	-12.838	-1.168	-56.607	-34.649	-14.435	-6.819	-4.950	3.472	-43.665	-25.117	-8.256	3.301	0.150	-6.337	14.259	-6.222	-10.046	-8.456	-8.150	-18.991	-5.946
react	1040	-14.241	-45.061	-11.705	-5.437	-65.204	-39.721	-18.923	-7.933	-5.923	1.232	-49.237	-26.790	-9.619	-1.181	-5.526	-7.529	8.137	-9.271	-12.969	-9.819	-8.966	-19.736	-5.974
react	1041	-11.968	-38.376	-15.746	-4.316	-58.129	-35.777	-18.104	-8.775	-6.114	3.152	-45.645	-25.351	-8.778	2.660	-0.248	-6.217	13.198	-7.725	-9.574	-8.978	-8.801	-20.964	-7.277
react	1042	-7.660	-32.064	-18.164	0.211	-49.701	-30.762	-12.364	-6.930	-5.372	5.457	-40.630	-23.748	-7.059	7.270	5.965	-5.040	19.314	-4.483	-7.280	-7.259	-7.913	-21.086	-7.366
react	1043	-19.751	-49.989	-13.209	-11.243	-71.406	-43.514	-23.733	-10.658	-7.950	-0.858	-53.382	-27.552	-11.271	-5.361	-10.469	-8.570	2.267	-12.243	-13.828	-11.471	-10.130	-21.834	-7.085
react	1044	-21.529	-52.953	-15.465	-15.966	-75.057	-45.639	-25.577	-11.301	-8.166	-2.701	-55.508	-28.151	-11.868	-9.046	-14.753	-9.161	-2.961	-13.433	-14.483	-12.068	-8.717	-21.670	-8.076
react	1045	-21.518	-52.941	-15.977	-16.248	-75.054	-45.638	-25.716	-11.438	-8.071	-2.699	-55.506	-28.148	-11.865	-9.041	-14.746	-9.159	-2.953	-13.430	-15.326	-12.065	-8.557	-21.486	-8.218
react	1046	-14.973	-43.446	-14.350	-7.584	-64.344	-39.383	-20.758	-9.456	-6.686	1.365	-49.252	-26.349	-9.767	-0.913	-4.819	-7.235	8.338	-9.719	-11.248	-9.967	-9.532	-21.119	-7.268

state	soln	si_Mg(OH)2(active)	si_Mg(VO3)2	si_Mg2V2O7	si_MgCr2O4	si_MgCrO4	si_MgF2	si_Minium	si_Mirabilite	si_Mn(VO3)2	si_Mn2(SO4)3	si_Mn3(AsO4)2:8H2O	si_MnCl2:4H2O	si_MnSO4	si_Monteponite	si_Morenosite	si_Na-Jarosite	si_Na2Cr2O7	si_Na2CrO4	si_Na3VO4	si_Na4V2O7	si_Nantokite	si_Natron	si_NaVO3
i_soln	101	-14.116	-26.248	-36.650	-23.030	-49.232	-8.318	-57.790	-7.229	-22.301	-58.058	-26.753	-15.423	-11.658	-15.998	-7.355	-17.888	-84.186	-48.482	-42.038	-51.091	-5.909	-17.396	-12.192
i_soln	102	-12.838	-20.968	-30.092	-16.032	-42.094	-11.606	-47.647	-11.486	-17.644	-66.396	-25.517	-16.760	-14.885	-13.832	-10.485	-11.621	-72.842	-42.997	-40.599	-47.839	-5.447	-17.497	-10.379
i_soln	103	-13.241	-22.171	-31.698	-18.170	-43.965	-11.021	-50.703	-10.021	-19.147	-64.816	-27.232	-17.382	-14.460	-14.231	-9.760	-13.417	-75.440	-44.129	-40.495	-47.966	-5.907	-17.451	-10.611
i_soln	104	-12.850	-20.980	-30.116	-17.028	-42.598	-10.608	-49.144	-9.403	-17.957	-64.585	-26.461	-17.039	-14.386	-13.846	-9.685	-12.020	-72.555	-42.219	-38.694	-45.299	-5.744	-16.227	-9.744
react	1001	-13.848	-23.978	-34.112	-19.035	-45.600	-12.442	-51.682	-11.024	-20.654	-65.765	-27.628	-16.565	-14.678	-14.847	-10.278	-14.340	-78.589	-46.248	-42.732	-51.348	-5.658	-18.056	-11.756
react	1002	-13.646	-23.376	-33.308	-18.777	-45.070	-12.099	-50.882	-10.385	-20.353	-65.509	-28.083	-17.004	-14.693	-14.642	-9.992	-13.723	-77.379	-45.367	-41.701	-49.841	-5.724	-17.680	-11.279
react	1003	-13.231	-22.160	-31.677	-17.530	-43.639	-11.271	-50.650	-11.458	-17.906	-64.448	-23.504	-16.073	-13.923	-14.220	-10.453	-13.789	-75.543	-44.546	-41.594	-49.431	-4.821	-17.883	-10.977
react	1004	-13.034	-21.564	-30.885	-16.954	-42.953	-11.585	-49.865	-11.480	-17.310	-64.515	-23.115	-15.945	-13.947	-14.026	-10.477	-13.031	-74.366	-43.859	-41.097	-48.635	-5.501	-17.689	-10.678
react	1005	-13.847	-23.977	-34.110	-19.386	-45.775	-12.163	-51.681	-10.895	-20.477	-65.027	-27.097	-16.436	-14.374	-14.845	-10.149	-13.175	-78.940	-46.424	-42.731	-51.347	-5.680	-18.231	-11.756
react	1006	-14.240	-25.170	-35.697	-20.596	-47.177	-11.707	-52.881	-10.751	-21.670	-65.171	-28.087	-16.565	-14.419	-15.235	-10.195	-15.168	-81.160	-47.635	-43.435	-52.553	-5.739	-18.254	-12.258
react	1007	-5.044	-15.880	-17.211	-1.798	-19.380	-6.309	-23.433	-11.437	-11.822	-64.795	-12.094	-16.675	-14.109	-6.147	-10.663	-8.376	-35.201	-20.277	-30.252	-34.945	-8.314	-11.423	-7.832
react	1008	-5.049	-15.892	-17.227	-1.804	-19.386	-5.964	-23.509	-11.622	-11.761	-64.151	-11.897	-16.612	-13.872	-6.160	-10.509	-8.001	-35.557	-20.632	-30.787	-35.659	-8.335	-11.724	-8.012
react	1009	-5.720	-15.611	-17.617	-2.333	-20.885	-5.617	-24.746	-9.998	-12.595	-62.632	-16.160	-18.323	-13.761	-6.753	-9.142	-6.293	-37.488	-21.734	-30.720	-35.253	-8.126	-11.845	-7.673
react	1010	-6.521	-14.366	-17.173	-3.575	-24.006	-5.824	-28.345	-9.990	-11.649	-62.001	-16.709	-17.330	-13.450	-8.124	-9.067	-2.267	-43.530	-25.456	-31.801	-36.012	-6.491	-12.586	-7.351
react	1011	-7.129	-13.371	-16.786	-5.352	-27.300	-4.745	-32.572	-8.831	-11.185	-60.828	-17.544	-17.274	-12.972	-9.557	-8.395	0.530	-49.358	-28.599	-31.686	-35.325	-6.458	-12.797	-6.778
react	1012	-13.731	-26.667	-36.683	-24.747	-50.498	-7.499	-60.526	-7.781	-23.610	-56.507	-28.904	-13.656	-11.176	-16.458	-7.072	-19.776	-89.027	-51.671	-44.746	-54.970	-5.015	-18.934	-13.363
react	1013	-6.145	-13.516	-15.946	-3.786	-24.824	-4.126	-31.054	-8.217	-12.481	-60.563	-20.072	-16.046	-13.206	-9.140	-7.980	-2.201	-45.693	-26.425	-31.225	-35.087	-5.968	-11.737	-7.001
react	1014	-8.826	-14.588	-19.700	-6.428	-29.285	-6.890	-31.709	-11.409	-10.719	-65.069	-16.135	-17.164	-14.257	-9.808	-10.103	-1.243	-51.243	-30.195	-33.406	-37.459	-6.105	-14.076	-7.192
react	1015	-6.685	-15.041	-18.012	-3.508	-23.455	-5.284	-28.205	-11.061	-12.022	-64.712	-17.040	-17.067	-14.442	-7.721	-9.826	-4.845	-42.041	-24.683	-31.969	-36.407	-7.265	-12.128	-7.578
react	1016	-10.626	-15.068	-21.980	-11.213	-35.278	-7.861	-39.408	-11.234	-11.345	-64.838	-20.043	-16.977	-14.229	-11.611	-10.229	-5.222	-61.428	-36.187	-35.446	-39.738	-6.069	-15.241	-7.432
react	1017	-13.434	-22.764	-32.483	-18.736	-44.643	-11.497	-50.559	-11.297	-19.439	-65.827	-26.713	-16.968	-14.694	-14.424	-10.295	-13.598	-77.347	-45.549	-42.096	-50.234	-5.847	-18.080	-11.278
react	1018	-13.437	-22.767	-32.490	-18.746	-44.650	-11.510	-50.044	-10.859	-19.743	-66.448	-27.629	-17.102	-15.002	-14.431	-10.302	-13.296	-76.912	-45.111	-41.433	-49.350	-5.767	-17.462	-11.057
react	1019	-14.329	-25.460	-36.075	-21.474	-47.810	-10.369	-55.047	-10.833	-21.356	-63.933	-26.541	-16.318	-13.802	-15.318	-10.004	-18.185	-82.435	-48.366	-43.814	-53.125	-5.907	-18.916	-12.451
react	1020	-12.826	-20.957	-30.069	-16.350	-42.247	-11.077	-49.035	-12.098	-17.932	-67.768	-26.378	-17.394	-15.439	-13.815	-10.738	-14.246	-73.518	-43.509	-41.120	-48.533	-5.906	-17.844	-10.552
react	1021	-12.623	-20.354	-29.263	-15.417	-41.379	-10.294	-48.226	-12.074	-17.330	-67.694	-25.968	-17.509	-15.413	-13.610	-10.713	-12.831	-71.986	-42.642	-40.617	-47.730	-5.961	-17.650	-10.252
react	1022	-12.023	-18.561	-26.870	-14.705	-39.823	-9.673	-45.831	-12.065	-14.934	-66.464	-22.977	-16.922	-14.802	-13.009	-10.704	-11.094	-69.475	-41.086	-39.121	-45.337	-5.971	-17.084	-9.356
react	1023	-13.439	-22.768	-32.493	-18.149	-44.352	-11.735	-50.049	-10.875	-19.745	-66.496	-27.635	-17.060	-15.019	-14.433	-10.318	-13.547	-76.314	-44.812	-41.434	-49.352	-5.446	-17.639	-11.057
react	1024	-14.034	-24.564	-34.884	-20.558	-46.755	-10.676	-53.866	-10.404	-21.063	-65.003	-27.526	-16.723	-14.361	-15.026	-9.836	-17.318	-80.233	-46.924	-42.492	-51.162	-5.813	-18.237	-11.810
react	1025	-14.057	-24.587	-34.931	-20.643	-46.809	-10.578	-53.968	-9.091	-21.566	-65.079	-29.043	-16.531	-14.554	-15.068	-9.551	-16.499	-79.291	-45.951	-40.986	-49.155	-5.504	-17.234	-11.308
react	1026	-14.176	-25.506	-35.968	-21.752	-48.022	-6.818	-55.657	-8.441	-22.310	-63.270	-28.837	-15.812	-13.799	-15.499	-9.096	-18.508	-81.531	-47.096	-41.460	-50.054	-5.401	-17.280	-11.733
react	1027	-13.825	-23.956	-34.067	-19.918	-46.030	-9.935	-53.034	-11.115	-20.931	-65.877	-28.447	-17.683	-14.808	-14.810	-9.807	-16.558	-79.733	-46.940	-43.089	-51.825	-6.046	-18.470	-11.876
react	1028	-14.382	-26.513	-37.180	-22.731	-49.215	-9.148	-57.176	-9.278	-23.189	-62.852	-29.410	-16.048	-13.552	-15.861	-8.483	-20.178	-84.667	-49.245	-43.604	-53.179	-5.645	-18.441	-12.714
react	1029	-14.347	-26.078	-36.711	-22.220	-48.642	-8.286	-56.329	-9.613	-22.754	-63.573	-29.083	-16.420	-13.847	-15.644	-8.794	-19.906	-83.595	-48.711	-43.411	-52.788	-5.733	-18.446	-12.517
react	1030	-12.232	-19.166	-27.685	-14.675	-40.213	-10.592	-45.235	-11.440	-15.541	-65.651	-23.406	-16.613	-14.535	-13.224	-10.436	-9.785	-69.688	-41.119	-39.097	-45.437	-5.823	-16.747	-9.480
react	1031	-13.247	-22.177	-31.711	-17.231	-43.498	-12.173	-48.909	-10.992	-18.553	-65.070	-25.453	-16.257	-14.346	-14.247	-10.247	-11.952	-74.986	-44.147	-41.231	-48.948	-5.655	-17.465	-10.856
react	1032	-11.637	-17.401	-25.324	-13.082	-38.218	-9.495	-42.203	-10.689	-14.378	-65.938	-23.459	-17.149	-14.833	-12.630	-10.132	-6.507	-65.848	-38.678	-36.949	-42.184	-5.797	-15.757	-8.374
react	1033	-13.037	-21.567	-30.891	-16.963	-42.959	-11.798	-48.971	-11.800	-18.243	-67.338	-25.915	-16.731	-15.199	-14.032	-10.799	-13.021	-74.373	-43.863	-41.099	-48.639	-5.433	-17.691	-10.679
react	1034	-12.638	-20.369	-29.293	-15.460	-41.408	-11.571	-46.849	-12.140	-17.045	-67.300	-25.122	-16.706	-15.187	-13.634	-10.787	-11.313	-72.022	-42.664	-40.629	-47.745	-5.422	-17.482	-10.256
react	1035	-13.843	-23.973	-34.103	-19.019	-45.590	-12.214	-52.193	-11.369	-20.951	-66.649	-28.515	-16.970	-15.072	-14.840	-10.371	-13.887	-78.826	-46.491	-43.103	-51.844	-5.405	-18.479	-11.880
react	1036	-13.457	-22.787	-32.531	-17.413	-43.994	-12.727	-49.014	-11.376	-19.465	-66.829	-26.203	-16.264	-15.037	-14.466	-10.635	-12.926	-75.763	-44.638	-41.739	-49.759	-5.042	-17.843	-11.159
react	1037	-13.444	-22.774	-32.505	-18.167	-44.364	-12.167	-50.069	-11.096	-19.752	-67.162	-27.658	-16.849	-15.243	-14.444	-10.542	-13.704	-76.330	-44.821	-41.439	-49.358	-5.648	-17.642	-11.059
react	1038	-10.249	-14.156	-20.691	-8.271	-33.019	-7.593	-35.990	-10.550	-9.521	-62.778	-16.689	-15.508	-13.246	-11.242	-9.205	-1.702	-56.672	-33.314	-33.692	-37.222	-5.129	-14.059	-6.669
react	1039	-11.471	-16.267	-24.024	-10.901	-36.745	-10.140	-40.407	-10.075	-11.816	-62.791	-19.517	-14.851	-13.319	-12.492	-8.934	-4.060	-62.539	-36.677	-35.425	-39.828	-4.449	-14.868	-7.543
react	1040	-12.665	-20.396	-29.347	-15.544	-41.463	-11.020	-45.697	-9.338	-17.073	-63.797	-24.617	-16.393	-14.029	-13.671	-9.628	-7.994	-70.464	-41.077	-38.205	-44.514	-4.984	-15.741	-9.448
react	1041	-11.228	-16.287	-23.801	-12.046	-36.896	-8.871	-41.775	-11.719	-11.706	-64.578	-18.593	-15.762	-13.857	-12.218	-10.413	-7.208	-64.061	-37.805	-36.657	-41.558	-5.880	-15.725	-8.041
react	1042	-9.625	-14.589	-20.500	-8.417	-31.880	-6.976	-35.016	-11.712	-10.117	-64.774	-16.097	-16.224	-13.958	-10.610	-10.229	-2.681	-55.633	-32.790	-34.207	-38.260	-5.825	-14.549	-7.193
react	1043	-13.428	-22.758	-32.473	-18.725	-44.635	-10.057	-51.452	-11.168	-19.132	-63.781	-25.787	-17.604	-13.910	-14.410	-9.812	-14.311	-77.689	-45.894	-42.618	-50.930	-6.307	-18.428	-11.452
react	1044	-14.027	-24.557	-34.871	-20.575	-46.760	-7.397	-53.845	-10.863	-20.688	-63.435	-26.395	-17.195	-13.713	-15.009	-9.557	-18.859	-80.989	-47.667	-43.589	-52.625	-6.224	-18.668	-12.176
react	1045	-14.025	-24.555	-34.866	-20.571	-46.757	-7.265	-53.834	-11.008	-21.530	-65.556	-28.923	-17.856	-14.701	-15.008	-9.700	-19.141	-80.986	-47.666	-43.588	-52.624	-6.132	-18.667	-12.175
react	1046	-12.226	-19.160	-27.672	-15.260	-40.502	-10.186	-45.740	-11.775	-14.756	-64.039	-21.048	-16.103	-13.736	-13.213	-9.939	-10.653	-70.628	-41.764	-39.621	-46.135	-5.951	-17.096	-9.654

state	soln	si_Nesquehonite	si_Ni(OH)2	si_Ni3(AsO4)2:8H2O	si_Ni4(OH)6SO4	si_NiCO3	si_Nsutite	si_O2(g)	si_Otavite	si_Pb(BO2)2	si_Pb(OH)2	si_Pb10(OH)6O(CO3)6	si_Pb2(OH)3Cl	si_Pb2O(OH)2	si_Pb2O3	si_Pb2OCO3	si_Pb2V2O7	si_Pb3(AsO4)2	si_Pb3(VO4)2	si_Pb3O2CO3	si_Pb3O2SO4	si_Pb4(OH)6SO4	si_Pb4O3SO4	si_PbCrO4
i_soln	101	-12.337	-10.973	-31.226	-36.038	-12.994	-24.209	-50.290	-10.579	-16.012	-8.373	-123.575	-16.715	-26.633	-45.085	-21.572	-18.191	-27.456	-26.454	-33.373	-22.674	-33.311	-34.088	-36.152
i_soln	102	-10.785	-10.221	-29.701	-36.912	-11.968	-21.553	-46.289	-8.140	-13.007	-5.658	-94.789	-12.283	-21.205	-37.657	-15.870	-8.761	-20.044	-14.309	-24.956	-18.415	-26.336	-27.114	-27.578
i_soln	103	-11.478	-10.625	-30.514	-37.397	-12.662	-22.657	-47.089	-8.828	-14.184	-6.544	-105.381	-14.012	-22.975	-39.827	-17.930	-11.331	-22.302	-17.765	-27.902	-19.941	-28.748	-29.525	-29.931
i_soln	104	-10.797	-10.234	-29.743	-36.150	-11.981	-21.867	-46.289	-8.154	-13.584	-6.157	-99.778	-13.263	-22.203	-38.655	-16.868	-9.759	-21.544	-15.806	-26.453	-19.098	-27.519	-28.296	-28.569
react	1001	-11.598	-11.231	-31.810	-39.735	-12.782	-23.564	-48.289	-8.958	-13.947	-6.670	-103.726	-13.703	-23.228	-40.680	-17.697	-12.784	-22.158	-19.344	-27.794	-20.232	-29.165	-29.943	-31.086
react	1002	-11.575	-11.030	-31.363	-38.844	-12.759	-23.463	-47.889	-8.932	-13.640	-6.470	-102.796	-13.472	-22.828	-40.080	-17.475	-11.984	-21.715	-18.344	-27.373	-19.547	-28.280	-29.057	-30.558
react	1003	-11.166	-10.614	-30.478	-38.058	-12.350	-21.416	-47.089	-8.517	-14.239	-6.526	-103.398	-13.943	-22.940	-39.792	-17.594	-11.296	-22.246	-17.712	-27.548	-20.593	-29.382	-30.159	-29.598
react	1004	-10.975	-10.418	-30.088	-37.493	-12.159	-21.020	-46.689	-8.328	-14.007	-6.331	-101.477	-13.586	-22.550	-39.202	-17.209	-10.506	-21.859	-16.727	-26.967	-20.227	-28.822	-29.599	-28.914
react	1005	-11.773	-11.231	-31.808	-39.605	-12.957	-23.387	-48.289	-9.132	-13.781	-6.670	-104.780	-13.726	-23.228	-40.680	-17.872	-12.784	-22.157	-19.344	-27.970	-20.103	-29.037	-29.814	-31.262
react	1006	-11.987	-11.624	-32.799	-40.829	-13.170	-24.180	-49.089	-9.342	-14.336	-6.936	-106.366	-14.127	-23.761	-41.613	-18.225	-14.117	-22.768	-20.943	-28.589	-20.555	-29.755	-30.532	-32.537
react	1007	-4.717	-2.648	-19.138	-14.369	-6.120	-5.227	-30.689	-2.181	-8.708	-0.187	-50.430	-5.561	-10.262	-18.914	-6.653	-0.524	-15.787	-0.601	-10.268	-9.751	-12.202	-12.979	-7.187
react	1008	-4.669	-2.663	-19.192	-14.262	-6.083	-5.158	-30.689	-2.141	-8.791	-0.212	-50.365	-5.613	-10.312	-18.964	-6.650	-0.581	-15.871	-0.683	-10.290	-9.657	-12.133	-12.910	-7.212
react	1009	-5.188	-3.193	-19.687	-14.484	-6.461	-7.544	-31.889	-2.581	-8.553	-0.425	-51.579	-6.002	-10.738	-19.990	-6.924	-0.054	-15.414	-0.369	-10.776	-8.398	-11.087	-11.864	-8.254
react	1010	-5.327	-4.529	-20.943	-18.416	-7.134	-10.044	-34.689	-3.291	-9.433	-1.158	-54.934	-6.421	-12.203	-22.855	-7.727	0.526	-14.861	-0.522	-12.312	-9.186	-12.607	-13.384	-11.307
react	1011	-5.688	-5.474	-21.196	-20.580	-7.833	-12.583	-37.489	-4.476	-9.948	-2.100	-62.876	-7.707	-14.088	-26.140	-9.365	0.245	-15.105	-1.745	-14.893	-10.396	-14.759	-15.537	-14.934
react	1012	-11.950	-11.676	-33.971	-37.862	-13.695	-25.114	-51.090	-11.038	-16.144	-9.152	-131.349	-17.136	-28.191	-47.043	-23.127	-20.553	-30.426	-29.594	-35.706	-24.023	-35.439	-36.215	-38.583
react	1013	-4.326	-4.990	-21.771	-18.709	-6.970	-11.950	-35.890	-3.681	-9.778	-1.861	-58.215	-6.532	-13.610	-24.862	-8.508	-0.406	-16.415	-2.157	-13.797	-9.746	-13.871	-14.648	-13.204
react	1014	-7.357	-5.910	-21.058	-23.597	-8.242	-12.996	-38.289	-4.700	-9.011	-1.679	-58.501	-6.804	-13.246	-25.698	-8.495	1.566	-12.395	-0.003	-13.602	-10.405	-14.348	-15.125	-14.803
react	1015	-5.091	-4.158	-20.575	-18.063	-6.364	-9.507	-33.889	-2.488	-9.492	-1.245	-53.406	-6.532	-12.377	-22.629	-7.501	-0.159	-15.866	-1.293	-12.174	-10.576	-14.084	-14.861	-10.678
react	1016	-8.523	-8.011	-25.426	-30.023	-9.707	-16.743	-41.889	-5.868	-11.220	-3.645	-74.356	-9.670	-17.179	-31.431	-11.793	-1.046	-16.362	-4.582	-18.866	-14.329	-20.238	-21.015	-20.961
react	1017	-11.366	-10.817	-30.898	-38.509	-12.549	-22.749	-47.489	-8.717	-13.777	-6.429	-102.404	-13.630	-22.746	-39.798	-17.396	-11.502	-21.765	-17.821	-27.252	-19.939	-28.632	-29.409	-30.303
react	1018	-11.193	-10.821	-30.910	-38.526	-12.376	-23.053	-47.489	-8.547	-13.582	-6.257	-99.633	-13.202	-22.403	-39.455	-16.877	-11.159	-21.253	-17.306	-26.562	-19.429	-27.950	-28.727	-30.135
react	1019	-12.552	-11.537	-32.533	-40.377	-13.559	-23.766	-49.289	-9.901	-15.482	-7.625	-116.110	-15.638	-25.138	-43.090	-20.079	-15.694	-24.830	-23.209	-31.132	-22.518	-32.406	-33.183	-33.770
react	1020	-10.773	-10.210	-29.660	-37.131	-11.957	-21.842	-46.289	-8.122	-13.914	-6.121	-99.416	-13.381	-22.130	-38.582	-16.795	-9.687	-21.426	-15.698	-26.344	-20.067	-28.452	-29.229	-28.206
react	1021	-10.577	-10.007	-29.251	-36.495	-11.761	-21.439	-45.889	-7.925	-13.753	-5.918	-97.428	-13.133	-21.724	-37.976	-16.396	-8.881	-21.017	-14.689	-25.742	-19.635	-27.817	-28.594	-27.337
react	1022	-10.011	-9.406	-28.067	-34.685	-11.195	-19.636	-44.689	-7.358	-13.072	-5.320	-91.653	-12.245	-20.527	-36.179	-15.234	-6.492	-19.840	-11.701	-23.982	-18.433	-26.016	-26.793	-25.784
react	1023	-11.370	-10.822	-30.916	-38.547	-12.554	-23.055	-47.489	-8.726	-13.429	-6.259	-100.706	-13.183	-22.406	-39.458	-17.056	-11.162	-21.259	-17.311	-26.743	-19.448	-27.971	-28.748	-29.837
react	1024	-12.259	-11.117	-31.336	-38.949	-13.142	-23.773	-48.689	-9.612	-14.938	-7.331	-113.189	-15.100	-24.551	-42.203	-19.494	-14.507	-24.013	-21.728	-30.253	-21.889	-31.484	-32.262	-32.716
react	1025	-12.283	-11.141	-31.418	-38.735	-13.166	-24.275	-48.689	-9.654	-15.137	-7.365	-113.530	-14.821	-24.619	-42.271	-19.562	-14.575	-24.125	-21.830	-30.356	-21.682	-31.311	-32.088	-32.781
react	1026	-12.398	-11.384	-32.112	-39.011	-13.407	-24.619	-49.489	-10.082	-15.337	-7.795	-117.810	-15.349	-25.478	-43.530	-20.419	-16.235	-25.377	-23.920	-31.642	-22.272	-32.331	-33.108	-34.306
react	1027	-11.752	-10.908	-30.828	-38.293	-12.634	-23.841	-48.289	-9.097	-14.797	-7.121	-109.288	-15.025	-24.130	-41.582	-18.774	-13.686	-23.499	-20.696	-29.322	-21.437	-30.821	-31.598	-31.990
react	1028	-12.602	-11.097	-31.586	-37.536	-13.117	-25.098	-50.289	-10.442	-16.094	-8.168	-121.526	-16.173	-26.224	-44.676	-21.163	-17.781	-26.831	-25.839	-32.758	-23.065	-33.496	-34.274	-35.665
react	1029	-12.568	-11.078	-31.308	-37.790	-13.099	-24.863	-49.889	-10.226	-16.306	-7.952	-119.375	-15.945	-25.793	-44.045	-20.732	-16.949	-25.964	-24.792	-32.112	-22.749	-32.965	-33.742	-34.912
react	1030	-10.031	-9.616	-28.495	-35.047	-11.215	-20.046	-45.089	-7.383	-12.379	-5.054	-87.861	-11.455	-19.997	-35.849	-14.514	-6.357	-18.842	-11.301	-22.996	-17.158	-24.476	-25.254	-25.699
react	1031	-11.007	-10.631	-30.539	-37.903	-12.191	-22.063	-47.089	-8.367	-13.076	-5.946	-96.541	-12.551	-21.780	-38.632	-16.258	-10.135	-20.514	-15.971	-25.631	-18.628	-26.837	-27.614	-28.860
react	1032	-9.488	-9.021	-26.741	-32.958	-10.672	-19.454	-43.889	-6.842	-11.544	-4.244	-80.066	-10.098	-18.376	-33.628	-12.945	-3.566	-16.441	-7.699	-20.616	-15.018	-21.525	-22.302	-23.489
react	1033	-10.978	-10.421	-30.099	-37.824	-12.162	-21.953	-46.689	-8.334	-13.674	-6.033	-98.498	-12.918	-21.954	-38.606	-16.613	-9.910	-20.968	-15.833	-26.074	-19.652	-27.949	-28.726	-28.618
react	1034	-10.417	-10.022	-29.306	-36.615	-11.600	-21.154	-45.889	-7.773	-13.211	-5.459	-91.786	-11.957	-20.806	-37.058	-15.303	-7.963	-19.650	-13.312	-24.190	-18.318	-26.040	-26.817	-26.893
react	1035	-11.770	-11.227	-31.795	-39.815	-12.953	-23.860	-48.289	-9.127	-14.240	-6.840	-106.484	-14.098	-23.568	-41.020	-18.213	-13.124	-22.666	-19.855	-28.481	-20.839	-29.943	-30.720	-31.251
react	1036	-11.390	-10.841	-30.382	-38.922	-12.573	-22.775	-47.489	-8.759	-12.902	-5.914	-97.258	-12.235	-21.716	-38.768	-16.367	-10.472	-19.633	-16.276	-25.708	-18.712	-26.889	-27.666	-29.115
react	1037	-11.376	-10.828	-30.937	-38.789	-12.560	-23.062	-47.489	-8.737	-13.436	-6.266	-100.774	-13.088	-22.420	-39.472	-17.070	-11.176	-21.283	-17.332	-26.764	-19.687	-28.216	-28.993	-29.850
react	1038	-7.955	-6.680	-21.950	-25.009	-8.186	-15.054	-41.089	-5.309	-9.566	-2.639	-63.153	-7.568	-15.167	-29.019	-9.591	1.500	-13.859	-1.029	-15.658	-11.618	-16.521	-17.298	-18.073
react	1039	-9.127	-7.742	-23.744	-27.922	-9.198	-17.660	-43.489	-6.509	-10.310	-3.712	-73.576	-8.681	-17.311	-32.363	-11.685	-1.534	-15.685	-5.135	-18.825	-13.502	-19.477	-20.254	-21.649
react	1040	-10.319	-10.050	-28.799	-35.540	-11.504	-21.183	-45.889	-7.685	-11.970	-5.075	-87.199	-11.018	-20.038	-36.290	-14.410	-7.195	-17.907	-12.160	-22.913	-15.979	-23.318	-24.095	-26.537
react	1041	-9.007	-8.311	-25.643	-31.108	-9.890	-17.088	-43.089	-6.357	-11.809	-4.234	-79.540	-10.368	-18.357	-33.209	-12.854	-2.841	-17.445	-6.965	-20.516	-15.980	-22.478	-23.255	-22.566
react	1042	-7.830	-6.533	-22.295	-25.591	-8.537	-13.994	-39.889	-5.175	-10.194	-2.515	-64.896	-7.907	-14.917	-28.169	-9.840	0.693	-14.271	-1.711	-15.782	-12.415	-17.193	-17.971	-17.433
react	1043	-11.360	-10.812	-30.878	-38.010	-12.544	-22.442	-47.489	-8.702	-14.561	-6.727	-105.381	-14.697	-23.341	-40.393	-17.991	-12.097	-22.654	-18.714	-28.146	-20.355	-29.345	-30.122	-30.597
react	1044	-11.951	-11.110	-31.311	-38.649	-12.834	-23.397	-48.689	-9.294	-15.678	-7.324	-111.313	-15.510	-24.537	-42.189	-19.179	-14.493	-23.988	-21.707	-29.931	-21.596	-31.184	-31.961	-32.721
react	1045	-11.949	-11.107	-31.304	-38.785	-12.831	-24.240	-48.689	-9.293	-15.405	-7.321	-111.275	-15.412	-24.529	-42.181	-19.172	-14.485	-23.976	-21.696	-29.920	-21.730	-31.314	-32.091	-32.716
react	1046	-10.025	-9.133	-27.041	-33.099	-10.731	-19.262	-45.089	-7.373	-12.864	-5.223	-89.544	-11.929	-20.334	-36.186	-14.851	-6.694	-19.343	-11.806	-23.501	-17.649	-25.136	-25.913	-26.163

state	soln	si_PbF2	si_Pbmetal	si_PbO:0.3H2O	si_Periclase	si_Phosgenite	si_Plattnerite	si_Portlandite	si_Pyrochroite	si_Pyrolusite	si_Retgersite	si_Rhodochrosite	si_Siderite	si_Smithsonite	si_Spinel	si_Tenorite	si_Thenardite	si_Thermonatrite	si_V(OH)3	si_V2O5	si_V3O5	si_V4O7	si_V6O13	si_VCl2
i_soln	101	-13.909	-20.869	-13.203	-16.906	-17.273	-33.423	-17.786	-12.949	-22.735	-7.460	-8.859	-9.258	-8.675	-19.390	-7.296	-8.664	-19.344	-11.215	-18.286	-21.596	-28.066	-30.877	-45.652
i_soln	102	-15.760	-20.155	-10.488	-15.628	-13.564	-28.709	-17.065	-12.293	-20.079	-10.590	-7.930	-5.244	-6.655	-9.087	-4.839	-12.922	-19.445	-11.214	-14.284	-20.594	-26.063	-22.873	-48.643
i_soln	103	-15.657	-20.640	-11.374	-16.031	-15.542	-29.994	-17.470	-12.997	-21.183	-9.865	-8.924	-6.742	-7.847	-11.294	-5.539	-11.456	-19.399	-11.214	-15.084	-20.793	-26.462	-24.472	-48.361
i_soln	104	-15.249	-20.653	-10.987	-15.640	-14.526	-29.207	-17.079	-12.607	-20.393	-9.790	-8.244	-6.131	-7.158	-10.160	-5.153	-10.839	-18.175	-11.214	-14.284	-20.594	-26.063	-22.873	-48.608
react	1001	-16.598	-20.166	-11.500	-16.638	-14.184	-30.720	-18.075	-13.304	-22.090	-10.383	-8.744	-6.140	-7.276	-12.278	-6.152	-12.459	-20.003	-11.214	-16.284	-21.093	-27.063	-26.872	-46.937
react	1002	-16.257	-20.166	-11.300	-16.436	-14.302	-30.320	-17.874	-13.403	-21.989	-10.097	-9.022	-6.362	-7.324	-11.815	-5.948	-11.821	-19.628	-11.214	-15.884	-20.993	-26.862	-26.072	-47.377
react	1003	-15.901	-20.622	-11.356	-16.021	-15.138	-29.976	-17.458	-11.756	-19.942	-10.558	-7.382	-5.973	-7.085	-11.001	-4.487	-12.894	-19.831	-11.214	-15.084	-20.793	-26.462	-24.472	-48.294
react	1004	-16.215	-20.627	-11.161	-15.824	-14.820	-29.581	-17.262	-11.560	-19.546	-10.582	-7.191	-5.712	-6.993	-9.895	-5.033	-12.915	-19.637	-11.214	-14.684	-20.693	-26.263	-23.672	-48.461
react	1005	-16.320	-20.166	-11.500	-16.637	-14.407	-30.720	-18.075	-13.127	-21.913	-10.254	-8.744	-6.013	-7.459	-12.556	-6.150	-12.331	-20.179	-11.214	-16.284	-21.093	-27.063	-26.872	-46.985
react	1006	-15.737	-20.032	-11.766	-17.030	-14.497	-31.386	-18.468	-13.520	-22.706	-10.300	-8.956	-6.495	-7.797	-14.592	-6.541	-12.186	-20.202	-11.214	-17.084	-21.294	-27.463	-28.473	-46.521
react	1007	-12.786	-22.483	-5.017	-7.835	-12.788	-15.437	-8.429	-3.767	-3.753	-10.768	-1.129	-5.921	-2.088	-5.487	0.416	-12.873	-13.371	-20.367	-16.990	-44.152	-54.874	-46.590	-70.138
react	1008	-12.461	-22.508	-5.042	-7.839	-12.790	-15.462	-8.325	-3.698	-3.684	-10.614	-1.008	-5.797	-2.152	-5.615	0.397	-13.058	-13.672	-20.370	-16.996	-44.162	-54.887	-46.609	-70.146
react	1009	-11.656	-22.121	-5.255	-8.510	-12.989	-16.275	-8.450	-5.484	-6.070	-9.247	-2.642	-5.995	-2.324	-6.452	0.269	-11.434	-13.793	-19.294	-16.045	-41.234	-51.184	-42.554	-68.696
react	1010	-11.795	-21.454	-5.988	-9.311	-11.700	-18.408	-9.867	-6.584	-8.570	-9.172	-3.080	-3.998	-2.795	-4.856	0.158	-11.425	-14.533	-16.872	-13.999	-34.666	-42.892	-33.617	-63.480
react	1011	-11.049	-20.996	-6.930	-9.920	-12.142	-20.750	-11.954	-7.723	-11.109	-8.500	-3.972	-3.120	-3.557	-3.656	-1.107	-10.266	-14.745	-14.670	-12.396	-28.760	-35.485	-26.006	-59.382
react	1012	-14.254	-21.247	-13.981	-16.521	-16.555	-34.602	-17.145	-13.454	-23.640	-7.177	-9.363	-10.087	-9.099	-20.584	-7.740	-9.214	-20.880	-11.217	-19.090	-21.802	-28.474	-32.490	-43.180
react	1013	-11.176	-21.557	-6.691	-8.935	-9.891	-19.711	-9.559	-7.890	-10.476	-8.084	-3.760	-4.121	-2.130	-6.856	-0.915	-9.650	-13.683	-16.035	-13.525	-32.454	-40.143	-30.994	-59.752
react	1014	-11.078	-20.175	-6.509	-11.616	-11.150	-20.729	-13.053	-7.736	-11.522	-10.208	-3.958	-2.418	-3.188	-3.671	-1.015	-12.845	-16.023	-14.030	-11.917	-27.042	-33.328	-23.770	-58.420
react	1015	-11.177	-21.941	-6.075	-9.475	-11.348	-18.095	-9.468	-6.447	-8.033	-9.930	-2.543	-3.914	-1.725	-4.494	-0.479	-12.496	-14.076	-17.527	-14.510	-36.432	-45.114	-35.950	-64.210
react	1016	-12.214	-20.342	-8.475	-13.416	-12.314	-24.495	-14.854	-9.683	-15.269	-10.334	-5.269	-3.226	-4.587	-5.020	-2.947	-12.670	-17.189	-11.570	-10.596	-20.561	-25.286	-16.208	-52.926
react	1017	-15.827	-20.325	-11.259	-16.224	-14.701	-30.079	-17.661	-12.889	-21.275	-10.399	-8.511	-6.013	-7.192	-11.581	-5.732	-12.733	-20.028	-11.214	-15.484	-20.893	-26.662	-25.272	-47.955
react	1018	-15.665	-20.154	-11.087	-16.227	-14.012	-29.908	-17.665	-13.193	-21.579	-10.407	-8.639	-5.808	-6.959	-11.581	-5.737	-12.295	-19.410	-11.214	-15.484	-20.893	-26.662	-25.272	-47.785
react	1019	-14.998	-20.621	-12.455	-17.119	-16.618	-32.175	-18.557	-13.006	-22.292	-10.109	-8.919	-7.965	-8.784	-16.345	-6.626	-12.269	-20.864	-11.214	-17.284	-21.344	-27.563	-28.873	-46.739
react	1020	-15.706	-20.617	-10.951	-15.617	-14.834	-29.171	-17.054	-12.582	-20.368	-10.843	-8.219	-5.885	-6.924	-9.587	-5.124	-13.533	-19.792	-11.214	-14.284	-20.594	-26.063	-22.873	-48.989
react	1021	-14.923	-20.614	-10.748	-15.413	-14.753	-28.768	-16.851	-12.379	-19.965	-10.818	-8.023	-5.436	-7.098	-9.604	-4.920	-13.509	-19.598	-11.214	-13.885	-20.494	-25.864	-22.074	-49.407
react	1022	-14.304	-20.616	-10.150	-14.813	-14.207	-27.570	-16.250	-11.176	-18.162	-10.809	-6.855	-4.897	-6.225	-7.903	-4.322	-13.501	-19.032	-11.218	-12.692	-20.206	-25.279	-19.697	-50.327
react	1023	-15.889	-20.155	-11.089	-16.229	-14.148	-29.909	-17.666	-13.195	-21.581	-10.423	-8.817	-6.057	-7.233	-11.358	-5.438	-12.310	-19.587	-11.214	-15.484	-20.893	-26.662	-25.272	-47.741
react	1024	-15.308	-20.628	-12.161	-16.824	-16.131	-31.582	-18.262	-13.313	-22.299	-9.941	-9.228	-7.774	-8.679	-14.833	-6.333	-11.839	-20.185	-11.214	-16.684	-21.193	-27.263	-27.672	-46.987
react	1025	-15.220	-20.662	-12.195	-16.847	-15.504	-31.616	-18.286	-13.815	-22.801	-9.656	-9.731	-7.875	-8.343	-15.026	-6.371	-10.526	-19.182	-11.214	-16.684	-21.193	-27.263	-27.672	-46.291
react	1026	-11.772	-20.691	-12.625	-16.966	-15.698	-32.445	-18.706	-13.759	-23.145	-9.201	-9.671	-8.799	-8.043	-22.910	-6.799	-9.877	-19.228	-11.214	-17.485	-21.394	-27.664	-29.274	-45.429
react	1027	-14.564	-20.617	-11.951	-16.616	-16.102	-31.171	-18.053	-13.581	-22.367	-9.912	-9.197	-7.114	-8.190	-14.809	-6.120	-12.551	-20.418	-11.214	-16.284	-21.093	-27.063	-26.872	-47.778
react	1028	-14.269	-20.664	-12.998	-17.172	-16.599	-33.218	-19.088	-13.838	-23.624	-8.588	-9.749	-9.178	-8.647	-18.816	-7.164	-10.713	-20.388	-11.215	-18.285	-21.595	-28.065	-30.875	-45.387
react	1029	-13.226	-20.648	-12.782	-17.137	-16.576	-32.802	-18.877	-13.803	-23.389	-8.899	-9.714	-8.966	-8.619	-19.541	-6.949	-11.049	-20.394	-11.214	-17.885	-21.494	-27.864	-30.074	-45.894
react	1030	-14.748	-20.151	-9.884	-15.022	-12.968	-27.504	-16.460	-11.386	-18.572	-10.541	-6.875	-4.514	-5.863	-7.718	-4.534	-12.875	-18.695	-11.216	-13.088	-20.299	-25.471	-20.484	-49.705
react	1031	-16.205	-20.042	-10.776	-16.038	-13.339	-29.396	-17.475	-12.403	-20.589	-10.352	-7.853	-5.374	-6.627	-10.148	-5.552	-12.428	-19.413	-11.214	-15.084	-20.793	-26.462	-24.472	-47.831
react	1032	-13.435	-19.940	-9.074	-14.427	-11.927	-26.094	-15.865	-11.394	-17.980	-10.237	-6.934	-3.753	-5.331	-6.570	-3.944	-12.124	-17.705	-11.231	-11.918	-20.044	-24.931	-18.174	-50.549
react	1033	-16.128	-20.329	-10.863	-15.827	-14.078	-29.283	-17.265	-12.493	-20.479	-10.904	-8.124	-5.495	-7.066	-9.691	-5.038	-13.236	-19.639	-11.214	-14.684	-20.693	-26.263	-23.672	-48.315
react	1034	-15.726	-20.155	-10.289	-15.428	-13.142	-28.309	-16.866	-12.094	-19.680	-10.892	-7.562	-4.714	-6.509	-8.325	-4.640	-13.575	-19.429	-11.214	-13.885	-20.494	-25.864	-22.074	-48.889
react	1035	-16.544	-20.336	-11.670	-16.634	-14.809	-30.890	-18.071	-13.600	-22.386	-10.476	-9.217	-6.059	-7.760	-12.492	-5.844	-12.804	-20.427	-11.214	-16.284	-21.093	-27.063	-26.872	-47.046
react	1036	-16.517	-19.810	-10.744	-16.248	-12.942	-29.564	-17.685	-12.915	-21.301	-10.740	-8.537	-5.618	-6.865	-10.432	-5.292	-12.812	-19.791	-11.214	-15.484	-20.893	-26.662	-25.272	-47.225
react	1037	-16.322	-20.162	-11.096	-16.234	-13.944	-29.916	-17.672	-13.202	-21.588	-10.647	-8.824	-5.964	-7.064	-10.944	-5.749	-12.531	-19.590	-11.214	-15.484	-20.893	-26.662	-25.272	-47.524
react	1038	-11.317	-19.736	-7.469	-13.039	-9.932	-23.089	-14.000	-8.394	-13.580	-9.310	-3.790	-2.023	-3.446	-3.219	-1.897	-11.985	-16.007	-11.703	-10.062	-20.759	-25.418	-15.405	-53.079
react	1039	-13.715	-19.608	-8.542	-14.261	-9.963	-25.362	-15.222	-9.800	-16.186	-9.038	-5.146	-2.905	-4.409	-4.543	-2.848	-11.511	-16.816	-10.947	-10.950	-19.093	-23.595	-15.671	-49.660
react	1040	-14.764	-19.771	-9.905	-15.455	-11.908	-27.925	-16.894	-12.123	-19.709	-9.733	-7.466	-4.543	-5.881	-8.379	-4.374	-10.773	-17.689	-11.214	-13.885	-20.494	-25.864	-22.074	-48.547
react	1041	-13.211	-20.330	-9.064	-14.018	-12.414	-25.684	-15.456	-9.428	-15.614	-10.518	-4.897	-3.448	-5.144	-5.744	-3.538	-13.155	-17.673	-11.278	-11.213	-19.986	-24.720	-16.858	-51.375
react	1042	-11.199	-20.211	-7.345	-12.415	-11.356	-22.365	-13.853	-7.934	-12.520	-10.334	-3.828	-2.368	-4.030	-4.201	-1.704	-13.148	-16.497	-12.831	-11.118	-23.843	-29.330	-19.773	-55.683
react	1043	-14.689	-20.623	-11.557	-16.219	-16.240	-30.377	-17.657	-12.582	-20.968	-9.917	-8.204	-6.511	-7.808	-13.078	-5.721	-12.604	-20.376	-11.214	-15.484	-20.893	-26.662	-25.272	-48.898
react	1044	-12.028	-20.621	-12.154	-16.817	-16.664	-31.575	-18.256	-12.937	-21.923	-9.662	-8.552	-8.046	-8.189	-19.799	-6.319	-12.299	-20.616	-11.214	-16.684	-21.193	-27.263	-27.673	-47.834
react	1045	-11.895	-20.617	-12.151	-16.815	-16.474	-31.571	-18.253	-13.780	-22.766	-9.805	-9.394	-8.044	-8.169	-20.240	-6.318	-12.443	-20.615	-11.214	-16.684	-21.193	-27.263	-27.673	-47.653
react	1046	-14.517	-20.319	-10.053	-15.016	-13.579	-27.673	-16.454	-10.602	-17.788	-10.043	-6.090	-4.755	-6.186	-8.133	-4.525	-13.210	-19.044	-11.216	-13.088	-20.299	-25.471	-20.484	-49.980

state	soln	si_VCl3	si_VF4	si_Vmetal	si_VO	si_VO(OH)2	si_VO2Cl	si_VOCl	si_VOCl2	si_VOSO4	si_Witherite	si_Zincite	si_Zincosite	si_Zn(BO2)2	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zn2(OH)2SO4	si_Zn2(OH)3Cl	si_Zn3(AsO4)2:2.5H2O	si_Zn3O(SO4)2	si_Zn4(OH)6SO4
i_soln	101	-49.486	-58.302	-72.249	-26.580	-6.271	-20.141	-22.253	-28.834	-16.049	-10.290	-8.324	-12.240	-14.550	-9.190	-9.464	-8.744	-8.524	-8.724	-12.800	-16.648	-25.608	-32.524	-27.681
i_soln	102	-52.475	-66.433	-75.248	-27.579	-5.270	-19.136	-23.249	-29.825	-18.932	-8.320	-6.578	-14.377	-12.513	-7.444	-7.718	-6.998	-6.778	-6.978	-13.191	-14.152	-21.101	-35.051	-24.578
i_soln	103	-52.351	-64.656	-74.648	-27.379	-5.470	-19.495	-23.207	-29.943	-18.002	-9.214	-7.480	-14.149	-13.708	-8.346	-8.620	-7.900	-7.680	-7.880	-13.866	-15.915	-23.410	-35.499	-27.058
i_soln	104	-52.421	-64.413	-75.248	-27.579	-5.270	-19.119	-23.231	-29.790	-18.119	-8.567	-7.081	-14.067	-13.095	-7.947	-8.221	-7.501	-7.281	-7.481	-13.385	-15.141	-22.615	-34.936	-25.779
react	1001	-50.665	-66.586	-73.748	-27.079	-5.770	-19.533	-22.645	-29.119	-18.214	-9.042	-7.395	-13.976	-13.259	-8.261	-8.535	-7.815	-7.595	-7.795	-13.608	-15.184	-22.632	-35.068	-26.631
react	1002	-51.175	-66.202	-74.048	-27.179	-5.670	-19.503	-22.815	-29.359	-18.029	-9.000	-7.265	-13.761	-13.022	-8.131	-8.405	-7.685	-7.465	-7.665	-13.263	-15.093	-22.398	-34.508	-26.025
react	1003	-52.250	-65.179	-74.648	-27.379	-5.470	-19.461	-23.174	-29.876	-18.707	-8.808	-7.019	-14.393	-13.319	-7.885	-8.159	-7.439	-7.219	-7.419	-13.649	-14.959	-22.023	-35.525	-25.919
react	1004	-52.350	-66.098	-74.948	-27.479	-5.370	-19.295	-23.207	-29.843	-18.827	-8.619	-6.922	-14.516	-13.185	-7.788	-8.062	-7.342	-7.122	-7.322	-13.674	-14.799	-21.931	-35.674	-25.750
react	1005	-50.737	-66.029	-73.748	-27.079	-5.770	-19.557	-22.669	-29.167	-18.086	-9.258	-7.403	-13.856	-13.101	-8.269	-8.543	-7.823	-7.603	-7.803	-13.495	-15.223	-22.654	-34.835	-26.533
react	1006	-50.342	-64.530	-73.148	-26.879	-5.970	-19.825	-22.538	-29.103	-17.939	-9.484	-7.921	-14.027	-13.907	-8.787	-9.061	-8.341	-8.121	-8.321	-14.184	-16.127	-24.020	-35.695	-28.258
react	1007	-74.290	-76.679	-96.101	-40.632	-10.523	-24.710	-36.622	-43.520	-31.935	-2.222	-0.286	-15.835	-7.393	-1.152	-1.426	-0.706	-0.486	-0.686	-8.357	-5.788	-14.381	-31.675	-7.160
react	1008	-74.300	-75.982	-96.104	-40.635	-10.526	-24.716	-36.628	-43.528	-31.769	-2.171	-0.402	-15.782	-7.568	-1.268	-1.542	-0.822	-0.602	-0.802	-8.421	-6.023	-14.738	-31.686	-7.457
react	1009	-73.113	-73.171	-94.129	-39.260	-9.750	-24.203	-35.515	-42.678	-29.097	-2.612	-0.727	-14.210	-7.442	-1.593	-1.867	-1.147	-0.927	-1.127	-7.173	-6.635	-14.617	-28.866	-6.858
react	1010	-67.550	-70.261	-89.606	-36.137	-8.027	-22.133	-32.045	-38.862	-25.963	-3.305	-1.859	-13.932	-8.722	-2.725	-2.999	-2.279	-2.059	-2.259	-8.027	-7.854	-15.263	-29.443	-9.977
react	1011	-63.555	-65.384	-85.304	-33.235	-6.525	-20.734	-29.246	-36.164	-22.844	-4.306	-2.868	-13.324	-9.302	-3.734	-4.008	-3.288	-3.068	-3.268	-8.428	-9.274	-15.707	-29.235	-12.396
react	1012	-46.078	-57.637	-71.651	-26.382	-6.473	-19.406	-21.118	-26.762	-15.265	-10.818	-8.751	-11.679	-14.330	-9.617	-9.891	-9.171	-8.951	-9.151	-12.666	-16.365	-27.523	-31.829	-28.400
react	1013	-62.828	-67.079	-87.868	-34.999	-7.490	-20.601	-29.913	-35.734	-23.877	-3.492	-1.819	-12.343	-8.324	-2.685	-2.959	-2.239	-2.019	-2.219	-6.398	-6.479	-14.589	-26.224	-8.269
react	1014	-62.732	-65.842	-84.065	-32.396	-6.086	-20.433	-28.545	-35.602	-23.677	-4.853	-2.527	-14.254	-8.446	-3.393	-3.667	-2.947	-2.727	-2.927	-9.017	-8.530	-13.237	-30.755	-12.302
react	1015	-68.017	-69.307	-90.861	-36.992	-8.483	-22.326	-32.638	-39.191	-27.548	-2.649	-1.189	-14.391	-8.023	-2.055	-2.329	-1.609	-1.389	-1.589	-7.816	-6.450	-13.997	-29.690	-8.426
react	1016	-57.071	-62.622	-78.904	-29.035	-4.526	-18.706	-25.018	-31.908	-20.142	-6.101	-4.560	-14.313	-10.722	-5.426	-5.700	-4.980	-4.760	-4.960	-11.110	-11.530	-17.405	-32.906	-18.462
react	1017	-51.892	-65.324	-74.348	-27.279	-5.570	-19.542	-23.054	-29.737	-18.445	-8.854	-7.130	-14.142	-13.065	-7.996	-8.270	-7.550	-7.330	-7.530	-13.508	-15.062	-22.167	-35.134	-26.000
react	1018	-51.637	-65.344	-74.348	-27.279	-5.570	-19.457	-22.969	-29.567	-18.449	-8.599	-7.073	-14.089	-12.984	-7.939	-8.213	-7.493	-7.273	-7.473	-13.398	-14.863	-21.998	-34.971	-25.777
react	1019	-50.743	-61.726	-72.999	-26.830	-6.020	-20.059	-22.671	-29.421	-17.886	-9.881	-8.431	-14.433	-14.874	-9.297	-9.571	-8.851	-8.631	-8.831	-15.100	-17.280	-25.545	-37.017	-30.193
react	1020	-52.993	-65.399	-75.248	-27.579	-5.270	-19.309	-23.421	-30.171	-19.196	-8.675	-6.847	-14.911	-13.227	-7.713	-7.987	-7.267	-7.047	-7.247	-13.994	-14.863	-21.903	-36.389	-25.921
react	1021	-53.469	-64.140	-75.549	-27.680	-5.170	-19.268	-23.580	-30.389	-19.274	-8.673	-7.014	-15.255	-13.435	-7.880	-8.154	-7.434	-7.214	-7.414	-14.505	-15.355	-22.603	-37.243	-26.764
react	1022	-54.397	-63.801	-76.453	-27.984	-4.874	-18.980	-23.892	-30.709	-19.570	-7.833	-6.107	-14.939	-12.445	-6.973	-7.247	-6.527	-6.307	-6.507	-13.282	-13.849	-20.499	-35.705	-23.727
react	1023	-51.571	-65.789	-74.348	-27.279	-5.570	-19.435	-22.947	-29.523	-18.464	-8.818	-7.171	-14.202	-12.928	-8.037	-8.311	-7.591	-7.371	-7.571	-13.609	-15.037	-22.293	-35.295	-26.183
react	1024	-50.889	-62.782	-73.448	-26.979	-5.870	-19.808	-22.720	-29.369	-17.988	-9.768	-8.323	-14.578	-14.517	-9.190	-9.464	-8.744	-8.524	-8.724	-15.138	-17.115	-25.287	-37.199	-30.017
react	1025	-49.847	-62.539	-73.448	-26.979	-5.870	-19.460	-22.372	-28.673	-17.678	-9.667	-7.988	-13.933	-14.346	-8.854	-9.128	-8.408	-8.188	-8.388	-14.156	-16.095	-24.289	-35.573	-28.364
react	1026	-48.854	-54.983	-72.849	-26.780	-6.070	-19.530	-22.042	-28.211	-17.179	-9.839	-7.690	-12.936	-13.819	-8.556	-8.830	-8.110	-7.890	-8.090	-12.863	-15.170	-23.360	-33.283	-26.476
react	1027	-51.927	-61.615	-73.748	-27.079	-5.770	-19.954	-23.066	-29.960	-18.067	-9.809	-8.133	-14.567	-14.396	-8.999	-9.273	-8.553	-8.333	-8.533	-14.937	-17.080	-24.834	-36.988	-29.435
react	1028	-49.090	-59.431	-72.249	-26.580	-6.270	-20.008	-22.120	-28.569	-17.054	-10.382	-8.297	-13.217	-14.810	-9.163	-9.437	-8.717	-8.497	-8.697	-13.750	-16.461	-25.516	-34.451	-28.576
react	1029	-49.700	-57.676	-72.549	-26.680	-6.170	-20.012	-22.324	-28.875	-17.285	-10.203	-8.267	-13.519	-15.208	-9.133	-9.407	-8.687	-8.467	-8.667	-14.022	-16.605	-25.207	-35.024	-28.789
react	1030	-53.616	-65.319	-76.150	-27.881	-4.972	-18.918	-23.630	-30.287	-19.190	-7.675	-5.933	-14.288	-11.845	-6.800	-7.074	-6.354	-6.134	-6.334	-12.458	-13.243	-19.777	-34.230	-22.557
react	1031	-51.555	-66.948	-74.648	-27.379	-5.470	-19.230	-22.942	-29.413	-18.483	-8.443	-6.737	-13.887	-12.454	-7.603	-7.877	-7.157	-6.937	-7.137	-12.860	-14.163	-21.186	-34.231	-24.566
react	1032	-54.424	-64.029	-77.065	-28.196	-4.687	-18.598	-23.910	-30.531	-19.196	-6.976	-5.351	-13.996	-11.238	-6.217	-6.491	-5.771	-5.551	-5.751	-11.583	-12.341	-18.060	-33.063	-20.516
react	1033	-52.132	-66.518	-74.948	-27.479	-5.370	-19.222	-23.134	-29.697	-19.146	-8.733	-6.995	-14.908	-13.223	-7.861	-8.135	-7.415	-7.195	-7.395	-14.139	-14.872	-22.152	-36.530	-26.361
react	1034	-52.693	-66.664	-75.549	-27.680	-5.170	-19.009	-23.322	-29.871	-19.333	-8.196	-6.600	-14.900	-12.939	-7.466	-7.740	-7.020	-6.800	-7.000	-13.736	-14.269	-21.371	-36.119	-25.168
react	1035	-50.828	-66.138	-73.748	-27.079	-5.770	-19.588	-22.700	-29.228	-18.311	-9.471	-7.704	-14.382	-13.690	-8.570	-8.844	-8.124	-7.904	-8.104	-14.322	-15.854	-23.554	-36.187	-27.961
react	1036	-50.798	-67.735	-74.348	-27.279	-5.570	-19.177	-22.689	-29.007	-18.761	-8.716	-6.803	-14.132	-12.378	-7.669	-7.943	-7.223	-7.003	-7.203	-13.171	-14.043	-20.597	-34.786	-25.009
react	1037	-51.245	-66.642	-74.348	-27.279	-5.570	-19.327	-22.839	-29.306	-18.681	-8.799	-7.002	-14.250	-12.758	-7.868	-8.142	-7.422	-7.202	-7.402	-13.488	-14.590	-21.788	-35.222	-25.724
react	1038	-56.934	-62.774	-79.637	-29.368	-4.458	-18.349	-25.061	-31.661	-20.381	-4.857	-3.610	-13.669	-9.123	-4.476	-4.750	-4.030	-3.810	-4.010	-9.515	-9.539	-15.067	-30.667	-14.966
react	1039	-53.084	-65.269	-77.081	-28.012	-4.303	-17.761	-23.274	-29.442	-18.892	-5.865	-4.623	-13.349	-9.809	-5.489	-5.763	-5.043	-4.823	-5.023	-10.209	-10.535	-16.719	-31.042	-17.688
react	1040	-52.180	-65.507	-75.549	-27.680	-5.170	-18.838	-23.150	-29.529	-18.146	-7.465	-6.097	-13.210	-11.579	-6.963	-7.237	-6.517	-6.297	-6.497	-11.543	-13.092	-19.271	-32.236	-21.969
react	1041	-55.339	-63.447	-77.713	-28.444	-4.534	-18.534	-24.246	-30.957	-20.034	-6.620	-5.235	-14.871	-11.396	-6.101	-6.375	-5.655	-5.435	-5.635	-12.343	-12.400	-18.745	-34.698	-21.045
react	1042	-59.826	-63.616	-81.665	-30.796	-5.286	-19.465	-26.777	-33.665	-22.381	-5.363	-3.695	-14.926	-9.962	-4.561	-4.835	-4.115	-3.895	-4.095	-10.858	-10.298	-16.112	-33.267	-16.480
react	1043	-53.307	-62.454	-74.348	-27.279	-5.570	-20.014	-23.526	-30.680	-17.967	-9.003	-7.746	-14.281	-14.168	-8.612	-8.886	-8.166	-7.946	-8.146	-14.263	-16.766	-24.011	-36.028	-27.988
react	1044	-52.161	-56.237	-73.448	-26.979	-5.870	-20.232	-23.144	-30.216	-17.715	-9.563	-8.135	-14.117	-15.075	-9.001	-9.275	-8.555	-8.335	-8.535	-14.488	-17.161	-24.717	-36.088	-28.989
react	1045	-51.888	-55.978	-73.448	-26.979	-5.870	-20.141	-23.053	-30.034	-17.860	-9.526	-8.115	-14.242	-14.786	-8.981	-9.255	-8.535	-8.315	-8.515	-14.593	-17.030	-24.657	-36.319	-29.055
react	1046	-54.028	-64.519	-76.150	-27.881	-4.972	-19.056	-23.768	-30.562	-19.176	-7.772	-6.257	-14.598	-12.485	-7.123	-7.397	-6.677	-6.457	-6.657	-13.091	-14.027	-20.745	-35.173	-23.837

state	soln	si_Zn5(OH)8Cl2	si_ZnCl2	si_ZnCO3:1H2O	si_ZnF2	si_Znmetal	si_ZnO(active)	si_ZnSO4:1H2O
i_soln	101	-38.404	-18.994	-8.415	-17.582	-39.179	-8.179	-7.672
i_soln	102	-31.665	-19.240	-6.395	-20.402	-39.432	-6.432	-9.809
i_soln	103	-36.095	-20.060	-7.587	-20.316	-39.935	-7.335	-9.582
i_soln	104	-34.147	-19.708	-6.898	-19.895	-39.936	-6.936	-9.499
react	1001	-34.546	-18.851	-7.016	-21.045	-39.250	-7.250	-9.409
react	1002	-34.234	-19.060	-7.064	-20.773	-39.320	-7.119	-9.194
react	1003	-33.722	-19.531	-6.825	-20.116	-39.474	-6.874	-9.825
react	1004	-33.304	-19.501	-6.733	-20.528	-39.577	-6.777	-9.948
react	1005	-34.633	-18.906	-7.199	-20.775	-39.258	-7.257	-9.288
react	1006	-36.958	-19.161	-7.537	-20.443	-39.376	-7.775	-9.459
react	1007	-8.645	-21.389	-1.828	-16.606	-40.940	-0.140	-11.267
react	1008	-9.232	-21.510	-1.892	-16.372	-41.057	-0.257	-11.214
react	1009	-10.781	-21.761	-2.064	-15.679	-40.781	-0.581	-9.642
react	1010	-14.350	-20.800	-2.535	-16.218	-40.514	-1.714	-9.364
react	1011	-18.199	-20.613	-3.297	-15.539	-40.123	-2.722	-8.756
react	1012	-38.264	-17.146	-8.840	-17.575	-39.205	-8.605	-7.112
react	1013	-11.561	-18.170	-1.870	-14.856	-39.874	-1.674	-7.775
react	1014	-16.370	-20.149	-2.928	-15.647	-39.381	-2.381	-9.687
react	1015	-10.874	-20.004	-1.465	-14.843	-40.243	-1.043	-9.823
react	1016	-24.404	-20.049	-4.327	-16.851	-39.615	-4.415	-9.745
react	1017	-34.038	-19.404	-6.932	-20.249	-39.385	-6.984	-9.574
react	1018	-33.584	-19.177	-6.699	-20.202	-39.328	-6.928	-9.521
react	1019	-39.774	-19.938	-8.524	-19.526	-39.785	-8.285	-9.865
react	1020	-33.358	-19.855	-6.664	-20.154	-39.702	-6.702	-10.343
react	1021	-34.508	-20.339	-6.838	-19.741	-40.068	-6.868	-10.687
react	1022	-30.588	-20.048	-5.965	-18.812	-39.761	-5.961	-10.372
react	1023	-34.029	-19.231	-6.973	-20.523	-39.426	-7.026	-9.634
react	1024	-39.336	-19.929	-8.419	-20.022	-39.978	-8.178	-10.010
react	1025	-36.962	-18.898	-8.083	-19.564	-39.642	-7.842	-9.365
react	1026	-34.813	-17.938	-7.783	-15.389	-38.945	-7.545	-8.369
react	1027	-39.077	-20.430	-7.930	-19.298	-39.988	-7.988	-10.000
react	1028	-38.003	-18.702	-8.387	-18.119	-39.151	-8.151	-8.650
react	1029	-38.262	-19.079	-8.359	-17.262	-39.322	-8.122	-8.951
react	1030	-29.203	-19.355	-5.603	-19.349	-39.388	-5.788	-9.721
react	1031	-31.848	-18.786	-6.367	-20.718	-39.191	-6.591	-9.319
react	1032	-26.817	-19.301	-5.071	-18.264	-39.405	-5.205	-9.428
react	1033	-33.522	-19.428	-6.806	-20.811	-39.650	-6.849	-10.340
react	1034	-31.922	-19.408	-6.249	-20.589	-39.655	-6.455	-10.332
react	1035	-36.196	-19.268	-7.500	-21.129	-39.558	-7.558	-9.814
react	1036	-31.673	-18.347	-6.605	-21.128	-39.058	-6.657	-9.564
react	1037	-32.965	-18.844	-6.804	-20.780	-39.256	-6.856	-9.682
react	1038	-19.471	-18.919	-3.186	-16.009	-39.064	-3.464	-9.101
react	1039	-22.477	-17.869	-4.149	-18.348	-38.878	-4.478	-8.782
react	1040	-29.064	-18.562	-5.621	-19.508	-39.152	-5.951	-8.642
react	1041	-26.819	-19.764	-4.884	-17.934	-39.690	-5.090	-10.304
react	1042	-21.075	-20.180	-3.770	-16.102	-39.750	-3.550	-10.358
react	1043	-38.062	-20.963	-7.548	-19.430	-40.001	-7.601	-9.713
react	1044	-39.240	-20.588	-7.929	-16.560	-39.789	-7.989	-9.549
react	1045	-38.959	-20.386	-7.909	-16.411	-39.769	-7.969	-9.674
react	1046	-31.096	-19.954	-5.926	-19.273	-39.712	-6.112	-10.030

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Al(OH)3(am)	si_Al2O3	si_Al4(OH)10SO4	si_AlAsO4:2H2O	si_AlOHSO4	si_Alunite	si_Anglesite
react	1047	6.8	4	4.7E-04	6.4E-04	1	3.67E-14	3.85E-09	2.61E-04	2.56E-05	2.50E-05	4.11E-05	1.68E-04	8.33E-05	5.99E-05	1.58E-05	2.63E-05	1.57E-08	0.00E+00	0.00E+00	1.09E-07	1.013	3.974	6.817	-5.679	-2.693	3.563	-4.110
react	1048	7.7	4	2.6E-04	6.7E-04	1	3.93E-15	3.75E-10	3.04E-04	2.56E-05	4.99E-05	4.11E-05	2.57E-04	5.20E-05	1.20E-04	2.11E-05	1.29E-05	1.57E-08	0.00E+00	0.00E+00	5.46E-08	-0.394	1.160	-0.817	-8.588	-6.106	-3.770	-5.093
react	1049	5.5	4	2.2E-04	8.9E-04	1	2.54E-20	1.95E-15	1.31E-04	2.56E-05	2.50E-05	4.11E-05	6.28E-04	1.04E-05	2.00E-05	5.26E-06	7.34E-05	6.29E-08	0.00E+00	0.00E+00	1.18E-06	0.695	3.337	7.199	-4.472	-1.355	4.617	-5.077
react	1050	6.4	4	1.3E-03	1.7E-03	1	4.06E-19	1.61E-14	3.48E-04	7.67E-05	4.99E-05	4.11E-05	7.87E-04	1.35E-04	4.00E-05	1.05E-05	2.65E-04	1.57E-07	0.00E+00	0.00E+00	4.19E-07	1.763	5.473	10.778	-4.112	-0.980	7.807	-3.491
react	1051	6.2	4	7.1E-04	1.7E-03	1	1.56E-16	6.26E-12	4.79E-04	5.12E-05	4.99E-05	4.11E-05	7.54E-04	2.08E-04	3.00E-05	5.26E-06	1.92E-04	1.10E-07	0.00E+00	0.00E+00	2.55E-07	1.561	5.070	10.561	-4.073	-0.592	8.006	-3.445
react	1052	5.55	4	4.3E-04	1.8E-03	1	8.38E-14	3.21E-09	4.57E-04	5.12E-05	2.50E-05	4.11E-05	9.81E-04	1.77E-04	3.00E-05	5.26E-06	1.39E-04	7.08E-08	0.00E+00	0.00E+00	3.19E-07	1.019	3.985	9.586	-4.207	0.060	8.116	-3.757
react	1053	5.3	4	1.0E-04	1.2E-03	1	1.56E-13	9.16E-09	4.35E-04	2.56E-05	2.50E-05	4.11E-05	5.25E-04	1.77E-04	3.00E-05	5.26E-06	4.75E-05	4.72E-08	0.00E+00	0.00E+00	7.28E-08	0.130	2.208	6.561	-4.834	-0.299	5.962	-4.010
react	1054	8.4	4	3.6E-04	4.6E-03	1	1.44E-15	1.87E-11	2.74E-03	2.56E-05	3.49E-04	2.06E-04	3.12E-03	2.08E-04	2.90E-04	3.16E-05	2.51E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-1.419	-0.891	-5.817	-11.045	-8.029	-7.961	-5.632
react	1055	9.5	4	6.9E-04	2.4E-03	1	-1.56E-14	-3.84E-10	1.74E-03	2.56E-05	9.98E-05	4.11E-05	1.21E-03	1.56E-04	3.40E-04	3.16E-05	1.40E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-1.969	-1.991	-10.288	-13.750	-10.850	-13.045	-6.923
react	1056	10	4	1.0E-03	2.1E-03	1	-1.86E-18	-5.19E-14	1.65E-03	2.56E-05	2.50E-05	4.11E-05	7.19E-04	1.25E-04	4.60E-04	2.63E-05	1.68E-05	3.15E-08	0.00E+00	0.00E+00	1.09E-07	-2.448	-2.948	-13.290	-14.456	-12.416	-16.155	-7.462
react	1057	5.3	4	1.1E-04	7.5E-04	1	2.44E-20	2.29E-15	8.70E-05	2.56E-05	2.50E-05	4.11E-05	5.12E-04	1.04E-05	2.00E-05	5.26E-06	6.34E-05	4.72E-08	0.00E+00	0.00E+00	4.19E-07	0.174	2.296	5.515	-4.786	-1.477	3.654	-5.371
react	1058	4.8	4	4.9E-05	1.3E-03	1	1.96E-16	1.18E-11	1.31E-04	5.12E-05	2.50E-05	4.11E-05	7.65E-04	4.16E-05	2.00E-05	5.26E-06	9.53E-05	1.57E-08	0.00E+00	0.00E+00	2.00E-07	-0.742	0.464	3.356	-5.221	-0.889	3.711	-4.587
react	1059	4.6	4	2.3E-05	1.3E-03	1	7.01E-14	3.95E-09	1.74E-04	7.67E-05	2.50E-05	4.11E-05	8.29E-04	4.16E-05	2.00E-05	5.26E-06	4.33E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	-1.185	-0.423	1.940	-5.524	-0.974	3.073	-4.454
react	1060	7.2	4	3.8E-05	2.3E-03	1	8.63E-19	3.59E-14	1.74E-04	2.56E-05	3.24E-04	2.06E-04	6.42E-05	5.93E-04	2.00E-05	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	4.02E-06	-0.713	0.522	-0.099	-8.057	-4.430	-1.250	-4.160
react	1061	6.5	4	3.5E-05	1.1E-03	1	9.94E-14	8.18E-09	1.31E-04	2.56E-05	1.75E-04	4.11E-05	6.46E-05	2.71E-04	2.00E-05	5.26E-06	1.61E-06	1.57E-08	0.00E+00	0.00E+00	1.35E-05	-0.016	1.916	3.789	-6.310	-2.634	2.348	-4.311
react	1062	5.2	4	8.7E-07	1.4E-03	1	5.71E-13	3.52E-08	1.74E-04	2.56E-05	1.25E-04	1.65E-04	1.95E-04	3.23E-04	2.00E-05	5.26E-06	5.01E-06	1.57E-08	0.00E+00	0.00E+00	8.72E-06	-1.253	-0.559	1.502	-6.117	-1.209	2.658	-4.234
react	1063	4.5	4	-3.7E-05	6.1E-03	1	-9.04E-19	-1.41E-14	2.61E-04	2.56E-05	1.10E-03	5.35E-04	2.32E-04	1.73E-03	2.00E-05	5.26E-06	2.15E-06	1.57E-08	0.00E+00	0.00E+00	3.42E-05	-3.970	-5.992	-7.352	-8.292	-1.912	-2.185	-3.784
react	1064	6.7	4	5.1E-04	5.3E-04	1	1.48E-13	1.79E-08	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.68E-04	1.04E-05	4.00E-05	1.05E-05	6.36E-05	1.57E-08	0.00E+00	0.00E+00	5.28E-07	1.136	4.219	6.607	-5.414	-3.271	2.430	-5.375
react	1065	7.4	4	7.0E-04	4.5E-04	1	1.34E-16	1.89E-11	1.31E-04	2.56E-05	2.50E-05	4.11E-05	1.30E-04	2.08E-05	5.00E-05	1.05E-05	6.54E-05	3.15E-08	0.00E+00	0.00E+00	9.47E-07	0.576	3.100	3.275	-7.068	-4.923	-0.733	-5.072
react	1066	8.5	4	2.2E-03	1.3E-03	1	-1.68E-18	-8.34E-14	6.96E-04	7.67E-05	4.99E-05	4.11E-05	1.40E-04	1.46E-04	7.99E-05	5.79E-05	1.93E-04	7.87E-08	0.00E+00	0.00E+00	4.00E-07	-0.036	1.876	-0.557	-9.317	-6.919	-3.766	-4.624
react	1067	9.3	4	6.2E-04	1.1E-03	1	6.69E-20	3.88E-15	6.09E-04	2.56E-05	7.49E-05	4.11E-05	2.61E-04	8.33E-05	3.00E-04	2.11E-05	1.63E-05	1.57E-08	0.00E+00	0.00E+00	1.27E-07	-1.735	-1.523	-9.194	-12.781	-10.458	-12.220	-6.897
react	1068	9.6	4	6.6E-04	1.5E-03	1	-1.04E-15	-4.34E-11	1.04E-03	2.56E-05	2.50E-05	4.11E-05	3.59E-04	1.67E-04	3.30E-04	2.11E-05	1.41E-05	1.51E-06	0.00E+00	0.00E+00	4.73E-07	-2.145	-2.342	-11.138	-13.804	-11.174	-13.763	-6.996
react	1069	4.65	4	1.5E-07	7.3E-04	1	2.07E-15	2.11E-10	1.09E-04	2.56E-05	2.50E-05	4.11E-05	4.46E-04	2.60E-05	2.00E-05	5.26E-06	2.29E-05	1.57E-08	0.00E+00	0.00E+00	1.55E-07	-1.428	-0.908	0.770	-5.790	-1.416	1.524	-5.308
react	1070	4.4	4	-3.4E-05	6.7E-04	1	1.36E-17	1.53E-12	1.31E-04	2.56E-05	2.50E-05	4.11E-05	2.98E-04	8.33E-05	9.99E-06	5.26E-06	8.77E-06	1.57E-08	0.00E+00	0.00E+00	9.83E-07	-2.379	-2.810	-2.001	-6.694	-1.335	0.487	-4.779
react	1071	4.5	4	-2.9E-05	5.3E-04	1	2.22E-17	3.02E-12	1.30E-04	2.56E-05	2.50E-05	4.11E-05	2.49E-04	6.25E-05	9.99E-06	5.26E-06	2.51E-06	1.57E-08	0.00E+00	0.00E+00	2.18E-07	-2.522	-3.097	-2.863	-6.825	-1.767	-0.419	-4.860
react	1072	8.6	4	4.1E-04	9.0E-04	1	-1.06E-16	-8.27E-12	1.31E-04	2.56E-05	2.00E-04	4.11E-05	2.77E-04	2.08E-05	2.60E-04	2.11E-05	6.80E-06	1.57E-08	0.00E+00	0.00E+00	1.64E-07	-1.261	-0.574	-6.502	-11.206	-9.189	-9.906	-6.714
react	1073	9.2	4	3.7E-04	1.1E-03	1	-1.87E-15	-1.31E-10	1.74E-04	2.56E-05	2.25E-04	4.11E-05	2.20E-04	1.04E-04	2.20E-04	1.58E-05	5.91E-06	1.57E-08	0.00E+00	0.00E+00	1.46E-07	-2.003	-2.059	-9.979	-13.150	-10.439	-12.550	-6.626
react	1074	9.4	4	3.8E-04	1.1E-03	1	-3.13E-15	-2.19E-10	1.74E-04	2.56E-05	2.25E-04	4.11E-05	2.58E-04	7.29E-05	2.20E-04	2.11E-05	5.01E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-2.287	-2.626	-11.667	-13.834	-11.277	-14.308	-7.020
react	1075	9.1	4	8.3E-04	2.2E-03	1	-4.73E-19	-1.45E-14	1.09E-03	2.56E-05	1.50E-04	1.23E-04	4.22E-04	3.44E-04	3.60E-04	4.74E-05	1.65E-05	1.57E-08	0.00E+00	0.00E+00	7.28E-08	-1.287	-0.627	-6.422	-12.264	-9.029	-9.122	-6.130
react	1076	9.1	4	5.2E-04	2.9E-03	1	7.14E-19	1.74E-14	1.52E-03	2.56E-05	1.50E-04	1.23E-04	4.29E-04	5.93E-04	3.20E-04	6.32E-05	3.22E-06	6.30E-08	0.00E+00	0.00E+00	1.82E-08	-1.782	-1.617	-8.174	-12.771	-9.298	-10.157	-5.874
react	1077	9.6	4	9.7E-04	2.0E-03	1	1.65E-18	5.19E-14	1.35E-03	2.56E-05	7.49E-05	4.11E-05	3.70E-04	2.92E-04	3.50E-04	4.74E-05	2.35E-05	6.30E-08	0.00E+00	0.00E+00	9.10E-08	-1.762	-1.576	-9.378	-13.736	-10.563	-12.162	-6.477
react	1078	9.5	4	7.2E-04	2.1E-03	1	5.89E-19	1.76E-14	1.52E-03	2.56E-05	2.50E-05	4.11E-05	5.17E-04	3.33E-04	2.90E-04	3.68E-05	2.40E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-07	-1.866	-1.785	-9.538	-13.164	-10.408	-12.058	-6.253
react	1079	4.75	4	3.6E-06	6.7E-04	1	4.71E-14	5.07E-09	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.09E-04	3.12E-05	9.99E-06	5.26E-06	2.10E-05	1.57E-08	0.00E+00	0.00E+00	2.73E-08	-1.295	-0.641	1.207	-5.728	-1.380	1.831	-5.203
react	1080	4.8	4	1.1E-06	6.9E-04	1	4.49E-15	4.50E-10	2.17E-04	2.56E-05	2.50E-05	4.11E-05	3.85E-04	6.25E-05	9.99E-06	5.26E-06	1.02E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-1.322	-0.697	1.313	-5.797	-1.190	2.232	-4.590
react	1081	5.3	4	4.3E-05	4.1E-04	1	-1.72E-16	-2.96E-11	4.35E-05	2.56E-05	2.50E-05	4.11E-05	2.69E-04	1.04E-05	2.00E-05	5.26E-06	7.16E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.202	1.543	4.047	-5.158	-1.816	2.604	-5.618
react	1082	5.5	4	1.0E-04	5.2E-04	1	4.69E-17	6.05E-12	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.64E-04	1.04E-05	2.00E-05	5.26E-06	1.67E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.367	2.681	5.919	-4.796	-1.652	3.700	-5.330
react	1083	5	4	3.2E-05	6.2E-04	1	1.04E-13	1.17E-08	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.06E-04	2.08E-05	2.00E-05	5.26E-06	1.43E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.645	0.658	3.142	-5.304	-1.394	2.703	-5.365
react	1084	5.3	4	4.7E-05	5.1E-04	1	9.52E-15	1.31E-09	8.70E-05	2.56E-05	2.50E-05	4.11E-05	3.23E-04	2.08E-05	9.99E-06	5.26E-06	1.88E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.166	1.615	4.486	-5.124	-1.486	3.299	-5.330
react	1085	5.2	4	1.4E-04	1.0E-03	1	1.73E-19	1.17E-14	1.52E-04	5.12E-05	2.50E-05	4.11E-05	6.83E-04	3.12E-05	2.50E-05	5.26E-06	7.36E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	0.153	2.254	6.070	-4.311	-0.859	5.069	-4.769
react	1086	6.2	4	6.9E-04	9.7E-04	1	-2.38E-16	-1.62E-11	1.31E-04	5.12E-05	2.50E-05	4.11E-05	6.05E-04	2.08E-05	3.00E-05	5.26E-06	1.33E-04	6.29E-08	0.00E+00	0.00E+00	5.82E-07	1.552	5.052	9.549	-4.375	-1.577	6.032	-4.532
react	1087	5.6	4	1.9E-04	6.8E-04	1	2.41E-19	2.36E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.65E-04	2.08E-05	2.00E-05	5.26E-06	3.26E-05	3.15E-08	0.00E+00	0.00E+00	2.18E-07	0.720	3.388	7.424	-4.548	-1.206	5.042	-4.872
react	1088	5.6	4	1.8E-04	6.8E-04	1	-2.50E-19	-2.49E-14	1.30E-04	2.56E-05	2.50E-05	4.11E-05	4.39E-04	3.12E-05	2.00E-05	5.26E-06	3.40E-05	3.15E-08	0.00E+00	0.00E+00	1.82E-07	0.685	3.317	7.459	-4.584	-1.065	5.290	-4.696
react	1089	5.7	4	1.2E-04	7.3E-04	1	1.43E-14	1.29E-09	2.61E-04	2.56E-05	2.50E-05	4.11E-05	4.27E-04	6.25E-05	2.00E-05	5.26E-06	2.26E-05	3.15E-08	0.00E+00	0.00E+00	7.28E-08	0.612	3.171	7.276	-4.762	-1.029	5.388	-4.571
react	1090	4.8	4	-1.4E-05	2.8E-03	1	1.45E-18	4.42E-14	6.53E-04	2.56E-05	3.24E-04	1.65E-04	3.69E-04	6.87E-04	9.99E-06	5.26E-06	3.22E-06	3.15E-08	0.00E+00	0.00E+00	1.69E-06	-2.074	-2.200	-0.691	-6.561	-0.940	1.968	-4.005
react	1091	6.6	4	1.9E-04	2.0E-03	1	2.78E-14	1.06E-09	6.53E-04	2.56E-05	2.25E-04	8.23E-05	4.66E-04	4.16E-04	3.00E-05	5.26E-06	2.47E-05	3.15E-08	0.00E+00	0.00E+00	4.00E-07	0.769	3.486	6.890	-5.668	-1.888	4.718	-3.897
react	1092	6.2	4	1.7E-04	5.4E-04	1	3.96E-14	4.78E-09	1.74E-04	2.56E-05	2.50E-05	4.11E-05	3.20E-04	3.12E-05	3.00E-05	1.05E-05	1.67E-05	1.57E-08	0.00E+00	0.00E+00	1.82E-08	0.925	3.798	7.242	-4.997	-2.003	4.255	-4.859
react	1093	5	4	1.2E-05	5.2E-04	1	7.24E-17	9.55E-12	1.30E-04	2.56E-05	2.50E-05	4.11E-05	3.20E-04	3.12E-05	2.00E-05	5.26E-06	7.70E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-0.939	0.069	2.164	-5.597	-1.488	2.221	-5.161
react	1094	4.9	4	3.3E-06	5.7E-04	1	9.55E-16	1.15E-10	1.74E-04	2.56E-05	2.50E-05	4.11E-05	3.37E-04	4.16E-05	2.00E-05	5.26E-06	4.83E-06	1.57E-08	0.00E+00	0.00E+00	3.64E-08	-1.218	-0.488	1.373	-5.781	-1.444	1.930	-5.042
react	1095	4.5	4	-3.3E-05	1.1E-03	1	2.69E-16	1.94E-11	2.18E-04	2.56E-05	1.25E-04	8.23E-05	2.08E-04	2.50E-04	9.99E-06	5.26E-06	8.95E-07	1.57E-08	0.00E+00	0.00E+00	7.46E-07	-4.189	-6.431	-8.941	-8.495	-2.843	-4.245	-4.315
react	1096	4.7	4	-1.2E-05	6.0E-04	1	3.84E-16	4.61E-11	1.74E-04	2.56E-05	2.50E-05	4.11E-05	2.61E-04	8.33E-05	1.50E-05	5.26E-06	4.30E-06	1.57E-08	0.00E+00	0.00E+00	6.37E-08	-1.823	-1.697	-0.347	-6.217	-1.349	1.315	-4.749

state	soln	si_Anhydrite	si_Antlerite	si_Aragonite	si_Arsenolite	si_Artinite	si_As2O5	si_Atacamite	si_Azurite	si_Ba(OH)2:8H2O	si_Ba2V2O7:2H2O	si_Ba3(AsO4)2	si_Ba3(VO4)2:4H2O	si_BaCrO4	si_BaF2	si_Barite	si_Be(OH)2(alpha)	si_Be(OH)2(am)	si_Be(OH)2(beta)	si_Bianchite	si_Birnessite	si_Bixbyite	si_Boehmite	si_Brochantite
react	1047	-4.436	-9.651	-4.253	-58.817	-12.776	-32.090	-6.729	-9.208	-16.408	-12.380	7.484	-21.462	-18.015	-9.666	0.230	-1.733	-2.033	-1.333	-8.282	-15.260	-15.294	3.235	-10.461
react	1048	-4.340	-7.714	-2.641	-72.025	-9.666	-35.094	-4.817	-6.245	-14.809	-11.054	9.278	-18.537	-13.133	-9.378	-0.176	-0.892	-1.192	-0.492	-8.919	-11.961	-10.496	1.828	-7.210
react	1049	-5.382	-13.763	-6.802	-42.314	-17.929	-29.039	-8.704	-14.867	-19.384	-20.299	1.609	-32.356	-26.418	-14.867	-1.090	-3.241	-3.541	-2.841	-9.130	-19.430	-21.033	2.917	-16.495
react	1050	-4.004	-8.040	-4.708	-52.348	-14.363	-30.456	-5.235	-8.406	-17.024	-12.488	7.272	-22.186	-19.441	-11.237	0.578	-2.136	-2.436	-1.736	-7.604	-16.311	-16.596	3.985	-8.634
react	1051	-3.819	-9.087	-5.141	-49.786	-15.199	-29.975	-6.145	-10.100	-17.527	-13.616	6.244	-23.817	-21.032	-12.306	0.665	-2.354	-2.654	-1.954	-7.457	-17.330	-18.234	3.783	-10.227
react	1052	-4.224	-12.339	-6.566	-42.951	-17.623	-29.158	-8.344	-14.198	-18.950	-19.233	2.792	-30.857	-25.638	-14.914	0.436	-3.185	-3.485	-2.785	-7.604	-19.833	-21.940	3.241	-14.960
react	1053	-4.181	-13.761	-7.025	-39.904	-18.568	-28.634	-9.664	-16.093	-19.598	-21.525	1.370	-33.797	-27.738	-14.767	0.317	-3.556	-3.856	-3.156	-7.710	-21.459	-24.691	2.352	-17.032
react	1054	-3.077	-6.979	-0.811	-83.349	-5.964	-37.957	-3.362	-5.272	-13.234	-9.745	11.141	-15.653	-9.016	-8.902	0.501	-0.497	-0.797	-0.097	-8.639	-9.733	-7.439	0.803	-5.930
react	1055	-3.678	-7.180	-0.228	-100.770	-4.010	-42.267	-3.487	-5.377	-10.978	-8.940	13.597	-12.593	-4.009	-8.816	0.485	-0.532	-0.832	-0.132	-9.772	-5.017	-0.208	0.253	-5.441
react	1056	-4.407	-7.187	-0.357	-105.682	-2.553	-42.723	-3.490	-5.271	-10.124	-9.163	15.704	-11.960	-3.871	-9.117	0.252	-0.820	-1.120	-0.420	-10.821	-2.589	3.649	-0.226	-5.088
react	1057	-5.379	-14.913	-7.176	-39.888	-18.699	-28.626	-9.625	-16.375	-19.933	-22.194	0.374	-34.801	-28.225	-15.161	-1.240	-3.543	-3.843	-3.143	-9.273	-20.676	-23.125	2.396	-18.161
react	1058	-4.892	-17.902	-8.167	-33.965	-20.706	-27.665	-11.949	-20.816	-20.591	-25.510	-0.639	-38.775	-31.068	-15.995	-0.395	-4.408	-4.708	-4.008	-8.465	-23.014	-26.801	1.480	-22.649
react	1059	-4.935	-17.851	-8.565	-31.803	-21.506	-27.384	-11.920	-21.114	-20.874	-26.877	-1.209	-40.425	-32.364	-16.193	-0.319	-4.780	-5.080	-4.380	-8.295	-24.557	-29.487	1.037	-22.699
react	1060	-2.602	-7.657	-3.224	-64.623	-10.721	-33.394	-6.221	-8.833	-15.893	-12.174	7.727	-20.741	-16.195	-10.700	0.734	-1.327	-1.627	-0.927	-7.520	-12.161	-9.895	1.509	-7.798
react	1061	-3.129	-10.268	-4.313	-54.825	-14.303	-31.295	-7.985	-11.470	-17.278	-13.659	5.668	-23.611	-20.442	-10.741	0.448	-2.038	-2.338	-1.638	-7.931	-14.392	-12.957	2.206	-11.646
react	1062	-3.224	-15.337	-6.710	-38.705	-17.959	-28.435	-11.362	-18.480	-19.818	-22.364	0.911	-34.855	-28.940	-12.869	0.571	-3.740	-4.040	-3.340	-7.931	-19.794	-21.162	0.969	-19.292
react	1063	-1.786	-17.867	-7.261	-30.938	-19.933	-27.351	-13.632	-22.975	-21.108	-27.745	-1.877	-41.527	-33.944	-11.984	1.294	-5.122	-5.422	-4.722	-6.975	-22.120	-24.414	-1.748	-23.337
react	1064	-5.327	-10.860	-4.546	-57.446	-13.262	-31.805	-6.764	-9.922	-16.960	-13.301	6.113	-22.936	-18.801	-10.477	-1.023	-1.823	-2.123	-1.423	-9.280	-14.967	-14.507	3.358	-11.838
react	1065	-5.016	-7.530	-3.625	-67.424	-10.938	-33.994	-4.830	-6.464	-15.318	-11.414	8.851	-19.405	-14.207	-9.886	-0.473	-1.137	-1.437	-0.737	-8.787	-11.910	-9.794	2.798	-7.035
react	1066	-3.936	-4.194	-2.038	-82.772	-7.488	-37.268	-2.756	-3.498	-12.689	-8.869	13.465	-14.231	-7.527	-7.988	0.773	-0.160	-0.460	0.240	-7.764	-7.923	-4.019	2.186	-2.125
react	1067	-4.005	-7.209	-0.530	-96.231	-4.552	-40.798	-4.069	-5.197	-11.529	-9.233	13.413	-13.436	-4.762	-9.305	0.092	-0.460	-0.760	-0.060	-9.650	-5.229	-0.231	0.487	-5.532
react	1068	-4.217	-1.290	-0.737	-101.087	-3.701	-42.026	-0.083	0.425	-11.064	-9.456	13.580	-13.195	-3.523	-9.445	0.251	-0.575	-0.875	-0.175	-9.609	-3.491	2.644	0.077	2.461
react	1069	-5.016	-18.571	-8.447	-32.297	-21.269	-27.431	-12.581	-21.637	-21.428	-27.783	-2.915	-41.885	-32.942	-16.034	-1.072	-4.670	-4.970	-4.270	-8.847	-23.708	-27.889	0.794	-23.593
react	1070	-4.485	-19.032	-9.246	-30.109	-22.569	-27.336	-13.502	-23.725	-21.601	-29.131	-3.341	-43.406	-34.700	-15.310	-0.213	-5.144	-5.444	-4.744	-8.749	-23.906	-27.785	-0.157	-24.552
react	1071	-4.567	-18.698	-9.041	-30.857	-22.157	-27.311	-13.263	-23.105	-21.604	-28.736	-3.325	-43.015	-34.180	-14.653	-0.504	-4.950	-5.250	-4.550	-8.913	-24.152	-28.478	-0.300	-24.011
react	1072	-4.163	-7.693	-0.809	-86.230	-6.644	-38.597	-4.195	-5.130	-12.946	-9.669	11.365	-15.288	-8.063	-9.319	-0.529	-0.436	-0.736	-0.036	-9.586	-7.895	-4.164	0.961	-6.443
react	1073	-3.436	-6.924	-0.279	-95.835	-4.978	-41.000	-4.046	-5.262	-11.742	-9.292	12.572	-13.708	-5.186	-9.569	0.167	-0.436	-0.736	-0.036	-9.574	-5.568	-0.709	0.219	-5.248
react	1074	-3.591	-7.242	-0.104	-99.035	-4.404	-41.800	-4.018	-5.473	-11.316	-9.179	13.050	-13.169	-4.393	-9.293	0.038	-0.491	-0.791	-0.091	-10.108	-5.376	-0.725	-0.065	-5.487
react	1075	-3.161	-6.631	-0.382	-94.352	-4.186	-40.658	-3.936	-5.031	-11.695	-8.887	13.055	-13.256	-5.085	-8.386	0.907	-0.421	-0.721	-0.021	-8.562	-6.306	-1.985	0.935	-5.089
react	1076	-2.958	-4.529	-0.459	-94.405	-4.283	-40.685	-2.681	-3.264	-11.803	-9.125	12.705	-13.602	-5.196	-8.249	1.026	-0.422	-0.722	-0.022	-8.146	-6.930	-3.234	0.440	-2.361
react	1077	-3.532	-5.218	-0.262	-102.347	-3.722	-42.655	-2.844	-3.696	-10.796	-8.945	13.756	-12.415	-3.566	-8.478	0.747	-0.577	-0.877	-0.177	-9.118	-4.226	1.176	0.460	-2.851
react	1078	-3.945	-6.791	-0.896	-98.839	-4.078	-41.302	-3.821	-5.452	-11.050	-9.073	14.347	-12.797	-4.077	-8.751	0.752	-0.532	-0.832	-0.132	-9.142	-4.321	1.185	0.356	-5.036
react	1079	-4.911	-18.061	-8.548	-33.380	-21.169	-27.572	-12.313	-21.636	-21.041	-26.611	-1.898	-40.326	-32.351	-15.517	-0.783	-4.484	-4.784	-4.084	-8.777	-24.059	-28.792	0.928	-22.880
react	1080	-4.597	-17.551	-8.453	-33.947	-20.976	-27.656	-12.195	-21.346	-20.870	-26.068	-1.467	-39.611	-31.933	-15.102	-0.394	-4.396	-4.696	-3.996	-8.451	-24.038	-28.850	0.900	-22.273
react	1081	-5.328	-16.249	-7.162	-39.872	-18.671	-28.618	-10.817	-17.748	-20.159	-22.647	-0.297	-35.480	-28.739	-14.649	-1.429	-3.535	-3.835	-3.135	-9.411	-22.023	-25.819	2.020	-19.956
react	1082	-5.338	-15.480	-6.788	-42.299	-17.902	-29.032	-10.104	-16.616	-19.324	-20.181	1.794	-32.179	-26.949	-14.165	-0.999	-3.235	-3.535	-2.835	-8.975	-21.228	-24.630	2.589	-18.795
react	1083	-5.073	-17.219	-7.754	-36.284	-19.872	-28.024	-11.563	-19.546	-20.391	-24.309	-0.398	-37.374	-30.450	-15.168	-0.796	-4.037	-4.337	-3.637	-8.839	-22.932	-27.038	1.577	-21.537
react	1084	-5.038	-15.974	-7.468	-39.877	-18.983	-28.621	-10.750	-18.369	-19.985	-22.299	0.222	-34.958	-28.570	-14.549	-0.960	-3.538	-3.838	-3.138	-9.034	-22.028	-25.830	2.056	-19.687
react	1085	-4.950	-16.346	-7.282	-37.102	-19.015	-27.633	-10.784	-18.239	-19.738	-22.204	1.951	-34.616	-28.527	-15.328	-0.406	-3.710	-4.010	-3.310	-8.444	-22.148	-25.869	2.375	-20.286
react	1086	-5.064	-10.698	-5.408	-50.958	-15.139	-30.561	-6.658	-10.730	-17.696	-14.551	5.150	-24.920	-21.362	-12.440	-0.481	-2.346	-2.646	-1.946	-8.618	-16.941	-17.455	3.774	-12.048
react	1087	-5.052	-13.915	-6.609	-43.522	-17.530	-29.243	-9.117	-15.171	-19.076	-19.288	2.328	-31.038	-25.933	-14.227	-0.658	-3.095	-3.395	-2.695	-8.753	-19.756	-21.886	2.942	-16.740
react	1088	-4.876	-13.738	-6.610	-43.522	-17.531	-29.243	-9.143	-15.171	-18.992	-19.121	2.578	-30.788	-25.850	-14.077	-0.398	-3.095	-3.395	-2.695	-8.532	-19.836	-22.046	2.907	-16.563
react	1089	-4.572	-13.044	-6.431	-44.744	-17.156	-29.454	-8.864	-14.620	-18.839	-18.423	2.828	-29.935	-25.533	-13.459	-0.136	-2.961	-3.261	-2.561	-8.371	-19.838	-22.249	2.834	-15.674
react	1090	-2.564	-15.877	-7.421	-33.998	-19.923	-27.681	-11.778	-20.675	-20.407	-25.141	-0.103	-38.222	-31.577	-13.326	1.071	-4.463	-4.763	-4.063	-7.652	-22.149	-25.072	0.148	-20.376
react	1091	-2.889	-8.939	-3.923	-56.196	-13.246	-31.580	-6.320	-9.881	-16.789	-12.819	6.851	-22.282	-19.544	-10.587	0.897	-1.932	-2.232	-1.532	-7.782	-15.551	-15.475	2.991	-9.861
react	1092	-4.850	-12.243	-5.392	-50.934	-15.108	-30.549	-8.096	-12.473	-17.776	-14.708	4.920	-25.159	-22.212	-11.304	-0.361	-2.357	-2.657	-1.957	-8.509	-18.430	-20.434	3.147	-14.177
react	1093	-4.869	-17.003	-7.750	-36.279	-19.866	-28.022	-11.656	-19.530	-20.505	-24.538	-0.739	-37.718	-30.561	-14.710	-0.710	-4.036	-4.336	-3.636	-8.780	-22.929	-27.031	1.283	-21.316
react	1094	-4.750	-17.289	-7.949	-35.100	-20.267	-27.832	-11.938	-20.130	-20.718	-25.364	-1.189	-38.757	-31.274	-14.767	-0.601	-4.213	-4.513	-3.813	-8.989	-23.331	-27.636	1.004	-21.804
react	1095	-3.311	-18.199	-8.375	-30.873	-21.617	-27.319	-13.409	-23.197	-21.157	-27.842	-1.991	-41.673	-33.794	-11.711	0.533	-5.045	-5.345	-4.645	-7.772	-23.651	-27.475	-1.967	-23.543
react	1096	-4.454	-17.795	-8.473	-32.826	-21.194	-27.495	-12.654	-21.575	-21.009	-26.745	-1.723	-40.428	-32.574	-14.651	-0.191	-4.578	-4.878	-4.178	-8.655	-23.892	-28.357	0.400	-22.713

state	soln	si_Brucite	si_Bunsenite	si_Ca(VO3)2	si_Ca2V2O7	si_Ca2V2O7:2H2O	si_Ca3(AsO4)2:4H2O	si_Ca3(VO4)2	si_Ca3(VO4)2:4H2O	si_CaCrO4	si_Calcite	si_Cd(BO2)2	si_Cd(OH)2	si_Cd(OH)2(am)	si_Cd3(OH)2(SO4)2	si_Cd3(OH)4SO4	si_Cd4(OH)6SO4	si_CdCl2	si_CdCl2:1H2O	si_CdCl2:2.5H2O	si_CdF2	si_Cdmetal(alpha)	si_Cdmetal(gamma)	si_CdOHCl
react	1047	-7.686	-6.196	-9.200	-12.100	-16.152	-20.864	-24.620	-25.520	-24.465	-4.073	-14.288	-9.158	-9.244	-28.723	-26.838	-28.192	-16.028	-14.994	-14.774	-17.773	-30.629	-30.732	-9.638
react	1048	-5.885	-4.881	-8.971	-9.769	-13.821	-17.562	-20.187	-21.087	-19.080	-2.461	-12.929	-7.363	-7.449	-27.351	-23.460	-23.019	-15.667	-14.633	-14.413	-17.290	-30.634	-30.737	-8.560
react	1049	-10.289	-8.672	-13.770	-19.272	-23.324	-25.619	-34.394	-35.294	-32.495	-6.622	-17.177	-11.776	-11.862	-33.267	-33.037	-37.009	-14.906	-13.872	-13.652	-22.618	-30.647	-30.750	-10.386
react	1050	-8.517	-6.124	-8.608	-12.040	-16.092	-20.824	-25.091	-25.991	-25.807	-4.528	-14.968	-10.010	-10.096	-29.354	-28.432	-30.638	-14.756	-13.722	-13.502	-19.581	-30.681	-30.784	-9.428
react	1051	-8.921	-6.828	-9.135	-12.971	-17.023	-21.556	-26.426	-27.326	-27.300	-4.961	-15.474	-10.414	-10.500	-29.385	-29.052	-31.662	-14.797	-13.762	-13.543	-20.551	-30.684	-30.788	-9.650
react	1052	-10.220	-8.466	-13.505	-18.941	-22.993	-25.538	-33.996	-34.896	-32.082	-6.386	-16.835	-11.720	-11.806	-30.914	-31.775	-35.691	-14.574	-13.540	-13.320	-23.041	-30.690	-30.794	-10.191
react	1053	-10.707	-9.216	-14.987	-20.909	-24.961	-26.475	-36.452	-37.352	-34.021	-6.845	-17.252	-12.192	-12.278	-31.273	-32.664	-37.052	-15.084	-14.049	-13.830	-22.719	-30.663	-30.766	-10.683
react	1054	-3.869	-3.609	-8.651	-7.289	-11.341	-13.943	-15.546	-16.446	-14.378	-0.631	-11.857	-6.150	-6.236	-25.506	-20.716	-19.062	-13.721	-12.686	-12.467	-17.176	-30.820	-30.924	-6.980
react	1055	-2.349	-1.843	-10.687	-7.655	-11.707	-13.243	-14.242	-15.142	-9.956	-0.048	-10.420	-4.140	-4.226	-24.019	-16.958	-13.294	-14.721	-13.687	-13.467	-17.336	-31.010	-31.114	-6.475
react	1056	-1.376	-1.008	-12.260	-8.868	-12.920	-12.622	-15.096	-15.997	-10.314	-0.177	-10.632	-3.490	-3.576	-24.245	-16.097	-11.783	-15.519	-14.484	-14.265	-17.841	-31.361	-31.464	-6.549
react	1057	-10.684	-9.669	-14.963	-20.860	-24.912	-26.393	-36.378	-37.278	-34.148	-6.996	-17.874	-12.168	-12.254	-33.644	-33.813	-38.177	-15.074	-14.039	-13.820	-22.754	-30.639	-30.742	-10.666
react	1058	-11.701	-10.686	-17.978	-24.893	-28.945	-28.481	-41.427	-42.327	-37.350	-7.987	-18.593	-13.193	-13.279	-33.711	-35.383	-40.772	-14.757	-13.723	-13.503	-23.954	-30.663	-30.767	-11.019
react	1059	-12.103	-11.088	-19.181	-26.497	-30.549	-29.407	-43.433	-44.333	-38.765	-8.385	-18.772	-13.597	-13.683	-34.206	-36.237	-42.029	-14.693	-13.658	-13.438	-24.273	-30.667	-30.771	-11.189
react	1060	-6.250	-4.029	-8.180	-9.236	-13.288	-16.633	-19.911	-20.811	-21.316	-3.044	-14.613	-8.424	-8.510	-26.545	-24.648	-25.269	-16.953	-15.918	-15.698	-18.589	-30.695	-30.798	-9.733
react	1061	-8.310	-5.974	-8.520	-11.201	-15.253	-19.413	-23.503	-24.403	-25.804	-4.133	-15.963	-9.781	-9.867	-28.417	-27.619	-29.597	-16.890	-15.855	-15.636	-18.602	-30.652	-30.755	-10.380
react	1062	-10.318	-9.003	-14.903	-20.341	-24.393	-24.824	-35.400	-36.300	-34.519	-6.530	-18.252	-12.396	-12.482	-30.938	-32.803	-37.395	-15.951	-14.917	-14.697	-20.805	-30.667	-30.770	-11.219
react	1063	-11.317	-10.040	-18.279	-24.293	-28.345	-25.467	-39.927	-40.827	-38.809	-7.081	-19.670	-13.918	-14.004	-31.477	-35.355	-41.469	-15.955	-14.921	-14.701	-20.152	-30.789	-30.892	-11.981
react	1064	-7.877	-6.386	-9.207	-12.297	-16.349	-21.148	-25.006	-25.906	-24.888	-4.366	-14.894	-9.352	-9.438	-30.707	-28.120	-29.667	-15.616	-14.582	-14.362	-18.226	-30.622	-30.726	-9.529
react	1065	-6.474	-4.985	-9.201	-10.888	-14.940	-19.129	-22.195	-23.095	-20.535	-3.445	-13.425	-7.945	-8.031	-28.671	-24.992	-25.133	-16.235	-15.201	-14.981	-17.870	-30.616	-30.719	-9.135
react	1066	-4.310	-1.913	-9.450	-8.673	-12.725	-15.010	-17.515	-18.415	-14.020	-1.858	-10.616	-5.798	-5.884	-24.999	-19.936	-17.930	-16.236	-15.201	-14.981	-16.455	-30.669	-30.772	-8.062
react	1067	-2.711	-1.582	-10.363	-7.815	-11.867	-13.228	-14.887	-15.787	-10.643	-0.350	-10.657	-4.389	-4.475	-24.451	-17.548	-14.133	-15.885	-14.851	-14.631	-17.522	-30.860	-30.963	-7.182
react	1068	-2.135	-0.955	-11.421	-8.779	-12.831	-14.172	-15.756	-16.656	-9.775	-0.557	-10.824	-3.952	-4.038	-23.751	-16.542	-12.690	-15.776	-14.741	-14.522	-17.690	-31.022	-31.126	-6.908
react	1069	-11.984	-10.969	-18.862	-26.059	-30.111	-29.097	-42.877	-43.777	-38.671	-8.267	-18.666	-13.466	-13.552	-34.212	-36.044	-41.705	-15.191	-14.156	-13.937	-23.430	-30.636	-30.740	-11.373
react	1070	-12.485	-11.471	-20.364	-28.064	-32.116	-30.509	-45.384	-46.284	-40.757	-9.066	-19.582	-13.963	-14.049	-33.637	-36.501	-42.659	-15.537	-14.503	-14.283	-23.029	-30.633	-30.737	-11.795
react	1071	-12.279	-11.264	-19.757	-27.250	-31.302	-29.864	-44.364	-45.264	-40.028	-8.861	-19.507	-13.754	-13.840	-33.589	-36.165	-42.115	-15.682	-14.647	-14.427	-22.160	-30.625	-30.728	-11.763
react	1072	-4.094	-3.166	-8.919	-7.324	-11.376	-13.886	-15.349	-16.249	-13.481	-0.629	-11.343	-5.615	-5.701	-26.539	-20.431	-18.242	-15.657	-14.623	-14.403	-17.346	-30.686	-30.789	-7.681
react	1073	-2.908	-2.156	-9.715	-6.885	-10.937	-12.585	-13.675	-14.576	-10.573	-0.099	-10.688	-4.522	-4.608	-24.274	-17.659	-14.377	-15.968	-14.934	-14.714	-17.706	-30.793	-30.896	-7.290
react	1074	-2.510	-1.888	-10.054	-6.826	-10.878	-12.189	-13.217	-14.117	-9.807	0.076	-10.613	-4.186	-4.272	-24.377	-17.207	-13.589	-15.892	-14.858	-14.638	-17.520	-30.857	-30.960	-7.084
react	1075	-2.670	-2.084	-9.822	-7.411	-11.463	-13.499	-14.620	-15.520	-10.938	-0.202	-10.450	-4.774	-4.860	-23.643	-17.721	-14.691	-15.466	-14.432	-14.212	-16.822	-30.844	-30.948	-7.165
react	1076	-2.692	-2.383	-9.867	-7.479	-11.531	-13.594	-14.711	-15.611	-10.963	-0.279	-9.678	-4.780	-4.866	-23.209	-17.513	-14.489	-15.464	-14.430	-14.210	-16.584	-30.851	-30.954	-7.167
react	1077	-2.154	-1.443	-10.990	-7.890	-11.942	-13.430	-14.411	-15.311	-9.629	-0.082	-9.736	-3.968	-4.054	-23.346	-16.364	-12.529	-15.773	-14.738	-14.519	-17.008	-31.039	-31.142	-6.915
react	1078	-2.351	-1.221	-11.282	-8.855	-12.907	-14.094	-16.048	-16.948	-10.558	-0.716	-10.210	-4.098	-4.184	-23.215	-16.493	-12.786	-15.412	-14.378	-14.158	-17.156	-30.968	-31.072	-6.800
react	1079	-11.782	-10.767	-18.260	-25.256	-29.308	-28.634	-41.872	-42.772	-38.264	-8.368	-18.696	-13.263	-13.349	-33.797	-35.532	-40.990	-15.261	-14.227	-14.007	-23.096	-30.634	-30.737	-11.307
react	1080	-11.685	-10.670	-17.963	-24.863	-28.915	-28.427	-41.382	-42.282	-37.921	-8.273	-18.599	-13.165	-13.251	-33.069	-35.021	-40.382	-15.317	-14.282	-14.063	-22.754	-30.636	-30.739	-11.286
react	1081	-10.671	-9.655	-14.949	-20.833	-24.885	-26.344	-36.337	-37.237	-34.422	-6.982	-17.852	-12.146	-12.232	-33.503	-33.709	-38.051	-15.605	-14.570	-14.350	-21.993	-30.617	-30.720	-10.920
react	1082	-10.276	-9.261	-13.757	-19.246	-23.298	-25.572	-34.355	-35.255	-33.073	-6.608	-17.008	-11.754	-11.840	-33.138	-32.939	-36.890	-15.352	-14.317	-14.098	-21.953	-30.625	-30.728	-10.598
react	1083	-11.280	-10.265	-16.758	-23.251	-27.303	-27.579	-39.365	-40.265	-36.511	-7.574	-18.130	-12.760	-12.846	-33.617	-34.688	-39.645	-15.265	-14.230	-14.011	-22.895	-30.631	-30.734	-11.057
react	1084	-10.676	-9.661	-14.954	-20.843	-24.895	-26.362	-36.352	-37.252	-34.433	-7.288	-17.815	-12.153	-12.239	-32.936	-33.436	-37.785	-15.453	-14.419	-14.199	-22.075	-30.624	-30.727	-10.848
react	1085	-10.895	-9.880	-15.573	-21.681	-25.733	-26.032	-37.409	-38.309	-34.856	-7.102	-17.465	-12.384	-12.470	-33.013	-33.822	-38.402	-14.844	-13.810	-13.590	-23.332	-30.655	-30.758	-10.659
react	1086	-8.892	-6.878	-10.000	-14.106	-18.158	-22.951	-27.831	-28.731	-27.729	-5.228	-15.780	-10.379	-10.465	-31.232	-29.923	-32.498	-14.943	-13.909	-13.689	-20.480	-30.649	-30.753	-9.706
react	1087	-10.082	-8.767	-13.168	-18.464	-22.516	-25.205	-33.380	-34.280	-32.112	-6.429	-16.846	-11.565	-11.651	-32.385	-32.279	-36.039	-15.152	-14.118	-13.898	-22.073	-30.635	-30.739	-10.403
react	1088	-10.083	-8.767	-13.169	-18.466	-22.518	-25.207	-33.383	-34.283	-32.113	-6.430	-16.846	-11.565	-11.651	-32.030	-32.101	-35.862	-15.203	-14.169	-13.949	-22.007	-30.635	-30.739	-10.429
react	1089	-9.887	-8.872	-12.582	-17.683	-21.735	-24.831	-32.404	-33.304	-31.753	-6.251	-16.622	-11.368	-11.454	-31.224	-31.403	-34.968	-15.230	-14.196	-13.976	-21.346	-30.639	-30.742	-10.344
react	1090	-11.158	-9.903	-16.931	-22.799	-26.851	-25.357	-38.286	-39.186	-36.996	-7.241	-18.864	-13.245	-13.331	-31.306	-34.260	-39.701	-15.459	-14.425	-14.205	-21.522	-30.716	-30.819	-11.397
react	1091	-7.836	-6.824	-8.378	-10.779	-14.831	-18.858	-22.800	-23.700	-25.114	-3.743	-15.244	-9.623	-9.709	-28.022	-27.184	-29.003	-15.227	-14.192	-13.972	-18.779	-30.694	-30.797	-9.469
react	1092	-8.878	-7.863	-9.983	-14.074	-18.126	-22.897	-27.786	-28.686	-28.485	-5.212	-15.460	-10.355	-10.441	-30.760	-29.651	-32.202	-15.465	-14.431	-14.211	-19.240	-30.626	-30.729	-9.955
react	1093	-11.277	-10.262	-16.755	-23.245	-27.297	-27.568	-39.356	-40.256	-36.505	-7.570	-18.093	-12.754	-12.840	-33.198	-34.470	-39.420	-15.465	-14.431	-14.211	-22.316	-30.625	-30.728	-11.154
react	1094	-11.479	-10.464	-17.357	-24.050	-28.102	-27.986	-40.363	-41.263	-37.207	-7.769	-18.238	-12.957	-13.043	-33.163	-34.757	-39.910	-15.422	-14.388	-14.168	-22.364	-30.628	-30.731	-11.235
react	1095	-12.009	-10.693	-19.092	-25.919	-29.971	-27.874	-42.366	-43.266	-39.422	-8.195	-19.697	-13.786	-13.872	-32.503	-35.669	-41.650	-15.881	-14.847	-14.627	-19.698	-30.656	-30.760	-11.878
react	1096	-11.883	-10.324	-18.562	-25.659	-29.711	-28.862	-42.377	-43.277	-38.622	-8.293	-18.899	-13.359	-13.445	-32.969	-35.262	-40.817	-15.649	-14.615	-14.395	-22.359	-30.630	-30.733	-11.549

state	soln	si_CdSO4	si_CdSO4:1H2O	si_CdSO4:2.67H2O	si_Cerussite	si_CH4(g)	si_Chalcanthite	si_Claudetite	si_Co(BO2)2	si_Co(OH)2	si_Co(OH)3	si_CO2(g)	si_Co3(AsO4)2	si_Co3O4	si_CoCl2	si_CoCl2:6H2O	si_CoCO3	si_CoF2	si_CoF3	si_CoFe2O4	si_CoO	si_CoSO4	si_CoSO4:6H2O	si_Cotunnite
react	1047	-13.078	-11.524	-11.377	-2.527	-66.848	-9.472	-58.512	-30.235	-7.324	-13.521	-3.346	-21.108	-15.394	-23.670	-17.939	-5.743	-16.105	-49.580	22.197	-7.816	-14.768	-9.493	-10.557
react	1048	-13.289	-11.735	-11.588	-1.994	-74.538	-10.163	-71.720	-28.876	-5.530	-10.827	-3.836	-18.731	-8.213	-23.310	-17.579	-4.439	-15.622	-48.853	25.483	-6.023	-14.980	-9.705	-10.968
react	1049	-14.040	-12.486	-12.340	-5.096	-56.394	-9.739	-42.009	-32.631	-9.450	-16.947	-3.292	-24.434	-24.371	-22.056	-16.325	-7.815	-20.457	-56.344	13.715	-9.942	-15.238	-9.963	-9.439
react	1050	-12.967	-11.413	-11.266	-2.795	-63.571	-8.293	-52.043	-29.721	-6.983	-13.580	-3.270	-18.450	-15.170	-21.204	-15.474	-5.325	-16.719	-51.071	22.528	-7.475	-13.464	-8.189	-8.777
react	1051	-12.780	-11.227	-11.080	-3.367	-62.000	-8.249	-49.481	-30.800	-7.960	-14.757	-3.298	-20.901	-18.503	-21.819	-16.089	-6.331	-18.263	-53.098	20.121	-8.453	-13.852	-8.577	-8.958
react	1052	-12.892	-11.338	-11.191	-4.699	-56.626	-8.536	-42.646	-32.213	-9.317	-16.764	-3.124	-24.156	-23.874	-21.648	-15.917	-7.514	-20.804	-56.882	14.630	-9.810	-14.015	-8.740	-8.936
react	1053	-12.835	-11.281	-11.134	-5.453	-54.597	-8.657	-39.599	-32.885	-10.045	-17.742	-3.096	-25.815	-26.557	-22.413	-16.682	-8.214	-20.737	-56.667	11.499	-10.537	-14.213	-8.938	-9.755
react	1054	-12.973	-11.419	-11.272	-1.966	-80.468	-10.517	-83.044	-27.743	-4.256	-8.853	-4.167	-17.770	-2.990	-21.303	-15.573	-3.495	-15.447	-48.527	25.851	-4.748	-14.604	-9.329	-9.876
react	1055	-13.234	-11.681	-11.534	-2.073	-90.356	-12.098	-100.465	-26.554	-2.494	-5.991	-5.254	-16.795	4.496	-22.551	-16.821	-2.821	-15.855	-48.920	28.301	-2.986	-15.113	-9.838	-11.906
react	1056	-13.672	-12.119	-11.972	-2.012	-94.843	-12.825	-105.377	-27.123	-2.201	-5.198	-5.742	-16.372	6.375	-23.706	-17.975	-3.016	-16.718	-49.860	27.921	-2.693	-15.908	-10.633	-12.805
react	1057	-14.033	-12.479	-12.332	-5.769	-54.773	-9.856	-39.583	-33.808	-10.322	-18.019	-3.271	-26.637	-27.388	-22.703	-16.973	-8.666	-21.073	-57.033	11.526	-10.814	-15.711	-10.436	-9.909
react	1058	-13.554	-12.000	-11.853	-6.462	-50.748	-9.850	-33.660	-34.521	-11.340	-19.537	-3.246	-28.730	-31.441	-22.380	-16.649	-9.659	-22.267	-58.815	7.827	-11.832	-15.226	-9.951	-9.286
react	1059	-13.599	-12.046	-11.899	-6.683	-49.143	-9.594	-31.498	-34.698	-11.742	-20.139	-3.241	-29.656	-33.049	-22.314	-16.583	-10.056	-22.584	-59.289	5.535	-12.235	-15.270	-9.995	-9.044
react	1060	-12.355	-10.801	-10.655	-3.381	-70.863	-8.814	-64.318	-29.863	-5.894	-11.691	-4.162	-18.122	-10.305	-23.898	-18.168	-5.129	-16.224	-50.074	21.893	-6.387	-13.350	-8.075	-12.254
react	1061	-12.613	-11.059	-10.912	-4.095	-64.727	-8.952	-54.520	-30.735	-6.773	-13.270	-3.625	-18.659	-14.341	-23.357	-17.627	-5.471	-15.759	-49.636	18.860	-7.265	-13.129	-7.854	-12.085
react	1062	-12.566	-11.012	-10.865	-6.319	-53.966	-8.867	-38.400	-33.292	-9.657	-17.454	-3.264	-24.451	-25.593	-22.688	-16.957	-7.994	-18.231	-53.203	9.302	-10.149	-13.351	-8.076	-11.116
react	1063	-12.074	-10.520	-10.373	-7.859	-48.342	-8.368	-30.633	-34.072	-10.540	-19.037	-3.240	-26.017	-29.643	-22.053	-16.322	-8.853	-16.939	-51.523	3.218	-11.032	-12.221	-6.946	-11.162
react	1064	-13.972	-12.418	-12.272	-3.195	-66.152	-10.342	-57.141	-30.837	-7.514	-13.811	-3.450	-21.393	-16.164	-23.255	-17.524	-6.037	-16.553	-50.257	22.359	-8.006	-15.659	-10.384	-10.515
react	1065	-13.658	-12.104	-11.957	-2.281	-72.233	-9.960	-67.119	-29.073	-5.812	-11.409	-3.931	-18.476	-9.659	-23.578	-17.848	-4.816	-15.903	-49.433	26.150	-6.305	-15.050	-9.775	-11.146
react	1066	-12.895	-11.341	-11.194	-1.327	-81.911	-9.771	-82.467	-26.104	-3.506	-8.003	-4.809	-14.832	-0.540	-23.419	-17.689	-3.388	-14.328	-47.124	30.394	-3.998	-14.127	-8.852	-11.462
react	1067	-13.326	-11.772	-11.625	-2.021	-88.572	-12.002	-95.926	-26.738	-2.691	-6.388	-5.070	-15.915	3.506	-23.662	-17.932	-2.834	-15.989	-49.223	28.525	-3.183	-15.152	-9.877	-12.953
react	1068	-13.194	-11.641	-11.494	-2.116	-91.274	-10.233	-100.782	-26.752	-2.099	-5.496	-5.372	-15.370	5.880	-23.399	-17.669	-2.544	-16.003	-49.239	28.561	-2.592	-14.867	-9.592	-13.074
react	1069	-13.668	-12.114	-11.967	-7.339	-49.544	-9.967	-31.992	-34.602	-11.621	-19.968	-3.242	-29.341	-32.587	-22.823	-17.092	-9.937	-21.751	-58.050	5.444	-12.114	-15.348	-10.073	-10.328
react	1070	-13.132	-11.578	-11.431	-8.140	-47.841	-9.432	-29.804	-35.522	-12.123	-20.720	-3.539	-30.750	-34.590	-23.173	-17.443	-10.735	-21.355	-57.455	2.604	-12.615	-14.817	-9.542	-10.681
react	1071	-13.212	-11.658	-11.512	-7.933	-48.642	-9.513	-30.552	-35.449	-11.916	-20.413	-3.541	-30.103	-33.769	-23.319	-17.588	-10.529	-20.487	-56.157	2.337	-12.408	-14.898	-9.623	-10.826
react	1072	-13.757	-12.203	-12.056	-1.960	-82.299	-11.634	-85.925	-27.307	-3.798	-8.195	-4.397	-17.038	-1.217	-23.317	-17.586	-3.268	-15.695	-48.928	27.187	-4.291	-15.465	-10.190	-12.111
react	1073	-13.171	-11.617	-11.470	-2.070	-87.804	-11.716	-95.530	-26.749	-2.802	-6.599	-5.102	-16.452	2.972	-23.724	-17.994	-2.977	-16.152	-49.511	27.653	-3.294	-14.976	-9.701	-12.920
react	1074	-13.390	-11.836	-11.689	-2.133	-89.627	-12.191	-98.730	-26.761	-2.555	-6.152	-5.325	-16.510	4.114	-23.737	-18.006	-2.953	-16.054	-49.288	27.505	-3.047	-15.283	-10.008	-13.019
react	1075	-12.729	-11.176	-11.029	-1.951	-86.688	-11.156	-94.047	-26.456	-3.000	-6.897	-4.786	-16.704	2.178	-23.168	-17.438	-2.859	-15.214	-48.105	28.445	-3.492	-14.480	-9.205	-12.363
react	1076	-12.509	-10.955	-10.809	-1.976	-86.742	-10.304	-94.100	-25.686	-3.008	-6.905	-4.841	-16.753	2.155	-23.168	-17.437	-2.921	-14.977	-47.746	27.017	-3.500	-14.261	-8.987	-12.326
react	1077	-12.983	-11.430	-11.283	-1.808	-91.257	-11.391	-102.042	-25.957	-2.408	-5.805	-5.355	-16.926	4.953	-23.689	-17.958	-2.836	-15.614	-48.501	28.686	-2.901	-14.948	-9.673	-12.763
react	1078	-12.853	-11.300	-11.153	-1.804	-90.418	-11.743	-98.534	-26.378	-2.485	-5.982	-5.316	-15.803	4.522	-23.276	-17.545	-2.874	-15.710	-48.706	28.782	-2.978	-14.766	-9.491	-12.308
react	1079	-13.562	-12.008	-11.861	-7.441	-50.647	-9.861	-33.075	-34.633	-11.420	-19.667	-3.545	-28.877	-31.781	-22.894	-17.163	-10.038	-21.418	-57.552	6.171	-11.912	-15.243	-9.968	-10.399
react	1080	-13.247	-11.693	-11.546	-7.046	-51.049	-9.546	-33.642	-34.536	-11.323	-19.520	-3.547	-28.669	-31.390	-22.950	-17.219	-9.942	-21.077	-57.039	5.936	-11.815	-14.929	-9.654	-10.157
react	1081	-13.974	-12.420	-12.273	-6.053	-54.773	-10.276	-39.567	-33.793	-10.307	-18.004	-3.271	-26.585	-27.343	-23.242	-17.511	-8.651	-20.320	-55.910	9.676	-10.799	-15.659	-10.384	-10.746
react	1082	-13.987	-12.433	-12.286	-5.380	-56.394	-10.290	-41.994	-32.946	-9.912	-17.409	-3.292	-25.814	-25.759	-22.986	-17.255	-8.277	-20.277	-55.843	11.992	-10.405	-15.669	-10.394	-10.192
react	1083	-13.723	-12.169	-12.022	-6.645	-52.355	-10.023	-35.979	-34.067	-10.917	-18.914	-3.253	-27.821	-29.774	-22.898	-17.167	-9.243	-21.217	-57.252	7.848	-11.410	-15.405	-10.130	-10.403
react	1084	-13.686	-12.132	-11.985	-6.360	-55.074	-9.988	-39.572	-33.754	-10.312	-18.009	-3.572	-26.603	-27.359	-23.089	-17.358	-8.957	-20.400	-56.027	10.498	-10.805	-15.370	-10.095	-10.594
react	1085	-13.609	-12.055	-11.909	-5.702	-53.869	-9.907	-36.797	-33.395	-10.533	-18.330	-3.167	-26.278	-28.222	-22.469	-16.739	-8.773	-21.646	-57.887	10.822	-11.026	-15.283	-10.008	-9.501
react	1086	-13.721	-12.168	-12.021	-3.475	-61.997	-9.436	-50.653	-31.235	-8.053	-14.850	-3.296	-21.767	-18.782	-22.094	-16.363	-6.422	-18.320	-53.138	19.778	-8.546	-14.921	-9.646	-9.250
react	1087	-13.705	-12.151	-12.004	-5.028	-57.208	-9.707	-43.217	-32.781	-9.720	-17.117	-3.306	-25.448	-24.982	-22.783	-17.053	-8.099	-20.394	-56.015	13.352	-10.212	-15.385	-10.110	-9.816
react	1088	-13.528	-11.974	-11.827	-5.030	-57.208	-9.530	-43.217	-32.782	-9.720	-17.117	-3.306	-25.450	-24.984	-22.835	-17.105	-8.100	-20.329	-55.917	13.387	-10.213	-15.208	-9.933	-9.868
react	1089	-13.223	-11.669	-11.522	-5.030	-58.025	-9.226	-44.439	-32.558	-9.524	-16.821	-3.323	-25.073	-24.195	-22.863	-17.132	-7.921	-19.667	-54.923	13.815	-10.017	-14.904	-9.629	-10.075
react	1090	-12.325	-10.772	-10.625	-7.463	-51.049	-8.321	-33.693	-34.105	-10.706	-18.903	-3.547	-26.845	-29.540	-22.396	-16.665	-9.326	-19.148	-54.453	5.374	-11.198	-13.311	-8.036	-10.636
react	1091	-12.494	-10.940	-10.793	-3.531	-65.417	-8.536	-55.891	-31.181	-7.780	-14.177	-3.515	-21.966	-17.162	-22.860	-17.129	-6.368	-17.101	-51.046	20.689	-8.272	-14.176	-8.901	-10.126
react	1092	-13.497	-11.943	-11.796	-4.002	-61.996	-9.817	-50.629	-31.400	-8.515	-15.312	-3.294	-23.139	-20.167	-23.101	-17.370	-6.882	-17.565	-51.775	17.539	-9.007	-15.181	-9.906	-10.324
react	1093	-13.517	-11.963	-11.816	-6.642	-52.355	-9.818	-35.974	-34.033	-10.914	-18.911	-3.253	-27.809	-29.763	-23.100	-17.370	-9.239	-20.641	-56.389	7.319	-11.406	-15.201	-9.926	-10.606
react	1094	-13.398	-11.844	-11.697	-6.842	-51.551	-9.698	-34.795	-34.177	-11.116	-19.213	-3.249	-28.227	-30.571	-23.057	-17.326	-9.438	-20.688	-56.458	6.107	-11.609	-15.081	-9.806	-10.563
react	1095	-12.653	-11.099	-10.952	-7.979	-48.643	-8.953	-30.568	-35.339	-11.648	-20.145	-3.541	-29.307	-32.965	-23.219	-17.488	-10.261	-17.725	-52.148	1.640	-12.140	-14.040	-8.765	-11.040
react	1096	-13.100	-11.546	-11.399	-7.367	-50.070	-9.400	-32.521	-34.841	-11.520	-19.817	-3.368	-29.102	-32.183	-23.286	-17.555	-9.961	-20.686	-56.452	4.391	-12.013	-14.785	-9.510	-10.795

state	soln	si_Cr(OH)2	si_Cr(OH)3	si_Cr(OH)3(am)	si_Cr2O3	si_CrCl2	si_CrCl3	si_CrF3	si_Crmetal	si_CrO3	si_Cryolite	si_Cu(OH)2	si_Cu2SO4	si_Cu3(AsO4)2:2H2O	si_CuCO3	si_CuCrO4	si_CuF	si_CuF2	si_CuF2:2H2O	si_Cumetal	si_CuOCuSO4	si_Cupricferrite	si_Cuprite	si_Cuprousferrite	si_CuSO4
react	1047	-19.367	-2.031	0.055	0.968	-43.813	-47.569	-24.566	-60.631	-32.461	-15.150	-3.050	-20.757	-14.612	-4.369	-24.607	-9.316	-18.963	-13.298	-4.530	-16.791	12.535	-3.566	12.881	-15.051
react	1048	-19.684	-1.448	0.638	2.134	-45.563	-49.136	-25.950	-62.748	-29.178	-17.591	-1.736	-21.935	-13.673	-3.545	-20.010	-9.557	-18.960	-13.295	-5.016	-16.168	15.342	-2.737	14.041	-15.743
react	1049	-19.595	-3.558	-1.473	-2.088	-40.300	-43.486	-29.433	-58.259	-37.888	-26.956	-4.972	-20.347	-17.328	-6.238	-31.957	-11.052	-23.111	-17.446	-3.852	-18.980	4.256	-4.810	9.080	-15.318
react	1050	-18.577	-1.641	0.445	1.747	-40.899	-43.993	-25.609	-59.042	-33.271	-18.115	-2.834	-18.562	-12.330	-4.076	-25.201	-9.178	-19.702	-14.037	-3.514	-15.396	12.740	-2.334	13.491	-13.872
react	1051	-18.865	-2.129	-0.044	0.771	-40.824	-43.937	-26.947	-58.930	-34.359	-20.202	-3.380	-18.664	-13.485	-4.650	-26.835	-9.807	-20.814	-15.149	-3.660	-15.897	10.766	-3.025	12.431	-13.828
react	1052	-19.448	-3.362	-1.276	-1.695	-39.878	-42.877	-29.957	-58.212	-37.542	-26.309	-4.861	-19.134	-17.114	-5.958	-31.500	-11.231	-23.480	-17.816	-3.841	-17.667	5.150	-4.689	9.533	-14.116
react	1053	-19.900	-4.064	-1.978	-3.099	-40.367	-43.634	-29.466	-58.164	-38.994	-25.614	-5.512	-19.405	-18.541	-6.580	-33.602	-11.234	-23.335	-17.671	-3.992	-18.438	2.096	-5.490	7.930	-14.236
react	1054	-19.943	-1.006	1.079	3.016	-45.089	-47.596	-27.157	-64.407	-26.636	-17.009	-1.191	-23.143	-14.902	-3.331	-16.924	-10.263	-19.514	-13.850	-5.871	-15.977	14.979	-3.048	13.432	-16.096
react	1055	-21.591	-1.554	0.531	1.920	-49.747	-52.659	-30.960	-68.255	-23.884	-21.336	-0.501	-26.235	-17.143	-3.728	-13.482	-11.758	-20.994	-15.329	-7.381	-16.868	16.358	-3.868	13.367	-17.677
react	1056	-24.307	-3.771	-1.685	-2.512	-53.911	-57.047	-34.910	-71.971	-24.601	-23.846	-0.141	-27.602	-16.517	-3.855	-13.838	-12.475	-21.789	-16.124	-8.021	-17.235	16.045	-4.147	12.891	-18.405
react	1057	-20.052	-4.216	-2.130	-3.402	-40.533	-43.807	-29.707	-58.316	-39.146	-27.835	-5.489	-20.580	-18.464	-6.733	-33.731	-11.240	-23.372	-17.707	-3.969	-19.613	2.423	-5.443	8.105	-15.435
react	1058	-20.237	-4.900	-2.815	-4.772	-39.377	-42.480	-30.655	-57.501	-41.330	-30.261	-6.986	-21.072	-21.995	-8.205	-37.413	-12.326	-25.045	-19.380	-4.466	-21.105	-1.756	-7.438	5.767	-15.429
react	1059	-20.450	-5.314	-3.228	-5.599	-39.122	-42.191	-30.941	-57.314	-42.344	-30.676	-7.089	-20.518	-22.022	-8.303	-38.529	-12.185	-25.063	-19.398	-4.169	-20.951	-3.747	-7.243	4.920	-15.173
react	1060	-19.663	-1.926	0.159	1.176	-45.767	-49.952	-26.786	-61.727	-31.156	-20.886	-2.381	-20.232	-13.909	-4.516	-22.634	-9.822	-19.843	-14.178	-4.661	-15.465	11.470	-3.028	12.282	-14.394
react	1061	-19.724	-2.688	-0.602	-0.346	-44.408	-48.584	-25.530	-60.388	-34.018	-18.609	-3.618	-20.206	-15.521	-5.216	-26.732	-9.687	-19.736	-14.071	-4.498	-16.839	8.079	-4.102	10.669	-14.531
react	1062	-20.482	-4.746	-2.660	-4.462	-41.613	-45.311	-26.971	-58.546	-39.976	-22.144	-6.195	-20.098	-20.392	-7.432	-35.267	-10.758	-21.901	-16.236	-4.475	-19.331	-1.173	-6.656	6.054	-14.446
react	1063	-21.396	-6.360	-4.274	-7.691	-41.008	-44.648	-25.323	-58.060	-43.690	-19.966	-7.710	-19.713	-23.852	-8.923	-40.496	-10.485	-21.241	-15.576	-4.590	-20.347	-7.888	-8.285	2.640	-13.947
react	1064	-19.200	-1.964	0.122	1.101	-43.040	-46.594	-24.887	-60.264	-32.694	-17.003	-3.219	-21.597	-14.834	-4.642	-25.009	-9.515	-19.390	-13.725	-4.499	-17.830	12.718	-3.704	12.988	-15.921
react	1065	-19.050	-1.113	0.972	2.802	-44.915	-48.782	-25.614	-61.514	-29.743	-18.615	-1.745	-21.141	-12.601	-3.649	-20.585	-9.266	-18.968	-13.303	-4.425	-15.974	16.281	-2.156	14.806	-15.540
react	1066	-19.399	-0.362	1.723	4.304	-47.412	-51.251	-25.960	-64.063	-25.692	-15.960	-0.172	-21.578	-11.155	-2.953	-14.960	-9.159	-18.126	-12.461	-5.052	-14.211	19.792	-1.209	16.249	-15.350
react	1067	-20.992	-1.156	0.929	2.717	-50.064	-53.633	-30.468	-67.257	-24.086	-22.860	-0.563	-25.801	-15.860	-3.607	-13.746	-11.589	-20.994	-15.329	-7.043	-16.835	16.716	-3.593	13.714	-17.582
react	1068	-21.419	-1.282	0.803	2.464	-50.818	-54.252	-31.502	-68.283	-23.312	-23.490	1.512	-22.558	-10.863	-1.834	-10.897	-10.116	-19.524	-13.859	-5.568	-12.991	18.235	-0.043	15.212	-15.813
react	1069	-20.675	-5.488	-3.403	-5.948	-39.975	-43.309	-30.047	-57.639	-42.368	-29.231	-7.262	-21.165	-22.589	-8.477	-38.727	-12.053	-24.524	-18.859	-4.442	-21.498	-4.133	-7.690	4.590	-15.546
react	1070	-21.259	-6.323	-4.237	-7.617	-40.410	-43.918	-29.535	-57.723	-43.953	-27.999	-7.760	-20.628	-23.988	-9.272	-40.809	-11.852	-24.124	-18.459	-4.440	-21.461	-6.970	-8.186	3.173	-15.011
react	1071	-21.136	-6.100	-4.014	-7.171	-40.639	-44.224	-28.321	-57.800	-43.430	-25.857	-7.553	-20.702	-23.340	-9.066	-40.079	-11.414	-23.256	-17.591	-4.433	-21.335	-7.236	-7.971	3.044	-15.092
react	1072	-20.078	-0.941	1.144	3.146	-47.695	-51.238	-28.151	-64.942	-25.971	-22.283	-0.990	-24.460	-14.938	-3.360	-16.058	-10.614	-20.019	-14.354	-6.070	-16.893	16.059	-3.046	13.873	-17.213
react	1073	-20.804	-1.068	1.018	2.893	-49.826	-53.471	-30.457	-66.869	-24.298	-25.213	-0.564	-25.316	-16.064	-3.639	-13.959	-11.515	-21.046	-15.381	-6.844	-16.549	15.954	-3.394	13.433	-17.295
react	1074	-21.237	-1.300	0.785	2.429	-50.518	-54.092	-30.913	-67.701	-23.930	-25.345	-0.486	-26.113	-16.628	-3.784	-13.512	-11.711	-21.117	-15.452	-7.165	-16.946	15.638	-3.637	13.114	-17.771
react	1075	-20.350	-0.714	1.371	3.601	-48.618	-51.986	-28.399	-66.215	-24.244	-19.024	-0.698	-24.689	-16.124	-3.457	-14.038	-10.981	-20.044	-14.379	-6.778	-16.123	16.811	-3.462	13.895	-16.735
react	1076	-20.353	-0.716	1.369	3.596	-48.613	-51.976	-28.035	-66.217	-24.246	-18.357	-0.072	-23.212	-14.274	-2.886	-13.415	-10.233	-19.174	-13.509	-6.152	-14.646	16.016	-2.211	13.810	-15.883
react	1077	-21.730	-1.594	0.492	1.842	-51.110	-54.533	-30.766	-68.594	-23.624	-20.690	0.127	-25.100	-15.648	-3.201	-12.593	-11.152	-20.211	-14.546	-6.953	-15.533	17.285	-2.813	14.044	-16.970
react	1078	-21.587	-1.551	0.535	1.927	-50.477	-53.756	-30.752	-68.252	-23.881	-20.993	-0.484	-25.863	-16.127	-3.774	-13.462	-11.672	-20.841	-15.176	-7.364	-16.496	16.846	-3.835	13.619	-17.322
react	1079	-20.869	-5.583	-3.497	-6.137	-40.443	-43.814	-29.945	-58.034	-42.163	-28.166	-7.060	-21.057	-22.124	-8.578	-38.319	-11.885	-24.191	-18.526	-4.440	-21.190	-3.406	-7.486	4.956	-15.441
react	1080	-20.823	-5.486	-3.401	-5.944	-40.550	-43.947	-29.483	-58.087	-41.916	-26.647	-6.962	-20.744	-21.914	-8.482	-37.975	-11.716	-23.849	-18.184	-4.442	-20.778	-3.640	-7.391	4.837	-15.126
react	1081	-20.340	-4.504	-2.418	-3.979	-41.374	-44.925	-28.887	-58.604	-39.434	-26.888	-5.947	-21.459	-19.830	-7.191	-34.477	-11.329	-23.091	-17.426	-4.427	-20.492	0.100	-6.359	6.715	-15.856
react	1082	-20.185	-4.149	-2.063	-3.269	-41.358	-44.778	-29.059	-58.849	-38.479	-25.874	-5.555	-21.481	-19.069	-6.820	-33.131	-11.313	-23.051	-17.386	-4.435	-20.114	2.413	-5.976	7.867	-15.869
react	1083	-20.619	-5.082	-2.997	-5.136	-40.699	-44.072	-29.897	-58.283	-40.912	-27.669	-6.558	-21.217	-21.070	-7.784	-36.567	-11.784	-23.990	-18.325	-4.438	-20.850	-1.729	-6.982	5.795	-15.603
react	1084	-20.345	-4.509	-2.423	-3.989	-41.221	-44.692	-29.004	-58.609	-39.439	-26.176	-5.953	-21.177	-19.851	-7.498	-34.488	-11.372	-23.172	-17.507	-4.433	-20.210	0.921	-6.372	7.122	-15.568
react	1085	-20.149	-4.413	-2.327	-3.797	-40.185	-43.336	-30.446	-58.213	-39.643	-28.519	-6.180	-21.123	-19.544	-7.320	-34.919	-12.012	-24.425	-18.760	-4.460	-20.356	1.239	-6.625	7.268	-15.487
react	1086	-19.026	-2.289	-0.204	0.450	-41.165	-44.369	-27.054	-59.090	-34.519	-21.781	-3.591	-20.063	-14.706	-4.860	-27.207	-10.000	-20.990	-15.325	-3.871	-17.296	10.304	-3.448	12.095	-15.015
react	1087	-19.817	-3.681	-1.595	-2.333	-40.980	-44.295	-29.056	-58.681	-37.711	-25.626	-5.064	-20.607	-17.808	-6.343	-31.872	-11.077	-22.870	-17.205	-4.144	-19.040	4.071	-5.195	8.841	-15.286
react	1088	-19.818	-3.681	-1.596	-2.334	-41.032	-44.373	-28.958	-58.682	-37.711	-25.465	-5.064	-20.430	-17.808	-6.344	-31.872	-11.044	-22.804	-17.139	-4.144	-18.863	4.106	-5.195	8.859	-15.109
react	1089	-20.054	-3.818	-1.732	-2.607	-41.492	-44.844	-28.396	-59.118	-37.548	-22.940	-4.869	-20.131	-17.434	-6.165	-31.513	-10.717	-22.144	-16.479	-4.149	-18.364	4.534	-5.004	9.071	-14.806
react	1090	-20.930	-5.594	-3.508	-6.159	-40.719	-44.147	-27.621	-58.194	-42.024	-22.068	-6.738	-19.295	-21.268	-8.258	-37.859	-10.835	-22.312	-16.647	-4.218	-19.328	-4.595	-6.943	4.472	-13.900
react	1091	-19.715	-2.578	-0.493	-0.128	-42.894	-46.217	-25.924	-60.579	-33.608	-16.451	-3.162	-19.533	-14.437	-4.650	-25.867	-9.498	-19.615	-13.950	-4.242	-15.967	11.371	-3.390	12.443	-14.115
react	1092	-19.796	-3.059	-0.974	-1.090	-42.481	-45.957	-25.999	-59.860	-35.289	-18.373	-4.173	-21.026	-16.440	-5.440	-28.559	-9.974	-20.356	-14.691	-4.453	-18.260	7.945	-4.612	10.624	-15.397
react	1093	-20.616	-5.080	-2.994	-5.131	-40.902	-44.379	-29.035	-58.280	-40.910	-26.241	-6.553	-21.007	-21.053	-7.779	-36.559	-11.492	-23.412	-17.747	-4.433	-20.640	-2.257	-6.972	5.533	-15.397
react	1094	-20.716	-5.279	-3.194	-5.530	-40.756	-44.210	-29.001	-58.180	-41.409	-25.979	-6.756	-20.889	-21.471	-7.977	-37.261	-11.517	-23.459	-17.794	-4.436	-20.723	-3.469	-7.177	4.926	-15.277
react	1095	-21.197	-6.160	-4.075	-7.292	-40.868	-44.537	-24.641	-57.861	-43.490	-19.394	-7.583	-20.172	-23.440	-9.097	-40.170	-10.198	-20.793	-15.128	-4.463	-20.805	-8.232	-8.032	2.531	-14.533
react	1096	-20.925	-5.689	-3.604	-6.349	-40.791	-44.357	-28.801	-57.990	-42.419	-25.966	-7.158	-20.594	-22.340	-8.499	-38.673	-11.516	-23.455	-17.790	-4.438	-20.827	-5.183	-7.581	4.068	-14.980

state	soln	si_Diaspore	si_Dolomite(disordered)	si_Dolomite(ordered)	si_Epsomite	si_Fe(OH)2	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_Fe2(SO4)3	si_Fe3(OH)8	si_FeAsO4:2H2O	si_FeCr2O4	si_Ferrihydrite	si_Fluorite	si_Gibbsite	si_Goethite	si_Goslarite	si_Gypsum	si_H-Jarosite	si_Halite	si_Hausmannite	si_Hematite	si_Hercynite	si_Huntite
react	1047	4.940	-8.348	-7.798	-6.451	-4.882	6.314	-0.079	-36.574	1.359	-6.643	0.091	3.259	-4.032	3.522	5.959	-8.036	-4.186	-4.023	-8.985	-19.687	14.317	9.415	-19.589
react	1048	3.533	-5.426	-4.876	-6.657	-5.036	6.845	-2.106	-41.100	2.697	-7.399	1.103	4.005	-3.241	2.115	6.705	-8.673	-4.090	-5.797	-8.735	-13.391	15.809	6.447	-14.047
react	1049	4.622	-13.446	-12.896	-7.399	-6.761	3.696	-3.925	-37.964	-6.876	-8.295	-4.842	0.080	-8.860	3.204	2.780	-8.884	-5.132	-10.247	-8.718	-26.996	7.961	6.900	-29.786
react	1050	5.690	-9.558	-9.008	-6.320	-4.488	6.627	1.439	-33.696	1.742	-5.831	1.265	3.253	-5.518	4.272	5.953	-7.357	-3.754	-2.114	-8.206	-21.241	14.306	11.308	-22.309
react	1051	5.488	-10.422	-9.872	-6.133	-5.002	5.967	0.803	-33.355	-0.201	-6.305	-0.226	2.539	-6.489	4.070	5.239	-7.211	-3.569	-3.077	-8.086	-23.498	12.877	10.391	-24.038
react	1052	4.946	-12.973	-12.423	-6.239	-6.419	4.129	-3.385	-33.907	-5.752	-7.963	-4.108	0.472	-9.274	3.528	3.172	-7.358	-3.974	-6.889	-7.992	-28.406	8.744	7.889	-28.839
react	1053	4.057	-13.890	-13.340	-6.195	-7.371	2.922	-5.332	-34.722	-9.108	-8.903	-6.464	-0.730	-8.965	2.639	1.970	-7.464	-3.931	-9.436	-8.278	-32.284	6.339	5.160	-30.673
react	1054	2.508	-1.909	-1.359	-5.538	-6.190	6.501	-5.100	-44.699	0.637	-9.283	0.833	3.551	-2.180	1.090	6.251	-8.393	-2.827	-8.952	-6.734	-9.505	14.903	3.243	-7.159
react	1055	1.958	-0.894	-0.344	-6.289	-6.946	6.394	-9.562	-50.825	0.570	-11.094	-1.019	3.896	-2.680	0.540	6.596	-9.526	-3.428	-12.462	-7.328	0.242	15.591	1.387	-5.277
react	1056	1.479	-0.538	0.012	-6.404	-7.782	5.840	-12.329	-54.761	-0.940	-11.659	-6.288	3.559	-3.476	0.061	6.259	-10.575	-4.157	-15.647	-7.574	5.527	14.918	-0.406	-3.951
react	1057	4.101	-14.195	-13.645	-7.395	-7.219	3.072	-5.180	-38.083	-8.652	-8.747	-6.616	-0.578	-9.000	2.683	2.122	-9.027	-5.129	-11.423	-8.981	-29.935	6.644	5.400	-31.284
react	1058	3.185	-16.177	-15.627	-6.908	-8.060	1.932	-8.020	-36.255	-12.174	-9.607	-8.826	-1.919	-10.193	1.767	0.781	-8.219	-4.642	-12.439	-8.638	-34.949	3.962	2.728	-35.248
react	1059	2.742	-16.972	-16.422	-6.951	-8.804	1.058	-9.565	-37.067	-14.807	-10.411	-10.397	-2.863	-10.509	1.324	-0.163	-8.049	-4.685	-14.555	-8.479	-38.777	2.073	1.096	-36.838
react	1060	3.214	-6.698	-6.148	-5.027	-6.150	5.198	-2.171	-38.342	-1.643	-8.161	-0.967	2.392	-3.736	1.796	5.092	-7.274	-2.352	-6.647	-9.601	-11.989	12.583	4.695	-16.699
react	1061	3.911	-9.311	-8.761	-5.987	-6.527	4.334	-1.261	-37.199	-4.174	-8.189	-2.867	1.315	-4.018	2.493	4.015	-7.685	-2.879	-7.680	-9.709	-15.882	10.429	5.713	-22.358
react	1062	2.674	-13.355	-12.805	-5.333	-8.564	1.530	-6.924	-35.885	-12.885	-10.096	-9.020	-2.023	-6.364	1.256	0.677	-7.684	-2.974	-12.366	-9.110	-26.889	3.755	1.201	-29.697
react	1063	-0.043	-14.881	-14.331	-4.319	-10.464	-0.843	-11.625	-35.046	-19.986	-12.155	-14.149	-4.623	-4.764	-1.461	-1.923	-6.729	-1.536	-16.140	-8.894	-31.068	-1.446	-6.133	-33.172
react	1064	5.063	-8.936	-8.386	-7.343	-4.607	6.580	0.380	-38.326	1.986	-6.324	0.500	3.434	-4.480	3.645	6.134	-9.033	-5.077	-4.898	-9.082	-18.407	14.669	9.936	-20.766
react	1065	4.503	-7.093	-6.543	-7.032	-4.262	7.321	-0.672	-39.513	4.421	-6.374	2.546	4.479	-4.129	3.085	7.179	-8.540	-4.766	-3.948	-9.394	-12.038	16.758	9.161	-17.081
react	1066	3.891	-4.221	-3.671	-6.253	-4.393	7.968	-3.517	-41.726	6.227	-7.042	3.917	5.448	-2.396	2.473	8.148	-7.518	-3.686	-3.809	-8.648	-4.476	18.696	7.806	-11.637
react	1067	2.192	-1.374	-0.824	-6.493	-6.535	6.467	-8.342	-49.930	1.400	-10.149	0.187	4.106	-3.102	0.774	6.806	-9.404	-3.755	-11.515	-8.434	0.407	16.011	2.265	-6.116
react	1068	1.782	-1.307	-0.757	-6.224	-7.113	6.140	-10.073	-51.405	0.267	-11.041	-0.643	3.828	-3.612	0.364	6.528	-9.363	-3.967	-12.961	-8.067	4.419	15.456	0.869	-5.499
react	1069	2.499	-16.736	-16.186	-7.032	-8.961	0.857	-9.521	-37.879	-15.176	-10.541	-10.902	-2.970	-9.678	1.081	-0.270	-8.600	-4.766	-15.273	-8.943	-36.431	1.861	0.455	-36.367
react	1070	1.548	-18.334	-17.784	-6.500	-9.880	-0.289	-11.440	-37.118	-18.433	-11.663	-13.490	-4.139	-9.283	0.130	-1.439	-8.503	-4.235	-16.714	-9.039	-36.025	-0.478	-2.367	-39.561
react	1071	1.405	-17.923	-17.373	-6.583	-10.217	-0.579	-11.377	-38.458	-19.244	-11.887	-13.382	-4.376	-8.416	-0.013	-1.676	-8.666	-4.317	-18.003	-9.114	-37.164	-0.952	-2.990	-38.740
react	1072	2.666	-2.363	-1.813	-7.081	-5.950	6.570	-5.360	-47.776	1.755	-9.164	1.202	3.991	-2.653	1.248	6.691	-9.340	-3.913	-10.271	-9.074	-4.793	15.781	3.799	-8.523
react	1073	1.924	-1.353	-0.803	-6.403	-6.816	6.094	-8.256	-49.830	0.359	-10.631	0.083	3.725	-2.871	0.506	6.425	-9.328	-3.186	-12.082	-9.053	-0.210	15.251	1.448	-6.551
react	1074	1.640	-1.002	-0.452	-6.559	-7.213	5.857	-9.392	-51.887	-0.434	-11.228	-0.779	3.528	-2.622	0.222	6.228	-9.862	-3.341	-13.783	-8.983	-0.434	14.855	0.484	-5.850
react	1075	2.640	-0.901	-0.351	-5.472	-6.221	6.702	-7.350	-46.758	1.944	-9.965	1.386	4.220	-2.154	1.222	6.920	-8.316	-2.911	-9.209	-7.987	-2.024	16.241	3.476	-4.992
react	1076	2.145	-1.055	-0.505	-5.267	-6.931	5.993	-8.082	-47.500	-0.186	-10.688	0.672	3.510	-1.933	0.727	6.210	-7.899	-2.708	-10.887	-7.840	-3.898	14.821	1.776	-5.297
react	1077	2.165	-0.834	-0.284	-6.015	-6.896	6.360	-9.881	-50.287	0.919	-11.139	-1.048	4.045	-2.457	0.747	6.745	-8.872	-3.282	-11.854	-7.949	2.217	15.890	1.852	-5.030
react	1078	2.061	-1.626	-1.076	-5.953	-6.710	6.520	-9.315	-49.337	1.277	-10.375	-0.777	4.131	-3.148	0.643	6.831	-8.896	-3.695	-11.077	-7.752	2.331	16.063	1.829	-6.139
react	1079	2.633	-16.939	-16.389	-6.927	-8.798	1.079	-8.958	-37.643	-14.488	-10.349	-10.929	-2.707	-9.346	1.215	-0.007	-8.531	-4.661	-14.678	-8.900	-37.885	2.386	0.884	-36.773
react	1080	2.605	-16.748	-16.198	-6.613	-9.014	0.890	-8.974	-37.322	-15.035	-10.556	-10.952	-2.873	-9.005	1.187	-0.173	-8.205	-4.347	-14.741	-8.705	-38.022	2.055	0.613	-36.390
react	1081	3.725	-14.167	-13.617	-7.344	-8.152	2.056	-6.112	-39.836	-11.449	-9.676	-8.124	-1.511	-8.248	2.307	1.190	-9.165	-5.078	-14.146	-9.555	-33.976	4.779	3.715	-31.228
react	1082	4.294	-13.419	-12.869	-7.354	-7.391	2.996	-4.555	-39.129	-8.767	-8.922	-6.654	-0.550	-8.204	2.876	2.150	-8.729	-5.088	-12.074	-9.125	-32.392	6.700	5.614	-29.732
react	1083	3.282	-15.349	-14.799	-7.089	-8.461	1.590	-7.620	-38.460	-12.976	-9.987	-9.591	-2.120	-9.145	1.864	0.581	-8.593	-4.823	-14.244	-8.903	-35.503	3.561	2.521	-33.593
react	1084	3.761	-14.779	-14.229	-7.054	-7.738	2.494	-5.699	-38.125	-10.208	-9.263	-7.720	-1.097	-8.327	2.343	1.603	-8.787	-4.788	-12.316	-9.176	-33.992	5.606	4.201	-32.453
react	1085	4.080	-14.407	-13.857	-6.966	-7.366	2.892	-5.726	-36.657	-9.291	-8.497	-7.156	-0.825	-9.572	2.662	1.875	-8.198	-4.700	-10.884	-8.617	-33.950	6.151	5.211	-31.709
react	1086	5.479	-10.659	-10.109	-7.081	-5.128	5.814	0.082	-36.534	-0.577	-6.723	-0.671	2.413	-6.724	4.061	5.113	-8.372	-4.814	-5.405	-8.736	-22.329	12.627	10.248	-24.212
react	1087	4.647	-13.061	-12.511	-7.068	-6.907	3.581	-3.676	-37.686	-7.116	-8.444	-5.234	0.034	-8.321	3.229	2.734	-8.507	-4.802	-10.139	-8.845	-28.376	7.867	6.804	-29.016
react	1088	4.612	-13.062	-12.512	-6.892	-6.890	3.591	-3.658	-37.119	-7.063	-8.426	-5.218	0.051	-8.256	3.194	2.751	-8.286	-4.626	-9.731	-8.871	-28.616	7.903	6.751	-29.019
react	1089	4.539	-12.704	-12.154	-6.587	-6.873	3.674	-3.250	-36.561	-6.814	-8.415	-5.474	0.168	-7.595	3.121	2.868	-8.125	-4.322	-9.165	-8.582	-29.021	8.136	6.621	-28.302
react	1090	1.853	-15.190	-14.640	-5.084	-9.603	0.291	-9.563	-35.497	-16.803	-11.159	-11.756	-3.462	-6.660	0.435	-0.762	-7.405	-2.314	-14.506	-8.272	-32.354	0.876	-1.479	-33.779
react	1091	4.696	-8.337	-7.787	-5.553	-5.209	5.978	-0.081	-34.482	-0.020	-6.914	-1.330	2.732	-4.073	3.278	5.433	-7.536	-2.639	-3.505	-8.164	-19.759	13.265	8.601	-20.217
react	1092	4.852	-10.627	-10.077	-6.865	-6.016	4.844	-0.804	-37.709	-3.242	-7.606	-3.100	1.525	-5.493	3.434	4.225	-8.263	-4.600	-7.669	-8.880	-26.798	10.850	8.105	-24.148
react	1093	2.988	-15.343	-14.793	-6.885	-8.727	1.293	-7.887	-38.392	-13.775	-10.253	-9.851	-2.386	-8.569	1.570	0.314	-8.533	-4.619	-14.642	-9.005	-35.493	3.028	1.666	-33.580
react	1094	2.709	-15.740	-15.190	-6.765	-9.132	0.825	-8.692	-38.434	-15.189	-10.663	-10.655	-2.891	-8.616	1.291	-0.191	-8.743	-4.500	-15.512	-8.858	-36.300	2.019	0.704	-34.375
react	1095	-0.262	-16.987	-16.437	-5.722	-10.699	-1.087	-11.860	-37.652	-20.692	-12.374	-13.985	-4.858	-5.256	-1.680	-2.158	-7.526	-3.061	-18.270	-8.981	-35.659	-1.917	-6.807	-37.264
react	1096	2.105	-16.787	-16.237	-6.469	-9.588	0.196	-9.948	-37.647	-16.957	-11.150	-11.931	-3.547	-8.614	0.687	-0.847	-8.408	-4.204	-16.080	-8.971	-37.183	0.707	-0.962	-36.468

state	soln	si_Hydrocerussite	si_Hydromagnesite	si_K-Alum	si_K-Jarosite	si_K2Cr2O7	si_K2CrO4	si_Langite	si_Larnakite	si_Laurionite	si_Lepidocrocite	si_Li2CrO4	si_Lime	si_Litharge	si_Maghemite	si_Magnesioferrite	si_Magnesite	si_Magnetite	si_Malachite	si_Manganite	si_Massicot	si_Matlockite	si_Melanothallite	si_Melanterite
react	1047	-6.708	-31.415	-16.293	0.872	-49.709	-30.767	-12.727	-5.629	-5.373	5.079	-40.034	-23.759	-6.858	6.513	5.198	-4.875	18.178	-4.939	-7.959	-7.058	-7.513	-21.806	-6.845
react	1048	-4.619	-24.373	-20.812	-0.002	-41.344	-25.685	-9.476	-5.589	-5.067	5.825	-35.553	-21.657	-5.835	8.005	8.490	-3.565	19.516	-2.800	-5.560	-6.035	-7.863	-21.925	-9.005
react	1049	-14.468	-44.215	-14.603	-6.654	-63.169	-38.799	-18.762	-9.219	-6.126	1.900	-48.066	-26.361	-9.481	0.157	-3.762	-7.424	9.943	-8.730	-10.829	-9.681	-9.379	-19.988	-7.068
react	1050	-7.587	-35.266	-13.548	2.851	-51.192	-31.439	-10.901	-5.355	-4.656	5.073	-40.456	-24.291	-7.202	6.502	4.355	-5.630	18.561	-4.430	-8.610	-7.402	-7.273	-19.466	-5.488
react	1051	-9.274	-37.398	-12.947	1.511	-54.120	-33.280	-12.494	-5.852	-5.018	4.359	-42.194	-24.695	-7.746	5.073	2.523	-6.062	16.618	-5.550	-9.429	-7.946	-7.918	-19.649	-5.412
react	1052	-13.447	-43.198	-11.751	-2.951	-61.786	-37.763	-17.227	-7.671	-5.760	2.292	-47.029	-26.295	-9.253	0.940	-2.910	-7.187	11.068	-8.340	-11.282	-9.453	-9.253	-19.602	-5.635
react	1053	-15.736	-45.518	-12.128	-6.046	-65.785	-40.310	-19.299	-8.706	-6.561	1.090	-48.974	-26.782	-10.034	-1.465	-5.801	-7.645	7.711	-9.612	-12.658	-10.234	-9.656	-20.289	-6.058
react	1054	-4.204	-15.613	-22.953	-2.476	-34.900	-21.782	-8.196	-5.770	-4.342	5.371	-31.650	-19.497	-5.476	7.099	9.600	-1.879	17.456	-2.042	-4.032	-5.676	-7.687	-20.648	-11.057
react	1055	-3.438	-12.361	-26.937	-4.878	-27.179	-16.813	-7.708	-6.081	-4.867	5.716	-26.681	-17.827	-4.496	7.787	11.809	-1.446	17.389	-1.749	-0.416	-4.696	-9.297	-22.968	-14.083
react	1056	-2.767	-9.450	-29.090	-7.562	-27.609	-16.527	-7.354	-6.071	-5.042	5.379	-25.793	-17.468	-3.947	7.114	12.108	-0.961	15.880	-1.516	1.513	-4.147	-10.050	-24.055	-16.008
react	1057	-16.507	-46.109	-14.524	-8.029	-66.081	-40.454	-20.428	-10.207	-6.708	1.242	-50.323	-26.757	-10.174	-1.160	-5.474	-7.799	8.168	-9.742	-11.875	-10.374	-9.832	-20.280	-7.127
react	1058	-18.612	-51.089	-12.636	-9.248	-70.856	-43.045	-24.915	-10.141	-6.756	-0.099	-53.515	-27.774	-10.893	-3.842	-9.172	-8.790	4.646	-12.711	-13.713	-11.093	-9.968	-20.437	-6.465
react	1059	-19.282	-53.081	-12.387	-11.388	-72.932	-44.107	-24.966	-10.235	-6.748	-1.043	-54.328	-28.176	-11.119	-5.731	-11.463	-9.187	2.012	-12.911	-15.056	-11.319	-9.918	-20.071	-6.850
react	1060	-8.455	-27.498	-17.654	-1.363	-46.324	-28.686	-10.065	-5.718	-6.241	4.212	-37.952	-21.914	-6.897	4.779	4.899	-4.255	15.177	-4.417	-5.260	-7.097	-9.155	-22.795	-8.124
react	1061	-11.133	-35.650	-15.451	-3.088	-53.432	-32.933	-13.912	-7.120	-6.782	3.135	-42.801	-23.541	-8.147	2.625	0.686	-5.778	12.646	-6.354	-6.791	-8.347	-9.024	-22.613	-7.402
react	1062	-18.166	-44.249	-12.666	-9.077	-67.952	-41.495	-21.558	-9.627	-7.590	-0.203	-50.761	-26.298	-10.732	-4.049	-7.997	-7.425	3.934	-11.147	-10.893	-10.932	-9.626	-21.636	-6.776
react	1063	-22.810	-49.146	-12.076	-13.572	-76.821	-46.650	-25.603	-10.742	-8.395	-2.803	-55.914	-26.873	-12.296	-9.250	-14.197	-8.400	-3.167	-14.152	-12.519	-12.496	-9.344	-21.632	-6.663
react	1064	-8.607	-32.784	-17.672	-0.102	-50.374	-31.198	-14.105	-7.458	-5.635	5.254	-40.465	-23.949	-7.422	6.865	5.358	-5.169	18.805	-5.380	-7.566	-7.622	-7.903	-21.369	-7.271
react	1065	-5.384	-27.696	-19.715	1.550	-43.071	-26.846	-9.302	-5.760	-5.252	6.299	-36.715	-22.546	-6.027	8.954	8.851	-4.248	21.240	-2.914	-5.209	-6.227	-8.047	-21.921	-8.018
react	1066	-1.646	-20.389	-21.525	3.259	-31.828	-19.655	-4.392	-3.482	-4.495	7.268	-29.273	-20.082	-4.196	10.892	12.952	-2.962	23.046	-0.645	-2.322	-4.396	-7.655	-22.495	-9.533
react	1067	-3.466	-13.440	-26.579	-4.124	-27.968	-17.400	-7.799	-6.186	-5.456	5.926	-26.667	-18.312	-4.628	8.207	11.866	-1.625	18.219	-1.690	-0.428	-4.828	-9.855	-23.945	-13.515
react	1068	-3.449	-11.766	-27.304	-5.272	-25.826	-16.032	0.195	-6.079	-5.413	5.648	-24.344	-18.217	-4.421	7.652	11.887	-1.350	17.086	2.158	1.010	-4.621	-10.114	-22.198	-14.399
react	1069	-21.247	-52.491	-13.451	-12.528	-73.826	-44.976	-25.860	-11.743	-7.717	-1.150	-54.845	-28.057	-11.774	-5.943	-11.557	-9.069	1.644	-13.259	-14.257	-11.974	-10.531	-20.873	-7.206
react	1070	-23.354	-56.186	-12.585	-14.219	-77.494	-47.060	-26.818	-11.719	-8.146	-2.319	-56.929	-28.559	-12.278	-8.282	-14.397	-9.868	-1.614	-14.552	-14.205	-12.478	-10.511	-21.221	-7.092
react	1071	-22.732	-55.159	-13.205	-15.406	-76.246	-46.334	-26.277	-11.591	-8.114	-2.556	-56.203	-28.352	-12.070	-8.756	-14.664	-9.663	-2.425	-14.139	-14.551	-12.270	-10.149	-21.366	-7.718
react	1072	-3.955	-17.660	-25.214	-3.578	-33.135	-20.682	-8.710	-6.615	-5.341	5.811	-30.551	-19.264	-5.240	7.977	10.254	-2.334	18.574	-1.870	-2.394	-5.440	-9.039	-22.918	-12.135
react	1073	-3.579	-14.552	-26.373	-4.791	-28.592	-17.812	-7.514	-5.932	-5.448	5.545	-27.681	-18.030	-4.645	7.447	10.909	-1.853	17.178	-1.723	-0.667	-4.845	-9.872	-23.896	-13.508
react	1074	-3.546	-13.451	-27.565	-6.292	-27.455	-17.044	-7.754	-6.166	-5.418	5.348	-26.912	-17.631	-4.485	7.051	10.912	-1.678	16.385	-1.789	-0.675	-4.685	-9.917	-24.077	-14.460
react	1075	-3.539	-12.098	-24.377	-2.025	-28.698	-17.973	-7.356	-5.633	-5.268	6.040	-27.239	-18.448	-4.842	8.437	12.137	-1.299	18.764	-1.675	-1.305	-5.042	-9.125	-23.276	-12.220
react	1076	-3.561	-12.423	-24.423	-3.706	-28.709	-17.981	-4.628	-5.349	-5.236	5.330	-27.849	-18.471	-4.813	7.017	10.695	-1.375	16.633	-0.478	-1.929	-5.013	-8.970	-22.643	-12.703
react	1077	-2.541	-11.792	-26.469	-4.169	-26.455	-16.350	-5.118	-5.269	-5.113	5.865	-25.264	-17.760	-4.130	8.086	12.303	-1.352	17.738	-0.595	0.276	-4.330	-9.465	-23.564	-13.954
react	1078	-2.568	-12.624	-26.156	-3.492	-27.171	-16.808	-7.302	-5.079	-4.903	5.951	-25.722	-18.432	-4.165	8.259	12.278	-1.511	18.097	-1.778	0.280	-4.365	-9.264	-23.685	-13.509
react	1079	-21.249	-52.696	-13.410	-11.833	-73.214	-44.570	-25.147	-11.437	-7.652	-0.887	-54.439	-27.855	-11.572	-5.418	-10.830	-9.171	2.332	-13.158	-14.708	-11.772	-10.400	-20.944	-7.140
react	1080	-20.065	-52.215	-12.953	-11.846	-72.622	-44.224	-24.540	-10.429	-7.333	-1.053	-52.695	-27.759	-11.177	-5.749	-11.064	-9.075	1.784	-12.964	-14.737	-11.377	-9.959	-21.000	-7.139
react	1081	-17.360	-46.039	-14.822	-10.748	-66.650	-40.735	-22.223	-10.739	-7.268	0.310	-50.604	-26.743	-10.459	-3.025	-7.325	-7.785	5.371	-10.657	-13.222	-10.659	-10.024	-21.291	-8.022
react	1082	-15.321	-44.148	-14.864	-8.478	-64.343	-39.383	-21.062	-9.757	-6.644	1.270	-49.252	-26.348	-9.765	-1.104	-5.009	-7.411	8.052	-9.895	-12.627	-9.965	-9.576	-21.039	-7.667
react	1083	-19.156	-49.014	-13.837	-11.148	-70.213	-42.819	-23.804	-11.096	-7.402	-0.300	-52.687	-27.353	-11.070	-4.243	-9.153	-8.376	3.844	-11.862	-13.831	-11.270	-10.302	-20.948	-7.467
react	1084	-17.981	-47.269	-14.198	-8.920	-66.662	-40.742	-21.953	-10.457	-7.196	0.723	-50.611	-26.748	-10.465	-2.198	-6.503	-8.091	6.612	-10.971	-13.227	-10.665	-9.989	-21.139	-7.314
react	1085	-16.411	-46.744	-13.067	-7.291	-66.678	-40.554	-22.552	-9.643	-6.522	0.995	-50.672	-26.968	-10.212	-1.653	-6.178	-7.905	7.528	-11.019	-13.247	-10.412	-9.828	-20.526	-6.634
react	1086	-9.603	-37.244	-14.902	-0.811	-54.430	-33.429	-14.315	-7.050	-5.219	4.233	-42.946	-24.965	-7.857	4.823	2.301	-6.031	16.243	-5.970	-9.040	-8.057	-8.102	-20.041	-6.514
react	1087	-14.251	-43.239	-14.228	-6.444	-62.610	-38.418	-19.006	-8.932	-6.273	1.854	-47.685	-26.155	-9.399	0.063	-3.649	-7.232	9.703	-8.928	-11.255	-9.599	-9.359	-20.538	-7.091
react	1088	-14.255	-43.242	-13.909	-6.036	-62.612	-38.419	-18.829	-8.758	-6.300	1.871	-47.685	-26.156	-9.401	0.099	-3.614	-7.232	9.756	-8.928	-11.335	-9.601	-9.354	-20.589	-6.896
react	1089	-14.241	-42.329	-13.666	-5.371	-62.085	-38.056	-17.940	-8.617	-6.396	1.988	-47.323	-25.960	-9.384	0.332	-3.185	-7.053	10.006	-8.555	-11.437	-9.584	-9.216	-20.617	-6.771
react	1090	-21.315	-49.582	-11.715	-11.625	-72.864	-44.358	-22.642	-10.260	-7.780	-1.642	-53.624	-26.727	-11.593	-6.928	-11.716	-8.548	0.016	-12.517	-12.848	-11.793	-9.750	-20.838	-6.727
react	1091	-9.552	-32.842	-14.651	1.180	-52.425	-32.335	-12.128	-6.253	-5.576	4.553	-42.203	-23.261	-7.694	5.461	3.995	-5.194	16.800	-5.331	-8.050	-7.894	-7.986	-20.652	-6.123
react	1092	-11.184	-37.166	-15.425	-3.372	-56.565	-34.794	-16.443	-7.906	-6.020	3.345	-44.662	-24.951	-8.385	3.046	0.539	-6.015	13.577	-7.133	-10.529	-8.585	-8.295	-21.169	-7.201
react	1093	-19.146	-48.998	-13.730	-11.546	-70.205	-42.814	-23.583	-10.889	-7.502	-0.566	-52.683	-27.350	-11.066	-4.776	-9.682	-8.373	3.045	-11.852	-13.828	-11.266	-10.115	-21.150	-7.533
react	1094	-19.748	-49.994	-13.465	-12.516	-71.405	-43.514	-24.071	-10.973	-7.583	-1.071	-52.429	-27.553	-11.270	-5.785	-10.894	-8.571	1.630	-12.253	-14.130	-11.470	-10.118	-21.106	-7.615
react	1095	-22.870	-53.807	-13.696	-15.679	-76.378	-46.406	-25.809	-11.093	-8.244	-3.038	-54.718	-27.687	-12.116	-9.721	-15.359	-9.392	-3.873	-14.200	-14.050	-12.316	-9.032	-21.565	-7.610
react	1096	-21.206	-52.491	-12.870	-13.285	-73.826	-44.925	-24.979	-11.087	-7.901	-1.727	-53.487	-27.957	-11.676	-7.097	-12.610	-9.094	-0.138	-13.176	-14.491	-11.876	-10.233	-21.333	-7.371

state	soln	si_Mg(OH)2(active)	si_Mg(VO3)2	si_Mg2V2O7	si_MgCr2O4	si_MgCrO4	si_MgF2	si_Minium	si_Mirabilite	si_Mn(VO3)2	si_Mn2(SO4)3	si_Mn3(AsO4)2:8H2O	si_MnCl2:4H2O	si_MnSO4	si_Montepponite	si_Morenosite	si_Na-Jarosite	si_Na2Cr2O7	si_Na2CrO4	si_Na3VO4	si_Na4V2O7	si_Nantokite	si_Natron	si_NaVO3
react	1047	-9.636	-14.602	-20.524	-8.432	-31.893	-6.183	-34.413	-10.214	-10.800	-63.435	-18.142	-17.307	-13.738	-10.617	-9.341	-1.719	-55.039	-32.193	-33.310	-37.065	-6.342	-13.775	-6.895
react	1048	-7.835	-14.675	-18.796	-5.466	-26.810	-5.694	-29.545	-10.286	-11.174	-64.655	-16.649	-17.242	-14.245	-8.823	-10.032	-2.526	-46.539	-26.977	-31.346	-35.070	-6.645	-12.331	-6.864
react	1049	-12.239	-19.173	-27.698	-14.091	-39.924	-11.013	-44.881	-11.764	-14.337	-64.207	-19.799	-15.137	-13.652	-13.236	-10.162	-9.546	-69.100	-40.827	-39.102	-45.444	-5.095	-16.927	-9.481
react	1050	-10.467	-14.310	-21.064	-8.485	-33.535	-7.970	-36.247	-9.817	-9.927	-61.848	-17.261	-15.434	-13.026	-11.470	-8.306	-0.092	-57.225	-33.569	-33.596	-37.072	-4.664	-14.263	-6.616
react	1051	-10.871	-14.836	-21.993	-9.865	-35.027	-8.941	-38.277	-9.350	-10.668	-61.717	-18.637	-15.691	-13.055	-11.873	-8.421	-1.118	-59.525	-34.781	-33.843	-37.441	-4.828	-14.415	-6.738
react	1052	-12.170	-18.906	-27.362	-13.629	-39.508	-11.424	-44.097	-9.497	-14.642	-61.839	-21.428	-15.365	-13.064	-13.179	-8.864	-5.600	-67.231	-39.305	-37.240	-42.895	-4.896	-15.582	-8.794
react	1053	-12.657	-20.387	-29.330	-15.520	-41.447	-11.115	-46.943	-9.503	-16.763	-63.002	-24.282	-16.527	-13.660	-13.652	-9.084	-8.415	-70.671	-41.292	-38.540	-44.960	-5.315	-16.089	-9.559
react	1054	-5.819	-14.499	-16.604	-2.567	-22.252	-4.777	-27.069	-7.914	-12.186	-64.290	-17.026	-15.681	-14.314	-7.609	-9.658	-4.046	-38.187	-21.165	-27.361	-30.371	-6.434	-9.392	-6.149
react	1055	-4.299	-16.685	-17.270	-2.143	-17.980	-5.427	-21.929	-8.364	-13.376	-63.874	-13.790	-16.175	-14.070	-5.599	-10.164	-6.646	-30.861	-16.592	-26.482	-30.434	-8.349	-8.657	-7.092
react	1056	-3.326	-17.644	-17.256	-5.603	-17.723	-5.610	-19.282	-8.495	-13.879	-63.280	-9.960	-16.194	-13.729	-4.950	-10.416	-9.352	-31.337	-16.352	-26.013	-30.453	-9.212	-8.188	-7.579
react	1057	-12.634	-20.365	-29.285	-15.801	-41.577	-11.153	-47.363	-12.115	-15.980	-65.102	-21.925	-15.759	-14.099	-13.627	-10.760	-11.098	-72.365	-42.834	-40.626	-47.741	-5.299	-17.656	-10.255
react	1058	-13.651	-23.381	-33.317	-18.187	-44.778	-12.345	-50.519	-11.267	-19.317	-64.268	-24.977	-15.755	-13.934	-14.652	-10.273	-12.441	-77.390	-45.675	-42.608	-51.051	-5.626	-18.286	-11.582
react	1059	-14.053	-24.583	-34.922	-19.416	-46.193	-12.662	-51.597	-11.060	-21.260	-65.878	-28.125	-16.430	-14.718	-15.056	-10.317	-14.632	-79.568	-46.839	-43.236	-52.154	-5.294	-18.432	-12.058
react	1060	-8.200	-13.991	-18.477	-6.788	-29.153	-6.297	-33.730	-9.800	-9.325	-58.070	-12.546	-16.666	-11.450	-9.884	-7.186	-4.130	-52.005	-30.464	-33.084	-37.039	-6.903	-14.164	-7.094
react	1061	-10.260	-14.764	-21.310	-10.370	-34.074	-7.012	-38.882	-10.336	-8.869	-57.834	-12.941	-16.077	-11.182	-11.241	-8.031	-5.981	-59.363	-34.960	-34.894	-39.023	-6.730	-15.263	-7.268
react	1062	-12.268	-20.398	-28.952	-16.495	-42.040	-8.609	-49.236	-10.028	-15.297	-58.052	-18.488	-15.326	-11.322	-13.856	-8.398	-11.844	-73.633	-43.273	-40.239	-47.358	-6.230	-17.257	-10.259
react	1063	-13.267	-24.197	-33.750	-20.722	-46.753	-7.433	-55.329	-9.102	-19.024	-55.264	-20.183	-14.734	-10.234	-15.378	-7.422	-16.162	-82.149	-48.074	-43.269	-52.332	-6.285	-18.320	-12.202
react	1064	-9.827	-14.610	-20.722	-8.490	-32.317	-6.633	-36.306	-11.715	-10.123	-64.751	-16.376	-16.208	-13.946	-10.811	-10.232	-2.994	-56.305	-33.226	-34.417	-38.481	-6.109	-14.678	-7.203
react	1065	-8.424	-14.604	-19.314	-5.386	-27.964	-6.282	-30.720	-11.405	-9.864	-63.315	-13.596	-16.577	-13.381	-9.404	-9.924	-1.343	-49.002	-28.874	-33.013	-37.074	-6.348	-13.757	-7.200
react	1066	-6.260	-15.154	-17.700	-1.720	-21.749	-4.850	-23.027	-9.149	-10.789	-61.692	-11.508	-16.937	-12.978	-7.258	-8.236	0.616	-37.260	-21.183	-28.910	-32.507	-6.948	-10.995	-6.737
react	1067	-4.661	-16.238	-17.185	-1.709	-18.544	-5.727	-22.724	-9.503	-12.378	-63.422	-11.755	-16.902	-13.723	-5.849	-9.744	-6.347	-32.562	-18.091	-28.022	-32.218	-8.669	-9.770	-7.335
react	1068	-4.085	-16.815	-17.186	-1.385	-17.194	-5.756	-21.503	-8.747	-12.394	-61.466	-9.570	-16.092	-12.892	-5.411	-9.424	-7.262	-29.952	-16.255	-27.005	-31.247	-7.058	-9.010	-7.381
react	1069	-13.934	-24.264	-34.484	-19.646	-46.099	-11.831	-53.461	-11.559	-20.311	-64.879	-25.925	-16.310	-14.169	-14.925	-10.397	-15.500	-79.916	-47.163	-43.584	-52.552	-5.832	-18.732	-12.107
react	1070	-14.435	-25.766	-36.487	-21.816	-48.185	-11.434	-55.474	-10.866	-21.009	-61.675	-24.925	-15.858	-12.834	-15.422	-9.866	-17.112	-83.426	-49.088	-44.595	-54.234	-6.005	-19.370	-12.778
react	1071	-14.229	-25.159	-35.674	-21.164	-47.455	-10.567	-54.649	-10.952	-21.056	-63.234	-26.238	-16.657	-13.569	-15.214	-9.948	-18.299	-82.177	-48.362	-44.091	-53.428	-6.074	-19.168	-12.476
react	1072	-6.044	-15.224	-17.554	-2.662	-21.812	-5.708	-25.959	-11.443	-11.248	-64.971	-13.354	-16.715	-14.195	-7.074	-10.533	-6.470	-39.067	-22.710	-30.926	-35.291	-7.668	-11.832	-7.505
react	1073	-4.858	-16.068	-17.213	-1.730	-18.953	-5.975	-22.974	-10.504	-12.151	-63.038	-12.373	-16.991	-13.575	-5.981	-10.031	-7.558	-34.274	-19.591	-29.771	-34.428	-8.545	-11.090	-7.796
react	1074	-4.460	-16.408	-17.153	-1.796	-18.186	-5.726	-22.094	-10.657	-13.097	-64.717	-13.798	-17.459	-14.338	-5.646	-10.317	-9.059	-33.137	-18.822	-29.540	-34.365	-8.796	-10.913	-7.965
react	1075	-4.620	-15.520	-16.426	-0.784	-18.661	-4.601	-23.765	-8.432	-12.378	-62.234	-13.646	-16.775	-13.420	-6.233	-9.266	-3.997	-32.788	-18.159	-27.549	-31.362	-8.201	-9.397	-6.952
react	1076	-4.642	-15.563	-16.491	-0.810	-18.685	-4.378	-23.679	-7.920	-13.025	-62.804	-15.546	-17.392	-13.818	-6.239	-9.338	-5.531	-32.507	-17.875	-27.132	-30.813	-7.572	-9.165	-6.820
react	1077	-4.104	-16.860	-17.250	-2.027	-17.524	-5.077	-20.630	-8.303	-13.154	-62.252	-12.403	-16.807	-13.399	-5.428	-9.684	-6.047	-30.359	-16.350	-26.695	-30.841	-8.433	-8.777	-7.286
react	1078	-4.301	-16.677	-17.264	-2.139	-17.979	-5.293	-20.935	-8.139	-12.669	-61.464	-10.734	-16.212	-13.035	-5.557	-9.203	-5.317	-30.969	-16.703	-26.648	-30.652	-8.699	-8.833	-7.144
react	1079	-13.732	-23.662	-33.681	-19.634	-45.692	-11.498	-52.656	-11.296	-20.462	-66.072	-27.721	-17.135	-14.817	-14.722	-10.292	-14.725	-79.146	-46.598	-42.845	-51.433	-5.866	-18.676	-11.727
react	1080	-13.635	-23.365	-33.286	-19.344	-45.348	-11.157	-51.370	-10.535	-20.341	-65.477	-28.041	-17.367	-14.678	-14.625	-9.978	-14.516	-78.110	-45.809	-41.930	-50.147	-5.896	-18.134	-11.356
react	1081	-12.621	-20.351	-29.258	-16.363	-41.851	-10.400	-48.216	-12.673	-17.327	-67.684	-25.958	-17.659	-15.409	-13.605	-10.709	-14.118	-73.536	-43.718	-41.518	-48.931	-6.033	-18.250	-10.552
react	1082	-12.226	-19.160	-27.671	-15.259	-40.501	-10.357	-45.736	-12.078	-16.135	-67.709	-25.187	-17.403	-15.419	-13.214	-10.719	-11.546	-70.627	-41.763	-39.621	-46.135	-5.911	-17.272	-9.654
react	1083	-13.230	-22.160	-31.676	-18.131	-43.939	-11.297	-50.649	-11.459	-18.835	-66.308	-26.291	-17.013	-14.853	-14.220	-10.454	-14.040	-76.144	-44.847	-41.594	-49.431	-5.868	-17.882	-10.977
react	1084	-12.626	-20.356	-29.268	-16.378	-41.861	-10.480	-48.235	-11.779	-17.332	-66.811	-25.976	-17.506	-15.120	-13.612	-10.419	-11.988	-72.946	-43.123	-40.619	-47.732	-5.960	-17.952	-10.252
react	1085	-12.845	-20.975	-30.106	-16.406	-42.284	-11.725	-47.675	-11.194	-17.651	-65.927	-24.747	-16.585	-14.731	-13.843	-10.331	-10.417	-73.078	-43.050	-40.403	-47.578	-5.667	-17.270	-10.314
react	1086	-10.842	-15.403	-22.531	-10.156	-35.158	-8.876	-38.610	-11.444	-10.875	-63.865	-18.054	-15.482	-13.642	-11.838	-9.446	-4.004	-60.963	-36.059	-35.818	-40.274	-5.130	-15.531	-7.595
react	1087	-12.032	-18.571	-26.889	-14.130	-39.540	-10.473	-44.437	-11.437	-14.468	-64.689	-21.583	-16.121	-14.055	-13.024	-10.133	-9.336	-68.542	-40.446	-38.599	-44.642	-5.515	-16.737	-9.182
react	1088	-12.033	-18.572	-26.891	-14.132	-39.541	-10.408	-44.441	-11.260	-14.548	-64.317	-21.823	-16.252	-13.958	-13.024	-9.956	-8.929	-68.543	-40.447	-38.600	-44.642	-5.541	-16.737	-9.182
react	1089	-11.837	-17.984	-26.107	-14.208	-39.181	-9.747	-44.193	-10.351	-14.358	-64.195	-22.639	-16.677	-14.051	-12.828	-9.953	-7.962	-67.415	-39.482	-37.202	-42.648	-5.558	-15.953	-8.586
react	1090	-13.108	-22.838	-32.233	-19.032	-44.929	-9.317	-52.619	-8.606	-18.452	-58.694	-22.400	-15.540	-11.788	-14.705	-8.209	-13.818	-77.396	-44.988	-40.538	-48.290	-5.703	-17.207	-10.892
react	1091	-9.786	-14.429	-20.501	-9.678	-33.191	-6.874	-37.321	-8.789	-10.366	-60.471	-17.303	-15.931	-12.580	-11.082	-8.921	-1.013	-56.958	-32.965	-32.583	-35.988	-5.621	-13.567	-6.544
react	1092	-10.828	-15.385	-22.499	-11.682	-35.914	-7.645	-40.194	-10.986	-12.361	-66.242	-22.511	-17.517	-14.931	-11.814	-10.231	-6.140	-62.246	-36.572	-35.430	-39.756	-5.985	-15.272	-7.465
react	1093	-13.227	-22.157	-31.670	-18.122	-43.933	-10.721	-50.639	-11.256	-18.832	-65.700	-26.278	-17.216	-14.649	-14.214	-10.250	-14.438	-76.136	-44.842	-41.591	-49.427	-5.966	-17.880	-10.976
react	1094	-13.429	-22.759	-32.475	-18.723	-44.635	-10.768	-51.449	-10.885	-19.434	-65.338	-26.696	-17.173	-14.530	-14.417	-10.130	-15.283	-77.087	-45.293	-41.717	-49.729	-5.945	-17.828	-11.152
react	1095	-13.959	-24.889	-35.133	-21.015	-47.245	-7.803	-54.787	-9.929	-20.554	-60.460	-24.741	-16.323	-12.476	-15.245	-8.787	-18.349	-81.865	-47.990	-43.442	-52.563	-6.188	-18.736	-12.260
react	1096	-13.833	-23.963	-34.082	-19.947	-46.049	-10.765	-53.068	-10.586	-20.395	-63.961	-26.842	-17.159	-13.991	-14.819	-9.291	-16.052	-79.507	-46.703	-42.719	-51.331	-6.060	-18.348	-11.752

state	soln	si_Nesquehonite	si_Ni(OH)2	si_Ni3(AsO4)2:8H2O	si_Ni4(OH)6SO4	si_NiCO3	si_Nsutite	si_O2(g)	si_Otavite	si_Pb(BO2)2	si_Pb(OH)2	si_Pb10(OH)6O(CO3)6	si_Pb2(OH)3Cl	si_Pb2O(OH)2	si_Pb2O3	si_Pb2OCO3	si_Pb2V2O7	si_Pb3(AsO4)2	si_Pb3(VO4)2	si_Pb3O2CO3	si_Pb3O2SO4	si_Pb4(OH)6SO4	si_Pb4O3SO4	si_PbCrO4
react	1047	-7.665	-6.544	-22.334	-24.736	-8.373	-14.673	-39.889	-5.007	-9.617	-2.314	-61.838	-7.707	-14.516	-27.768	-9.263	1.092	-13.676	-1.112	-15.005	-10.914	-15.491	-16.268	-17.235
react	1048	-6.355	-5.229	-21.394	-21.482	-7.548	-11.374	-36.289	-3.703	-9.030	-1.291	-54.549	-6.378	-12.470	-23.922	-7.708	1.265	-13.612	0.084	-12.426	-9.851	-13.406	-14.183	-12.929
react	1049	-10.214	-9.020	-26.712	-32.986	-10.796	-18.843	-45.089	-7.572	-12.511	-4.937	-87.741	-11.082	-19.761	-35.613	-14.455	-6.121	-18.493	-10.948	-22.819	-17.126	-24.326	-25.103	-25.285
react	1050	-8.420	-6.472	-20.485	-23.486	-8.225	-15.724	-41.489	-5.783	-9.790	-2.658	-64.822	-7.334	-15.205	-29.257	-9.875	1.526	-13.075	-1.022	-15.961	-10.984	-15.906	-16.683	-18.390
react	1051	-8.852	-7.177	-22.118	-25.714	-8.958	-16.743	-42.289	-6.215	-10.435	-3.202	-70.426	-8.239	-16.291	-30.743	-10.990	0.318	-14.224	-2.774	-17.620	-12.024	-17.490	-18.267	-20.021
react	1052	-9.977	-8.815	-26.213	-31.071	-10.421	-19.246	-44.889	-7.346	-11.997	-4.709	-84.450	-10.489	-19.305	-35.057	-13.830	-5.467	-17.927	-10.065	-21.966	-15.351	-22.323	-23.100	-24.711
react	1053	-10.435	-9.564	-27.938	-33.539	-11.143	-20.872	-45.889	-7.791	-12.723	-5.491	-92.100	-12.071	-20.869	-37.121	-15.366	-8.026	-19.749	-13.406	-24.284	-17.167	-24.921	-25.698	-26.945
react	1054	-4.669	-3.957	-20.441	-17.293	-6.607	-9.146	-33.490	-2.819	-8.813	-0.932	-52.944	-5.295	-11.753	-21.805	-7.320	0.141	-15.398	-0.681	-11.680	-9.673	-12.869	-13.646	-10.029
react	1055	-4.236	-2.192	-19.454	-12.502	-5.929	-4.430	-29.090	-1.897	-8.405	0.048	-49.668	-4.840	-9.793	-17.645	-6.448	-1.605	-16.768	-1.447	-9.828	-9.004	-11.220	-11.997	-6.297
react	1056	-3.751	-1.356	-17.404	-10.248	-5.581	-2.002	-27.089	-1.735	-8.718	0.597	-47.106	-4.466	-8.695	-15.547	-5.838	-2.438	-15.578	-1.732	-8.669	-8.445	-10.112	-10.890	-6.464
react	1057	-10.589	-10.018	-29.292	-36.576	-11.772	-20.089	-45.889	-7.942	-13.510	-5.630	-94.554	-12.358	-21.149	-37.401	-15.821	-8.305	-20.161	-13.826	-24.879	-18.808	-26.702	-27.479	-27.236
react	1058	-11.580	-11.034	-31.380	-39.139	-12.763	-22.427	-47.889	-8.941	-13.923	-6.349	-101.586	-13.124	-22.586	-39.838	-17.233	-11.742	-21.355	-17.981	-27.009	-19.461	-28.073	-28.850	-30.140
react	1059	-11.977	-11.437	-32.306	-40.389	-13.161	-23.970	-48.689	-9.341	-13.924	-6.575	-103.821	-13.343	-23.038	-40.690	-17.681	-12.995	-21.753	-19.460	-27.684	-19.781	-28.620	-29.397	-31.379
react	1060	-7.045	-4.377	-17.138	-16.081	-7.022	-11.574	-38.289	-5.089	-10.715	-2.353	-67.118	-8.614	-14.593	-27.045	-10.156	0.189	-15.095	-2.053	-15.936	-11.041	-15.658	-16.435	-15.969
react	1061	-8.568	-6.322	-20.874	-22.761	-8.430	-13.805	-41.089	-5.909	-11.959	-3.603	-76.405	-10.405	-17.095	-30.947	-12.121	-1.025	-16.749	-4.518	-19.152	-13.694	-19.561	-20.338	-20.081
react	1062	-10.215	-9.352	-27.101	-32.216	-11.099	-19.207	-46.289	-8.164	-14.216	-6.188	-100.088	-13.798	-22.264	-38.716	-16.930	-9.820	-21.643	-15.899	-26.545	-18.786	-27.238	-28.015	-28.624
react	1063	-11.190	-10.389	-29.129	-34.351	-12.112	-21.533	-49.090	-9.661	-15.677	-7.752	-115.584	-16.167	-25.393	-43.245	-20.034	-15.749	-25.252	-23.391	-31.214	-21.465	-31.481	-32.258	-33.902
react	1064	-7.959	-6.734	-22.619	-26.197	-8.667	-14.380	-40.289	-5.304	-10.594	-2.878	-68.099	-8.533	-15.644	-29.096	-10.495	0.147	-15.083	-2.621	-16.801	-13.307	-18.449	-19.226	-18.032
react	1065	-7.038	-5.334	-20.606	-21.687	-7.748	-11.323	-37.489	-4.379	-9.136	-1.483	-57.036	-6.755	-12.853	-24.905	-8.186	1.541	-13.086	0.168	-13.096	-10.213	-13.960	-14.737	-13.686
react	1066	-5.752	-2.262	-14.666	-10.784	-5.554	-7.336	-33.089	-3.110	-6.642	0.349	-43.990	-4.166	-9.191	-19.043	-5.401	2.489	-10.867	2.948	-8.480	-6.104	-8.019	-8.796	-7.804
react	1067	-4.415	-1.930	-17.200	-11.297	-5.483	-4.642	-29.889	-1.963	-8.525	-0.084	-49.884	-5.560	-10.056	-18.308	-6.528	-1.058	-15.693	-1.032	-10.039	-9.241	-11.588	-12.366	-6.631
react	1068	-4.140	-1.304	-16.549	-9.098	-5.159	-2.904	-28.689	-1.827	-8.922	0.123	-49.624	-5.310	-9.642	-17.294	-6.415	-1.798	-16.300	-1.565	-9.720	-8.926	-11.067	-11.844	-5.650
react	1069	-11.859	-11.318	-31.995	-40.113	-13.043	-23.121	-48.489	-9.211	-14.603	-7.230	-110.371	-14.966	-24.347	-41.899	-18.991	-14.103	-23.763	-21.223	-29.648	-21.944	-31.437	-32.214	-32.058
react	1070	-12.658	-11.819	-33.405	-41.085	-13.841	-23.319	-49.489	-10.005	-15.526	-7.734	-117.197	-15.900	-25.356	-43.408	-20.296	-16.112	-25.182	-23.736	-31.458	-22.424	-32.421	-33.198	-34.147
react	1071	-12.453	-11.612	-32.760	-40.548	-13.636	-23.565	-49.089	-9.798	-15.452	-7.526	-115.122	-15.659	-24.939	-42.791	-19.881	-15.296	-24.531	-22.711	-30.834	-22.088	-31.877	-32.654	-33.416
react	1072	-5.124	-3.514	-19.752	-16.839	-6.395	-7.308	-32.689	-2.515	-8.597	-0.696	-51.963	-6.057	-11.280	-20.932	-7.078	0.114	-15.328	-0.471	-11.202	-10.282	-13.241	-14.018	-9.128
react	1073	-4.643	-2.505	-19.126	-13.308	-6.090	-4.981	-30.289	-2.127	-8.440	-0.101	-50.240	-5.569	-10.089	-18.541	-6.592	-0.725	-15.945	-0.716	-10.121	-9.004	-11.368	-12.145	-6.859
react	1074	-4.468	-2.236	-19.120	-12.788	-6.044	-4.789	-29.489	-2.015	-8.540	0.059	-49.979	-5.379	-9.769	-17.821	-6.496	-1.143	-16.265	-0.974	-9.864	-9.078	-11.282	-12.059	-6.331
react	1075	-4.089	-2.433	-18.569	-12.327	-5.702	-5.719	-30.689	-2.063	-8.147	-0.298	-50.317	-5.586	-10.484	-19.136	-6.671	-0.809	-16.196	-0.997	-10.397	-8.902	-11.463	-12.240	-7.002
react	1076	-4.165	-2.731	-19.490	-13.294	-6.055	-6.343	-30.689	-2.123	-7.340	-0.269	-50.354	-5.524	-10.426	-19.078	-6.667	-0.773	-16.135	-0.932	-10.364	-8.589	-11.121	-11.898	-6.976
react	1077	-4.142	-1.792	-18.643	-10.823	-5.630	-3.639	-28.689	-1.826	-7.527	0.414	-46.611	-4.719	-9.060	-16.712	-5.816	-1.242	-16.058	-0.718	-8.830	-7.826	-9.676	-10.453	-5.670
react	1078	-4.301	-1.570	-16.623	-9.675	-5.369	-3.734	-29.089	-1.917	-7.907	0.379	-46.728	-4.543	-9.130	-16.982	-5.847	-0.931	-14.808	-0.442	-8.896	-7.671	-9.556	-10.333	-5.962
react	1079	-11.961	-11.116	-31.532	-39.403	-13.144	-23.472	-48.089	-9.311	-14.635	-7.028	-110.175	-14.700	-23.944	-41.296	-18.891	-13.300	-23.300	-20.218	-29.347	-21.436	-30.728	-31.505	-31.651
react	1080	-11.865	-11.019	-31.324	-38.797	-13.049	-23.451	-47.889	-9.215	-14.239	-6.633	-106.228	-13.985	-23.153	-40.405	-18.101	-12.309	-22.197	-18.832	-28.162	-20.032	-28.928	-29.705	-31.010
react	1081	-10.575	-10.004	-29.242	-36.483	-11.758	-21.436	-45.889	-7.920	-13.794	-5.915	-97.395	-13.203	-21.717	-37.969	-16.390	-8.874	-21.006	-14.679	-25.732	-19.624	-27.802	-28.579	-27.809
react	1082	-10.201	-9.609	-28.471	-35.309	-11.384	-20.641	-45.089	-7.549	-12.648	-5.221	-90.586	-11.886	-20.331	-36.183	-15.024	-6.691	-19.339	-11.802	-23.673	-17.949	-25.434	-26.211	-26.161
react	1083	-11.166	-10.614	-30.477	-38.057	-12.349	-22.345	-47.089	-8.516	-14.068	-6.526	-103.395	-13.948	-22.939	-39.791	-17.593	-11.295	-22.245	-17.711	-27.547	-20.592	-29.381	-30.159	-29.899
react	1084	-10.881	-10.009	-29.260	-36.209	-12.064	-21.441	-45.889	-8.228	-13.756	-5.921	-99.267	-13.137	-21.730	-37.982	-16.704	-8.887	-21.028	-14.698	-26.053	-19.349	-27.534	-28.311	-27.820
react	1085	-10.695	-10.228	-28.930	-36.779	-11.879	-21.561	-46.289	-8.054	-12.922	-5.668	-94.302	-12.210	-21.224	-37.676	-15.792	-8.780	-19.280	-14.338	-24.887	-18.281	-26.213	-26.990	-27.771
react	1086	-8.821	-7.226	-22.851	-26.887	-9.005	-16.354	-42.289	-6.177	-10.888	-3.313	-71.524	-8.552	-16.514	-30.966	-11.210	-0.500	-15.143	-3.703	-17.951	-13.334	-18.910	-19.687	-20.292
react	1087	-10.022	-9.115	-27.200	-33.240	-10.904	-19.169	-44.689	-7.374	-12.309	-4.855	-87.011	-11.149	-19.598	-35.250	-14.306	-5.563	-18.453	-10.308	-22.589	-16.758	-23.877	-24.654	-25.026
react	1088	-10.022	-9.116	-27.202	-33.066	-10.905	-19.249	-44.689	-7.374	-12.311	-4.857	-87.024	-11.177	-19.601	-35.253	-14.308	-5.565	-18.456	-10.312	-22.593	-16.585	-23.705	-24.482	-25.028
react	1089	-9.843	-9.221	-27.728	-33.377	-11.027	-19.251	-44.289	-7.194	-12.267	-4.840	-86.964	-11.256	-19.568	-35.020	-14.293	-5.142	-18.619	-9.872	-22.561	-16.428	-23.532	-24.309	-24.849
react	1090	-11.339	-10.251	-29.047	-34.726	-12.281	-21.562	-47.889	-9.295	-14.841	-7.049	-110.395	-14.849	-23.986	-41.238	-18.934	-13.142	-23.472	-20.081	-29.411	-20.280	-29.592	-30.370	-31.533
react	1091	-7.984	-7.172	-23.709	-26.200	-9.170	-14.964	-40.689	-5.641	-10.944	-3.150	-71.207	-8.746	-16.187	-29.839	-11.103	-0.256	-15.673	-3.296	-17.681	-12.373	-17.786	-18.563	-19.219
react	1092	-8.805	-8.212	-25.796	-30.629	-9.989	-17.843	-42.289	-6.152	-11.119	-3.841	-76.793	-9.881	-17.570	-32.022	-12.265	-1.553	-16.715	-5.284	-19.533	-14.717	-20.822	-21.599	-21.591
react	1093	-11.163	-10.610	-30.465	-37.844	-12.346	-22.342	-47.089	-8.510	-14.034	-6.522	-103.363	-14.045	-22.933	-39.785	-17.587	-11.289	-22.233	-17.701	-27.537	-20.382	-29.168	-29.946	-29.893
react	1094	-11.361	-10.813	-30.883	-38.332	-12.545	-22.744	-47.489	-8.709	-14.180	-6.726	-105.372	-14.328	-23.339	-40.391	-17.990	-12.095	-22.653	-18.711	-28.143	-20.670	-29.659	-30.436	-30.595
react	1095	-12.182	-11.042	-31.056	-37.675	-13.066	-23.064	-49.089	-9.829	-15.656	-7.572	-115.582	-15.835	-25.031	-42.883	-19.973	-15.388	-24.677	-22.849	-30.972	-21.635	-31.470	-32.247	-33.522
react	1096	-11.884	-10.673	-30.125	-37.072	-12.524	-23.305	-48.289	-9.230	-14.845	-7.132	-110.152	-15.054	-24.152	-41.604	-18.922	-13.708	-23.536	-20.730	-29.482	-21.189	-30.585	-31.362	-32.012

state	soln	si_PbF2	si_Pbmetal	si_PbO:0.3H2O	si_Periclase	si_Phosgenite	si_Plattnerite	si_Portlandite	si_Pyrochroite	si_Pyrolusite	si_Retgersite	si_Rhodochrosite	si_Siderite	si_Smithsonite	si_Spinel	si_Tenorite	si_Thenardite	si_Thermonatrite	si_V(OH)3	si_V2O5	si_V3O5	si_V4O7	si_V6O13	si_VCl2
react	1047	-10.196	-20.010	-7.144	-12.426	-11.184	-22.164	-13.864	-8.613	-13.199	-9.446	-4.332	-2.572	-3.805	-4.063	-2.020	-11.650	-15.722	-12.832	-11.121	-23.848	-29.335	-19.781	-56.088
react	1048	-10.484	-20.787	-6.121	-10.626	-11.062	-19.341	-11.762	-7.114	-9.900	-10.137	-3.324	-3.216	-2.925	-5.077	-0.706	-11.722	-14.279	-15.569	-12.993	-31.157	-38.481	-29.000	-61.158
react	1049	-15.045	-20.033	-9.767	-15.029	-12.635	-27.387	-16.466	-10.183	-17.369	-10.267	-5.848	-4.396	-6.254	-7.303	-3.942	-13.200	-18.875	-11.216	-13.088	-20.299	-25.471	-20.484	-49.432
react	1050	-11.495	-19.554	-7.488	-13.257	-9.672	-23.308	-14.395	-8.864	-14.250	-8.411	-4.507	-2.101	-4.012	-3.396	-1.804	-11.252	-16.211	-11.471	-9.997	-20.163	-24.689	-14.811	-52.202
react	1051	-12.605	-19.698	-8.032	-13.661	-10.424	-24.252	-14.800	-9.483	-15.269	-8.526	-5.154	-2.643	-4.484	-4.202	-2.350	-10.786	-16.363	-11.132	-10.119	-19.346	-23.732	-14.377	-51.301
react	1052	-15.297	-19.905	-9.539	-14.960	-11.735	-27.059	-16.399	-10.686	-17.772	-8.969	-6.183	-3.886	-5.651	-6.587	-3.831	-10.933	-17.530	-11.217	-12.890	-20.252	-25.374	-20.090	-49.208
react	1053	-15.283	-20.187	-10.320	-15.447	-13.308	-28.341	-16.886	-11.812	-19.398	-9.189	-7.280	-4.810	-6.259	-8.850	-4.482	-10.938	-18.037	-11.214	-13.885	-20.494	-25.864	-22.074	-48.992
react	1054	-11.225	-21.828	-5.762	-8.609	-9.942	-17.582	-9.601	-6.286	-7.672	-9.763	-2.825	-4.699	-2.078	-5.111	-0.161	-9.350	-11.339	-17.889	-14.834	-37.418	-46.362	-37.322	-63.446
react	1055	-12.415	-23.048	-4.782	-7.089	-12.079	-14.402	-7.931	-3.770	-2.956	-10.269	-1.397	-6.542	-2.027	-4.691	0.529	-9.799	-10.605	-21.942	-18.540	-48.477	-60.375	-52.840	-71.610
react	1056	-13.021	-23.500	-4.234	-6.116	-12.917	-12.854	-7.572	-2.342	-0.528	-10.521	-0.456	-7.867	-2.476	-4.675	0.889	-9.931	-10.136	-23.908	-20.471	-53.874	-67.237	-60.634	-75.523
react	1057	-15.483	-20.327	-10.460	-15.424	-13.778	-28.480	-16.862	-11.029	-18.615	-10.865	-6.673	-4.834	-6.775	-8.740	-4.459	-13.551	-19.604	-11.214	-13.885	-20.494	-25.864	-22.074	-49.006
react	1058	-16.377	-20.045	-11.179	-16.441	-13.848	-30.199	-17.878	-12.367	-20.953	-10.378	-7.986	-5.649	-7.445	-11.587	-5.956	-12.703	-20.233	-11.214	-15.884	-20.993	-26.862	-26.072	-47.165
react	1059	-16.518	-19.871	-11.405	-16.843	-13.827	-30.825	-18.280	-13.510	-22.496	-10.422	-9.124	-6.389	-7.629	-12.877	-6.059	-12.496	-20.380	-11.214	-16.684	-21.193	-27.263	-27.673	-46.496
react	1060	-11.784	-20.849	-7.183	-10.990	-13.735	-21.403	-12.019	-6.314	-10.100	-7.291	-2.848	-4.654	-3.846	-6.080	-1.351	-11.235	-16.112	-14.045	-11.945	-27.085	-33.385	-23.856	-59.359
react	1061	-11.690	-20.700	-8.433	-13.050	-14.280	-24.053	-13.645	-7.145	-12.331	-8.136	-3.143	-4.495	-4.820	-6.745	-2.588	-11.772	-17.211	-12.001	-10.658	-21.655	-26.611	-17.195	-55.196
react	1062	-13.863	-20.684	-11.018	-15.058	-15.535	-29.238	-16.403	-9.947	-17.733	-8.503	-5.584	-6.171	-7.121	-11.228	-5.165	-11.464	-19.205	-11.214	-14.284	-20.594	-26.063	-22.873	-49.555
react	1063	-13.252	-20.848	-12.582	-16.057	-17.121	-32.202	-16.978	-10.873	-20.059	-7.527	-6.486	-8.047	-8.155	-17.660	-6.680	-10.538	-20.268	-11.214	-17.085	-21.294	-27.463	-28.474	-47.337
react	1064	-11.018	-20.374	-7.708	-12.617	-11.810	-22.928	-14.054	-8.120	-12.906	-10.337	-3.943	-2.399	-4.204	-4.008	-2.189	-13.150	-16.625	-12.541	-10.937	-23.073	-28.368	-18.831	-55.091
react	1065	-10.675	-20.379	-6.313	-11.214	-11.527	-20.133	-12.651	-6.463	-9.849	-10.029	-2.768	-2.536	-3.101	-3.725	-0.715	-12.841	-15.705	-14.639	-12.334	-28.668	-35.363	-25.823	-59.916
react	1066	-9.575	-20.748	-4.482	-9.050	-10.889	-16.102	-10.187	-4.676	-5.862	-8.341	-1.858	-3.545	-1.572	-2.786	0.858	-10.585	-12.943	-18.196	-15.048	-38.238	-47.390	-38.363	-66.719
react	1067	-12.484	-22.780	-4.914	-7.451	-13.074	-14.934	-8.416	-3.582	-3.168	-9.849	-1.025	-5.949	-1.880	-4.586	0.467	-10.938	-11.718	-21.137	-17.731	-46.263	-57.555	-49.611	-71.519
react	1068	-12.881	-23.173	-4.707	-6.875	-13.290	-14.127	-8.322	-2.444	-1.430	-9.529	-0.189	-6.828	-1.834	-4.828	2.542	-10.182	-10.958	-22.314	-18.884	-49.493	-61.662	-54.271	-73.324
react	1069	-16.460	-20.626	-12.060	-16.724	-15.766	-31.380	-18.162	-12.761	-21.647	-10.502	-8.376	-6.546	-7.982	-13.243	-6.232	-12.994	-20.680	-11.214	-16.484	-21.143	-27.163	-27.272	-47.175
react	1070	-16.067	-20.630	-12.564	-17.225	-16.922	-32.384	-18.664	-12.459	-21.845	-9.971	-8.371	-7.762	-9.215	-15.647	-6.730	-12.302	-21.318	-11.214	-17.485	-21.394	-27.664	-29.274	-46.775
react	1071	-15.198	-20.622	-12.356	-17.019	-16.859	-31.976	-18.457	-12.905	-22.091	-10.053	-8.819	-8.100	-9.091	-15.727	-6.523	-12.388	-21.116	-11.214	-17.084	-21.294	-27.463	-28.473	-47.228
react	1072	-11.694	-21.992	-5.526	-8.834	-12.171	-16.946	-9.369	-4.848	-5.834	-10.638	-1.619	-4.691	-1.937	-5.019	0.040	-12.878	-13.780	-18.539	-15.334	-39.168	-48.563	-39.622	-66.768
react	1073	-12.551	-22.597	-4.931	-7.648	-13.089	-15.151	-8.134	-3.721	-3.507	-10.136	-1.196	-6.261	-2.123	-5.319	0.466	-11.939	-13.038	-20.754	-17.364	-45.213	-56.223	-48.112	-70.987
react	1074	-12.541	-22.837	-4.771	-7.250	-13.252	-14.591	-7.736	-3.929	-3.315	-10.422	-1.627	-6.882	-2.326	-5.487	0.545	-12.093	-12.861	-21.523	-18.102	-47.320	-58.899	-51.126	-72.215
react	1075	-11.613	-22.594	-5.128	-7.410	-12.414	-15.548	-8.553	-4.259	-4.245	-9.371	-1.418	-5.350	-1.488	-3.649	0.332	-9.868	-11.344	-20.399	-17.053	-44.247	-55.001	-46.780	-69.777
react	1076	-11.339	-22.565	-5.099	-7.432	-12.402	-15.519	-8.576	-4.883	-4.869	-9.443	-2.097	-6.114	-1.352	-4.660	0.958	-9.356	-11.113	-20.410	-17.075	-44.280	-55.045	-46.846	-69.780
react	1077	-11.893	-22.882	-4.416	-6.894	-12.671	-13.836	-7.864	-3.179	-2.165	-9.789	-0.906	-6.594	-1.553	-4.081	1.157	-9.739	-10.725	-22.327	-18.910	-49.531	-61.714	-54.349	-73.317
react	1078	-11.946	-22.717	-4.451	-7.092	-12.212	-14.071	-8.537	-3.074	-2.260	-9.308	-0.763	-6.369	-1.798	-4.488	0.546	-9.575	-10.781	-21.937	-18.530	-48.462	-60.354	-52.809	-72.338
react	1079	-16.128	-20.624	-11.858	-16.523	-15.940	-30.978	-17.960	-13.312	-21.998	-10.397	-9.231	-6.686	-8.119	-12.775	-6.030	-12.731	-20.624	-11.214	-16.084	-21.043	-26.963	-26.472	-47.549
react	1080	-15.488	-20.329	-11.463	-16.425	-15.303	-30.483	-17.863	-13.391	-21.977	-10.083	-9.311	-6.903	-8.012	-12.734	-5.932	-11.971	-20.082	-11.214	-15.884	-20.993	-26.862	-26.072	-47.752
react	1081	-15.028	-20.611	-10.745	-15.411	-14.899	-28.765	-16.848	-12.376	-19.962	-10.814	-8.020	-5.766	-6.951	-9.479	-4.917	-14.109	-20.198	-11.214	-13.885	-20.494	-25.864	-22.074	-49.559
react	1082	-14.686	-20.318	-10.051	-15.016	-13.672	-27.671	-16.453	-11.981	-19.167	-10.824	-7.646	-5.026	-6.131	-7.946	-4.525	-13.514	-19.220	-11.216	-13.088	-20.299	-25.471	-20.484	-49.900
react	1083	-15.927	-20.622	-11.356	-16.020	-15.148	-29.976	-17.458	-12.685	-20.871	-10.559	-8.311	-6.056	-7.225	-10.973	-5.528	-12.894	-19.830	-11.214	-15.084	-20.793	-26.462	-24.472	-48.305
react	1084	-15.109	-20.617	-10.751	-15.416	-15.055	-28.771	-16.853	-12.381	-19.967	-10.524	-8.327	-5.653	-7.168	-9.412	-4.923	-13.214	-19.900	-11.214	-13.885	-20.494	-25.864	-22.074	-49.401
react	1085	-15.882	-20.164	-10.498	-15.635	-13.303	-28.718	-17.072	-12.301	-20.087	-10.436	-7.841	-4.876	-6.482	-8.992	-5.150	-12.630	-19.218	-11.214	-14.284	-20.594	-26.063	-22.873	-48.460
react	1086	-12.681	-19.809	-8.143	-13.632	-10.825	-24.363	-15.070	-9.094	-14.880	-9.551	-4.762	-2.766	-4.667	-4.191	-2.561	-12.880	-17.479	-11.429	-10.715	-20.239	-24.924	-16.165	-51.780
react	1087	-14.630	-20.151	-9.685	-14.823	-12.944	-27.105	-16.260	-10.709	-17.695	-10.237	-6.389	-4.557	-6.015	-7.046	-4.034	-12.873	-18.685	-11.218	-12.692	-20.206	-25.279	-19.697	-49.992
react	1088	-14.566	-20.153	-9.687	-14.823	-12.998	-27.107	-16.261	-10.789	-17.775	-10.061	-6.468	-4.539	-5.971	-7.117	-4.034	-12.696	-18.685	-11.218	-12.692	-20.206	-25.279	-19.697	-50.043
react	1089	-14.084	-20.336	-9.670	-14.627	-13.206	-26.890	-16.065	-10.991	-17.777	-10.058	-6.687	-4.540	-5.936	-7.067	-3.839	-11.786	-17.901	-11.223	-12.301	-20.119	-25.097	-18.923	-50.371
react	1090	-14.592	-20.745	-11.879	-15.898	-16.199	-30.899	-16.831	-11.502	-20.088	-8.314	-7.422	-7.493	-8.214	-13.709	-5.708	-10.041	-19.154	-11.214	-15.884	-20.993	-26.862	-26.072	-47.814
react	1091	-11.572	-20.446	-7.980	-12.576	-11.758	-23.400	-13.365	-8.504	-13.490	-9.026	-4.391	-3.066	-4.522	-4.701	-2.132	-10.225	-15.515	-12.270	-10.797	-22.362	-27.488	-18.010	-54.060
react	1092	-11.992	-20.337	-8.671	-13.618	-12.425	-24.891	-15.055	-10.583	-16.369	-10.336	-6.250	-3.653	-4.757	-5.431	-3.143	-12.422	-17.220	-11.428	-10.712	-20.235	-24.918	-16.155	-52.324
react	1093	-15.351	-20.619	-11.352	-16.017	-15.348	-29.973	-17.455	-12.682	-20.868	-10.355	-8.307	-6.323	-7.366	-11.559	-5.523	-12.692	-19.828	-11.214	-15.084	-20.793	-26.462	-24.472	-48.511
react	1094	-15.398	-20.622	-11.556	-16.219	-15.505	-30.376	-17.657	-12.884	-21.270	-10.235	-8.506	-6.724	-7.894	-12.318	-5.726	-12.321	-19.776	-11.214	-15.484	-20.893	-26.662	-25.272	-48.165
react	1095	-12.750	-20.668	-12.402	-16.749	-17.119	-32.022	-17.791	-12.404	-21.590	-8.892	-8.317	-8.583	-8.541	-18.791	-6.553	-11.365	-20.684	-11.214	-17.084	-21.294	-27.463	-28.473	-47.396
react	1096	-15.398	-20.628	-11.962	-16.623	-16.262	-31.182	-18.062	-13.045	-21.831	-9.395	-8.786	-7.299	-8.378	-13.932	-6.128	-12.022	-20.296	-11.214	-16.284	-21.093	-27.063	-26.872	-47.790

state	soln	si_VCl3	si_VF4	si_Vmetal	si_VO	si_VO(OH)2	si_VO2Cl	si_VOCl	si_VOCl2	si_VOSO4	si_Witherite	si_Zincite	si_Zincosite	si_Zn(BO2)2	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zn2(OH)2SO4	si_Zn2(OH)3Cl	si_Zn3(AsO4)2:2.5H2O	si_Zn3O(SO4)2	si_Zn4(OH)6SO4
react	1047	-60.433	-62.011	-81.667	-30.798	-5.288	-19.668	-26.980	-34.070	-21.483	-4.937	-3.646	-13.977	-9.536	-4.512	-4.786	-4.066	-3.846	-4.046	-9.859	-10.400	-15.969	-31.320	-15.382
react	1048	-65.320	-66.470	-87.103	-34.434	-7.124	-21.321	-30.433	-37.340	-25.325	-3.828	-2.276	-14.614	-8.602	-3.142	-3.416	-2.696	-2.476	-2.676	-9.126	-8.379	-14.865	-31.224	-11.911
react	1049	-53.207	-66.147	-76.150	-27.881	-4.972	-18.782	-23.494	-30.014	-19.511	-7.859	-6.149	-14.825	-12.310	-7.015	-7.289	-6.569	-6.349	-6.549	-13.210	-13.537	-20.427	-35.518	-23.739
react	1050	-55.885	-62.960	-79.105	-29.036	-4.326	-18.044	-24.556	-30.984	-19.558	-5.476	-3.930	-13.298	-9.648	-4.796	-5.070	-4.350	-4.130	-4.330	-9.464	-9.907	-15.187	-30.246	-15.556
react	1051	-55.002	-63.954	-78.166	-28.497	-4.187	-17.924	-24.036	-30.483	-18.829	-6.007	-4.373	-13.152	-10.193	-5.239	-5.513	-4.793	-4.573	-4.773	-9.761	-10.612	-16.036	-30.396	-16.739
react	1052	-52.795	-67.058	-76.301	-27.932	-4.923	-18.545	-23.357	-29.690	-18.371	-7.257	-5.715	-13.299	-11.590	-6.581	-6.855	-6.135	-5.915	-6.115	-11.250	-12.531	-19.243	-32.033	-20.911
react	1053	-52.848	-65.715	-75.549	-27.680	-5.170	-19.061	-23.373	-29.974	-18.088	-7.877	-6.350	-13.405	-12.170	-7.216	-7.490	-6.770	-6.550	-6.750	-11.992	-13.821	-20.626	-32.880	-22.924
react	1054	-66.542	-70.289	-91.523	-37.454	-8.745	-21.875	-32.387	-38.228	-27.843	-2.583	-1.099	-14.334	-7.566	-1.965	-2.239	-1.519	-1.299	-1.499	-7.669	-5.658	-14.195	-29.486	-8.098
react	1055	-75.110	-77.582	-98.876	-42.607	-11.698	-25.233	-37.946	-44.191	-33.068	-1.415	0.040	-15.466	-7.000	-0.826	-1.100	-0.380	-0.160	-0.360	-7.662	-4.885	-15.089	-30.612	-5.814
react	1056	-79.246	-81.358	-102.342	-45.073	-13.163	-26.923	-40.635	-47.104	-35.621	-1.048	0.079	-16.516	-7.823	-0.788	-1.062	-0.342	-0.122	-0.322	-8.674	-5.532	-15.430	-32.673	-6.749
react	1057	-52.869	-65.834	-75.549	-27.680	-5.170	-19.068	-23.380	-29.988	-19.310	-8.387	-6.691	-14.968	-13.157	-7.557	-7.831	-7.111	-6.891	-7.091	-13.895	-14.509	-21.641	-36.346	-25.509
react	1058	-50.856	-66.685	-74.048	-27.179	-5.670	-19.397	-22.709	-29.147	-18.306	-9.020	-7.386	-14.159	-13.547	-8.252	-8.526	-7.806	-7.586	-7.786	-13.782	-15.229	-22.764	-35.425	-26.786
react	1059	-50.154	-66.715	-73.448	-26.979	-5.870	-19.563	-22.475	-28.878	-18.148	-9.299	-7.575	-13.990	-13.510	-8.441	-8.715	-7.995	-7.775	-7.975	-13.801	-15.372	-23.051	-35.275	-27.183
react	1060	-64.133	-65.922	-84.079	-32.410	-6.100	-20.910	-29.022	-36.541	-22.307	-5.237	-2.872	-13.214	-9.821	-3.738	-4.012	-3.292	-3.072	-3.272	-8.322	-9.682	-14.950	-29.021	-12.298
react	1061	-59.960	-61.890	-79.935	-29.666	-4.757	-19.556	-26.268	-33.778	-19.864	-6.086	-4.382	-13.626	-11.325	-5.248	-5.522	-4.802	-4.582	-4.782	-10.245	-11.994	-17.384	-31.355	-17.242
react	1062	-53.842	-61.580	-75.248	-27.579	-5.270	-19.592	-23.704	-30.737	-17.714	-8.265	-7.044	-13.625	-13.659	-7.910	-8.184	-7.464	-7.244	-7.444	-12.906	-15.540	-22.509	-34.015	-25.226
react	1063	-51.565	-57.930	-73.149	-26.880	-5.970	-20.233	-22.945	-29.919	-16.401	-9.531	-8.102	-12.670	-14.614	-8.968	-9.242	-8.522	-8.302	-8.502	-13.008	-16.897	-24.599	-33.162	-27.445
react	1064	-59.233	-62.336	-81.075	-30.406	-5.096	-19.273	-26.386	-33.273	-21.992	-5.593	-3.942	-14.974	-10.244	-4.808	-5.082	-4.362	-4.142	-4.342	-11.152	-10.690	-16.572	-33.610	-17.267
react	1065	-64.370	-65.838	-85.273	-33.204	-6.495	-20.985	-29.497	-36.697	-24.483	-4.432	-2.356	-14.481	-8.597	-3.222	-3.496	-2.776	-2.556	-2.756	-9.074	-8.532	-14.005	-31.039	-12.019
react	1066	-71.148	-69.757	-92.130	-37.861	-8.951	-23.415	-34.127	-41.301	-28.323	-2.680	0.050	-13.459	-5.528	-0.816	-1.090	-0.370	-0.150	-0.350	-5.645	-4.793	-10.061	-26.588	-3.778
react	1067	-75.677	-76.852	-97.472	-41.603	-11.093	-25.286	-37.598	-44.501	-32.305	-1.783	0.004	-15.344	-7.024	-0.862	-1.136	-0.416	-0.196	-0.396	-7.577	-5.415	-13.728	-30.405	-5.801
react	1068	-77.346	-78.938	-99.548	-43.079	-11.970	-26.027	-38.939	-45.706	-33.488	-1.619	0.351	-15.304	-7.281	-0.515	-0.789	-0.069	0.151	-0.049	-7.189	-4.885	-13.915	-29.977	-4.719
react	1069	-51.098	-65.241	-73.598	-27.029	-5.820	-19.777	-22.789	-29.457	-18.297	-9.853	-7.927	-14.541	-13.887	-8.793	-9.067	-8.347	-8.127	-8.327	-14.705	-16.391	-24.153	-36.730	-28.790
react	1070	-50.872	-63.695	-72.849	-26.780	-6.070	-20.202	-22.714	-29.557	-17.515	-10.323	-8.862	-14.444	-15.241	-9.728	-10.002	-9.282	-9.062	-9.262	-15.542	-18.186	-26.865	-37.469	-31.499
react	1071	-51.401	-62.274	-73.148	-26.879	-5.970	-20.179	-22.891	-29.810	-17.703	-10.328	-8.737	-14.607	-15.250	-9.603	-9.877	-9.157	-8.937	-9.137	-15.581	-18.113	-26.465	-37.672	-31.288
react	1072	-70.898	-72.150	-92.773	-38.304	-9.195	-23.361	-34.273	-41.149	-29.612	-2.526	-0.727	-15.281	-7.215	-1.593	-1.867	-1.147	-0.927	-1.127	-8.244	-6.150	-13.720	-31.009	-7.931
react	1073	-75.219	-76.670	-96.788	-41.119	-10.810	-25.078	-37.190	-44.169	-31.734	-2.027	-0.208	-15.269	-7.134	-1.074	-1.348	-0.628	-0.408	-0.608	-7.713	-5.813	-14.565	-30.466	-6.361
react	1074	-76.378	-77.539	-98.157	-42.088	-11.379	-25.577	-38.089	-44.997	-32.857	-1.824	-0.188	-15.803	-7.374	-1.054	-1.328	-0.608	-0.388	-0.588	-8.227	-5.902	-15.304	-31.513	-6.834
react	1075	-73.733	-74.144	-96.133	-40.664	-10.554	-24.546	-36.458	-43.159	-30.785	-1.664	0.111	-14.257	-6.325	-0.755	-1.029	-0.309	-0.089	-0.289	-6.383	-4.799	-13.268	-28.123	-4.393
react	1076	-73.732	-73.666	-96.144	-40.675	-10.565	-24.553	-36.465	-43.162	-30.570	-1.826	0.301	-13.840	-5.357	-0.565	-0.839	-0.119	0.101	-0.099	-5.775	-4.414	-12.723	-27.099	-3.405
react	1077	-77.329	-77.555	-99.561	-43.092	-11.982	-26.030	-38.942	-45.699	-33.273	-1.334	0.615	-14.813	-5.914	-0.252	-0.526	0.195	0.415	0.215	-6.434	-4.348	-13.754	-28.731	-3.438
react	1078	-76.204	-77.302	-98.871	-42.602	-11.693	-25.595	-38.307	-44.919	-32.724	-1.549	0.331	-14.837	-6.542	-0.535	-0.809	-0.089	0.131	-0.069	-6.742	-4.670	-13.250	-29.062	-4.312
react	1079	-51.507	-64.879	-73.898	-27.129	-5.720	-19.714	-22.926	-29.631	-18.294	-9.770	-7.761	-14.472	-13.955	-8.627	-8.901	-8.181	-7.961	-8.161	-14.469	-16.196	-23.797	-36.425	-28.223
react	1080	-51.737	-64.340	-74.048	-27.179	-5.670	-19.691	-23.003	-29.734	-18.027	-9.600	-7.652	-14.145	-13.845	-8.518	-8.792	-8.072	-7.852	-8.052	-14.034	-16.054	-23.553	-35.663	-27.569
react	1081	-53.698	-64.357	-75.549	-27.680	-5.170	-19.345	-23.657	-30.541	-19.273	-8.613	-6.867	-15.106	-13.333	-7.733	-8.007	-7.287	-7.067	-7.267	-14.209	-15.137	-22.160	-36.799	-26.174
react	1082	-53.908	-64.861	-76.150	-27.881	-4.972	-19.016	-23.728	-30.482	-19.479	-7.799	-6.026	-14.670	-12.039	-6.892	-7.166	-6.446	-6.226	-6.426	-12.932	-13.525	-20.051	-35.086	-23.216
react	1083	-52.266	-65.231	-74.648	-27.379	-5.470	-19.467	-23.179	-29.886	-18.708	-8.827	-7.159	-14.534	-13.289	-8.025	-8.299	-7.579	-7.359	-7.559	-13.930	-15.245	-22.444	-35.947	-26.480
react	1084	-53.461	-64.506	-75.549	-27.680	-5.170	-19.265	-23.577	-30.383	-18.978	-8.740	-6.783	-14.728	-13.205	-7.649	-7.923	-7.203	-6.983	-7.183	-13.748	-14.891	-21.912	-35.960	-25.546
react	1085	-52.200	-66.657	-75.248	-27.579	-5.270	-19.045	-23.157	-29.642	-18.770	-8.088	-6.502	-14.139	-12.343	-7.368	-7.642	-6.922	-6.702	-6.902	-12.877	-13.908	-20.080	-34.499	-24.112
react	1086	-55.572	-64.181	-78.464	-28.795	-4.485	-18.312	-24.424	-30.962	-20.103	-6.175	-4.558	-14.313	-10.720	-5.424	-5.698	-4.978	-4.758	-4.958	-11.107	-11.073	-17.177	-32.904	-18.455
react	1087	-53.895	-65.383	-76.453	-27.984	-4.874	-18.813	-23.725	-30.374	-19.289	-7.565	-5.896	-14.448	-11.937	-6.762	-7.036	-6.316	-6.096	-6.296	-12.580	-13.260	-19.873	-34.512	-22.604
react	1088	-53.972	-65.251	-76.453	-27.984	-4.874	-18.838	-23.750	-30.425	-19.112	-7.482	-5.852	-14.227	-11.893	-6.718	-6.992	-6.272	-6.052	-6.252	-12.315	-13.197	-19.740	-34.025	-22.250
react	1089	-54.312	-64.225	-76.757	-28.088	-4.778	-18.754	-23.866	-30.553	-18.908	-7.345	-5.799	-14.066	-11.813	-6.665	-6.939	-6.219	-5.999	-6.199	-12.102	-13.204	-19.794	-33.651	-21.932
react	1090	-51.830	-61.715	-74.048	-27.179	-5.670	-19.722	-23.034	-29.796	-17.025	-9.137	-7.854	-13.346	-14.233	-8.720	-8.994	-8.274	-8.054	-8.254	-13.437	-16.490	-24.186	-34.267	-27.377
react	1091	-57.972	-62.730	-80.505	-30.036	-4.926	-18.873	-25.785	-32.442	-20.073	-5.487	-4.194	-13.477	-10.575	-5.060	-5.334	-4.614	-4.394	-4.594	-9.907	-10.864	-17.103	-30.868	-16.527
react	1092	-56.389	-61.746	-78.462	-28.793	-4.483	-18.584	-24.696	-31.506	-19.901	-6.253	-4.650	-14.204	-10.514	-5.516	-5.790	-5.070	-4.850	-5.050	-11.090	-11.529	-17.440	-32.777	-18.621
react	1093	-52.576	-64.085	-74.648	-27.379	-5.470	-19.570	-23.282	-30.093	-18.507	-8.941	-7.300	-14.474	-13.399	-8.166	-8.440	-7.720	-7.500	-7.700	-14.010	-15.630	-22.863	-35.968	-26.842
react	1094	-52.207	-63.874	-74.348	-27.279	-5.570	-19.647	-23.159	-29.947	-18.285	-9.150	-7.832	-14.684	-13.873	-8.698	-8.972	-8.252	-8.032	-8.232	-14.752	-16.570	-24.270	-36.920	-28.648
react	1095	-51.653	-57.286	-73.149	-26.880	-5.970	-20.263	-22.975	-29.978	-17.113	-9.881	-8.187	-13.467	-14.858	-9.053	-9.327	-8.607	-8.387	-8.587	-13.890	-17.096	-24.821	-34.840	-28.496
react	1096	-51.945	-63.261	-73.748	-27.079	-5.770	-19.960	-23.072	-29.972	-17.785	-9.560	-8.197	-14.349	-14.497	-9.063	-9.337	-8.617	-8.397	-8.597	-14.782	-17.213	-25.028	-36.615	-29.408

state	soln	si_Zn5(OH)8Cl2	si_ZnCl2	si_ZnCO3:1H2O	si_ZnF2	si_Znmetal	si_ZnO(active)	si_ZnSO4:1H2O
react	**1047**	-21.230	-20.534	-3.545	-15.249	-39.700	-3.500	-9.409
react	**1048**	-15.818	-20.599	-2.665	-15.191	-40.131	-2.131	-10.046
react	**1049**	-30.006	-19.298	-5.994	-19.978	-39.603	-6.003	-10.257
react	**1050**	-20.527	-18.694	-3.752	-16.489	-39.184	-3.784	-8.731
react	**1051**	-22.381	-18.775	-4.224	-17.498	-39.228	-4.227	-8.584
react	**1052**	-27.560	-18.588	-5.391	-20.024	-39.269	-5.569	-8.731
react	**1053**	-30.775	-19.261	-5.999	-19.865	-39.405	-6.205	-8.837
react	**1054**	-9.198	-18.689	-1.818	-15.113	-40.353	-0.953	-9.766
react	**1055**	-6.513	-20.560	-1.767	-16.144	-41.414	0.186	-10.899
react	**1056**	-7.769	-21.969	-2.216	-17.261	-42.376	0.224	-11.948
react	**1057**	-32.494	-19.616	-6.516	-20.265	-39.746	-6.545	-10.400
react	**1058**	-34.627	-18.969	-7.185	-21.136	-39.441	-7.240	-9.592
react	**1059**	-35.104	-18.690	-7.369	-21.240	-39.230	-7.429	-9.422
react	**1060**	-19.019	-21.419	-3.586	-16.024	-39.726	-2.726	-8.647
react	**1061**	-25.154	-21.510	-4.560	-16.191	-39.837	-4.237	-9.058
react	**1062**	-34.908	-20.618	-6.861	-18.441	-39.899	-6.899	-9.058
react	**1063**	-38.680	-20.158	-7.895	-17.324	-39.557	-7.957	-8.102
react	**1064**	-22.105	-20.225	-3.944	-15.804	-39.796	-3.796	-10.406
react	**1065**	-16.205	-20.665	-2.841	-15.270	-39.611	-2.211	-9.914
react	**1066**	-6.321	-20.406	-1.312	-13.595	-39.405	0.195	-8.891
react	**1067**	-7.609	-21.511	-1.620	-16.118	-41.051	0.150	-10.777
react	**1068**	-6.202	-21.492	-1.574	-16.375	-41.304	0.497	-10.736
react	**1069**	-37.493	-19.671	-7.722	-20.879	-39.682	-7.781	-9.974
react	**1070**	-42.019	-20.456	-8.955	-20.917	-40.117	-8.717	-9.876
react	**1071**	-41.747	-20.684	-8.831	-20.131	-40.192	-8.592	-10.040
react	**1072**	-9.811	-20.788	-1.677	-15.447	-40.382	-0.582	-10.713
react	**1073**	-8.618	-21.673	-1.863	-16.380	-41.062	-0.062	-10.701
react	**1074**	-8.776	-21.912	-2.066	-16.510	-41.442	-0.042	-11.235
react	**1075**	-6.272	-20.601	-1.228	-14.926	-40.544	0.256	-9.689
react	**1076**	-5.312	-20.402	-1.092	-14.491	-40.353	0.447	-9.272
react	**1077**	-4.865	-21.209	-1.293	-15.414	-41.040	0.760	-10.245
react	**1078**	-5.792	-21.002	-1.538	-15.716	-41.124	0.477	-10.269
react	**1079**	-36.936	-19.778	-7.859	-20.582	-39.716	-7.615	-9.904
react	**1080**	-36.544	-19.822	-7.752	-20.229	-39.707	-7.506	-9.578
react	**1081**	-33.925	-20.344	-6.691	-19.702	-39.921	-6.721	-10.538
react	**1082**	-29.859	-19.642	-5.871	-19.213	-39.480	-5.880	-10.102
react	**1083**	-34.434	-19.682	-6.965	-20.282	-39.614	-7.014	-9.966
react	**1084**	-33.349	-20.102	-6.908	-19.693	-39.838	-6.638	-10.160
react	**1085**	-31.101	-18.981	-6.222	-20.437	-39.356	-6.356	-9.571
react	**1086**	-23.487	-19.141	-4.407	-17.648	-39.413	-4.412	-9.745
react	**1087**	-29.200	-19.502	-5.755	-19.392	-39.551	-5.750	-9.880
react	**1088**	-29.030	-19.509	-5.711	-19.282	-39.506	-5.706	-9.659
react	**1089**	-28.992	-19.680	-5.676	-18.765	-39.654	-5.654	-9.498
react	**1090**	-37.617	-20.087	-7.954	-19.119	-39.909	-7.709	-8.779
react	**1091**	-22.705	-19.816	-4.262	-16.338	-39.848	-4.048	-8.909
react	**1092**	-24.491	-19.778	-4.497	-16.523	-39.504	-4.504	-9.636
react	**1093**	-35.343	-20.029	-7.106	-19.850	-39.755	-7.154	-9.907
react	**1094**	-37.757	-20.316	-7.634	-20.226	-40.086	-7.686	-10.116
react	**1095**	-39.163	-20.301	-8.281	-17.087	-39.642	-8.041	-8.899
react	**1096**	-39.407	-20.505	-8.118	-20.185	-40.051	-8.051	-9.782

state	soln	pH	pe	Alk	mu	mass_H2O	charge	pct_err	Na	K	Ca	Mg	Cl	S(6)	C(4)	F	Fe	Cu	N(5)	P	Mn	si_Al(OH)3(am)	si_Al2O3	si_Al4(OH)10SO4	si_AlAsO4:2H2O	si_AlOHSO4	si_Alunite	si_Anglesite
react	**1097**	4.6	4	-2.3E-05	8.3E-04	1	8.67E-17	8.11E-12	2.17E-04	2.56E-05	7.49E-05	4.11E-05	2.15E-04	1.67E-04	9.99E-06	5.26E-06	1.79E-06	1.57E-08	0.00E+00	0.00E+00	2.55E-07	-2.473	-2.998	-2.446	-6.808	-1.497	0.266	-4.466
react	**1098**	4.7	4	-1.6E-05	9.3E-04	1	1.16E-15	9.71E-11	2.83E-04	2.56E-05	7.49E-05	4.11E-05	2.10E-04	2.03E-04	9.99E-06	5.26E-06	2.06E-06	1.57E-08	0.00E+00	0.00E+00	2.73E-07	-2.131	-2.314	-1.196	-6.528	-1.273	1.155	-4.392
react	**1099**	7	4	2.6E-04	6.3E-03	1	1.13E-18	1.71E-14	4.58E-04	2.56E-05	1.45E-03	2.06E-04	8.46E-05	1.79E-03	1.30E-04	1.05E-05	1.27E-05	1.57E-08	0.00E+00	0.00E+00	3.64E-08	0.347	2.641	4.929	-6.717	-2.581	3.292	-3.872
react	**1100**	4.4	4	-4.3E-05	3.4E-03	1	1.94E-13	4.36E-09	1.39E-03	2.56E-05	2.25E-04	1.65E-04	6.68E-04	8.33E-04	9.99E-06	5.26E-06	6.09E-06	1.57E-08	0.00E+00	0.00E+00	2.37E-07	-3.180	-4.413	-4.241	-7.505	-1.170	-0.002	-3.953
react	**1101**	4.2	4	-7.6E-05	6.6E-03	1	6.07E-14	7.61E-10	2.13E-03	5.12E-05	6.99E-04	3.09E-04	5.76E-04	1.88E-03	9.99E-06	5.27E-06	1.07E-06	1.57E-08	0.00E+00	0.00E+00	1.17E-06	-4.411	-6.873	-8.462	-8.904	-1.700	-2.203	-3.753
react	**1102**	5.2	4	1.2E-04	8.4E-04	1	-1.87E-18	-1.59E-13	1.30E-04	2.56E-05	2.50E-05	4.11E-05	5.51E-04	2.08E-05	2.00E-05	5.26E-06	3.87E-05	3.15E-08	0.00E+00	0.00E+00	3.64E-08	0.102	2.152	5.706	-4.757	-1.071	4.294	-4.921
react	**1103**	5	4	1.9E-05	8.0E-04	1	7.12E-15	6.20E-10	3.04E-04	2.56E-05	2.50E-05	4.11E-05	3.82E-04	1.04E-04	9.99E-06	5.26E-06	6.09E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.800	0.349	3.229	-5.460	-0.843	3.648	-4.677
react	**1104**	5.2	4	3.3E-05	1.0E-03	1	5.85E-19	3.59E-14	5.65E-04	2.56E-05	2.50E-05	4.11E-05	5.76E-04	1.25E-04	2.00E-05	5.26E-06	5.19E-06	1.57E-08	0.00E+00	0.00E+00	1.82E-08	-0.428	1.091	4.397	-5.290	-0.788	4.327	-4.607

state	soln	si_Anhydrite	si_Antlerite	si_Aragonite	si_Arsenolite	si_Artinite	si_As2O5	si_Atacamite	si_Azurite	si_Ba(OH)2:8H2O	si_Ba2V2O7:2H2O	si_Ba3(AsO4)2	si_Ba3(VO4)2:4H2O	si_BaCrO4	si_BaF2	si_Barite	si_Be(OH)2(alpha)	si_Be(OH)2(am)	si_Be(OH)2(beta)	si_Bianchite	si_Birnessite	si_Bixbyite	si_Boehmite	si_Brochantite
react	**1097**	-3.689	-17.929	-8.384	-31.790	-21.793	-27.377	-13.064	-22.559	-21.098	-27.325	-1.874	-41.097	-33.192	-13.905	0.221	-4.779	-5.079	-4.379	-8.430	-23.703	-27.779	-0.251	-23.059
react	**1098**	-3.613	-17.463	-8.191	-32.837	-21.405	-27.501	-12.785	-21.979	-20.910	-26.547	-1.431	-40.130	-32.502	-13.997	0.292	-4.596	-4.896	-4.196	-8.239	-23.278	-27.130	0.091	-22.398
react	**1099**	-1.656	-8.263	-2.097	-61.903	-10.722	-32.834	-6.844	-8.289	-16.052	-12.118	7.810	-20.843	-17.185	-9.899	1.364	-1.544	-1.844	-1.144	-7.557	-15.097	-15.368	2.569	-8.869
react	**1100**	-2.663	-18.367	-8.390	-30.145	-21.545	-27.355	-13.367	-24.026	-21.209	-28.346	-2.182	-42.228	-34.471	-13.510	1.146	-5.230	-5.530	-4.830	-7.091	-24.620	-29.214	-0.958	-23.988
react	**1101**	-1.942	-19.065	-8.367	-29.223	-21.929	-27.694	-14.173	-25.420	-21.569	-29.868	-3.603	-44.111	-36.035	-12.481	1.485	-5.516	-5.816	-5.116	-6.545	-24.796	-29.165	-2.188	-25.152
react	**1102**	-5.104	-15.574	-7.372	-38.686	-19.098	-28.425	-10.253	-17.499	-19.873	-22.474	0.755	-35.020	-28.479	-15.351	-0.702	-3.705	-4.005	-3.305	-8.682	-22.140	-25.854	2.324	-19.203
react	**1103**	-4.379	-16.546	-8.067	-36.291	-20.195	-28.027	-11.613	-20.180	-20.477	-24.482	-0.660	-37.632	-30.550	-14.967	-0.176	-4.045	-4.345	-3.645	-8.455	-23.244	-27.662	1.423	-20.875
react	**1104**	-4.305	-15.705	-7.386	-38.693	-19.123	-28.429	-10.864	-18.443	-20.120	-22.967	0.011	-35.761	-29.217	-14.588	-0.136	-3.715	-4.015	-3.315	-8.372	-22.454	-26.481	1.794	-19.648

state	soln	si_Brucite	si_Bunsenite	si_Ca(VO3)2	si_Ca2V2O7	si_Ca2V2O7:2H2O	si_Ca3(AsO4)2:4H2O	si_Ca3(VO4)2	si_Ca3(VO4)2:4H2O	si_CaCrO4	si_Calcite	si_Cd(BO2)2	si_Cd(OH)2	si_Cd(OH)2(am)	si_Cd3(OH)2(SO4)2	si_Cd3(OH)4SO4	si_Cd4(OH)6SO4	si_CdCl2	si_CdCl2:1H2O	si_CdCl2:2.5H2O	si_CdF2	si_Cdmetal(alpha)	si_Cdmetal(gamma)	si_CdOHCl
react	**1097**	-12.096	-10.781	-18.699	-25.533	-29.585	-27.954	-41.988	-42.888	-38.886	-8.204	-19.277	-13.571	-13.657	-32.601	-35.397	-41.164	-15.832	-14.798	-14.578	-21.735	-30.642	-30.745	-11.747
react	**1098**	-11.901	-10.489	-18.104	-24.744	-28.796	-27.495	-41.004	-41.904	-38.191	-8.011	-19.154	-13.377	-13.463	-32.254	-34.931	-40.504	-15.859	-14.825	-14.605	-21.822	-30.647	-30.751	-11.663
react	**1099**	-6.735	-6.428	-7.648	-8.546	-12.598	-15.601	-19.064	-19.964	-21.990	-1.917	-14.426	-8.918	-9.004	-26.449	-25.341	-26.455	-16.833	-15.799	-15.579	-18.123	-30.789	-30.892	-9.921
react	**1100**	-11.973	-10.522	-19.508	-26.351	-30.403	-27.958	-42.814	-43.714	-40.064	-8.210	-19.688	-14.070	-14.156	-32.027	-35.857	-42.123	-14.973	-13.939	-13.719	-21.729	-30.740	-30.844	-11.566
react	**1101**	-12.166	-10.625	-20.288	-27.110	-31.162	-28.234	-43.552	-44.452	-41.246	-8.187	-20.005	-14.539	-14.625	-32.033	-36.563	-43.298	-15.189	-14.155	-13.935	-20.808	-30.809	-30.912	-11.908
react	**1102**	-10.888	-9.873	-15.565	-21.667	-25.719	-26.803	-37.388	-38.288	-34.665	-7.192	-17.548	-12.373	-12.459	-33.302	-33.949	-38.518	-15.016	-13.981	-13.762	-23.208	-30.643	-30.747	-10.739
react	**1103**	-11.291	-10.277	-16.770	-23.276	-27.328	-27.619	-39.402	-40.302	-36.537	-7.887	-18.239	-12.772	-12.858	-32.239	-34.016	-38.983	-15.332	-14.298	-14.078	-22.619	-30.642	-30.746	-11.097
react	**1104**	-10.900	-9.886	-15.579	-21.694	-25.746	-26.847	-37.429	-38.329	-35.171	-7.206	-17.640	-12.387	-12.473	-31.719	-33.179	-37.761	-14.995	-13.960	-13.740	-22.213	-30.658	-30.761	-10.735

state	soln	si_CdSO4	si_CdSO4:1H2O	si_CdSO4:2.67H2O	si_Cerussite	si_CH4(g)	si_Chalcanthite	si_Claudetite	si_Co(BO2)2	si_Co(OH)2	si_Co(OH)3	si_CO2(g)	si_Co3(AsO4)2	si_Co3O4	si_CoCl2	si_CoCl2:6H2O	si_CoCO3	si_CoF2	si_CoF3	si_CoFe2O4	si_CoO	si_CoSO4	si_CoSO4:6H2O	si_Cotunnite
react	**1097**	-12.810	-11.256	-11.109	-7.761	-49.444	-9.110	-31.485	-35.220	-11.734	-20.131	-3.542	-29.625	-33.024	-23.471	-17.740	-10.349	-20.063	-55.512	2.787	-12.226	-14.497	-9.222	-10.985
react	**1098**	-12.733	-11.179	-11.032	-7.571	-50.246	-9.034	-32.532	-35.097	-11.539	-19.836	-3.544	-29.165	-32.241	-23.498	-17.767	-10.157	-20.150	-55.640	3.691	-12.032	-14.421	-9.146	-11.015
react	**1099**	-12.060	-10.506	-10.360	-2.914	-68.294	-8.491	-61.598	-30.378	-7.090	-13.087	-3.192	-21.150	-14.293	-24.481	-18.751	-5.356	-16.460	-50.030	22.360	-7.583	-13.757	-8.482	-12.142
react	**1100**	-12.273	-10.719	-10.573	-8.280	-47.841	-8.566	-29.840	-35.320	-11.921	-20.518	-3.540	-30.163	-33.985	-22.300	-16.570	-10.533	-19.746	-55.142	2.276	-12.413	-13.649	-8.374	-10.149
react	**1101**	-12.042	-10.488	-10.341	-8.777	-46.239	-8.333	-28.918	-35.243	-11.997	-20.794	-3.538	-30.731	-34.613	-22.124	-16.393	-10.608	-18.432	-53.334	-0.666	-12.489	-13.025	-7.751	-10.396
react	**1102**	-13.760	-12.206	-12.059	-5.789	-53.966	-9.758	-38.381	-33.481	-10.525	-18.322	-3.264	-27.047	-28.199	-22.645	-16.914	-8.862	-21.527	-57.711	10.286	-11.018	-15.437	-10.162	-9.674
react	**1103**	-13.029	-11.475	-11.328	-6.965	-52.656	-9.328	-35.986	-34.177	-10.929	-18.926	-3.554	-27.860	-29.809	-22.966	-17.235	-9.556	-20.942	-56.832	7.067	-11.421	-14.711	-9.436	-10.477
react	**1104**	-12.961	-11.407	-11.260	-6.288	-53.966	-9.259	-38.388	-33.572	-10.539	-18.336	-3.264	-27.091	-28.238	-22.622	-16.892	-8.876	-20.530	-56.210	8.499	-11.031	-14.637	-9.362	-10.138

state	soln	si_Cr(OH)2	si_Cr(OH)3	si_Cr(OH)3(am)	si_Cr2O3	si_CrCl2	si_CrCl3	si_CrF3	si_Crmetal	si_CrO3	si_Cryolite	si_Cu(OH)2	si_Cu2SO4	si_Cu3(AsO4)2:2H2O	si_CuCO3	si_CuCrO4	si_CuF	si_CuF2	si_CuF2:2H2O	si_Cumetal	si_CuOCuSO4	si_Cupricferrite	si_Cuprite	si_Cuprousferrite	si_CuSO4
react	**1097**	-21.053	-5.917	-3.831	-6.805	-40.890	-44.541	-27.775	-57.917	-42.947	-24.125	-7.370	-20.316	-22.857	-8.885	-39.413	-11.210	-22.831	-17.166	-4.450	-20.749	-6.785	-7.805	3.261	-14.690
react	**1098**	-20.953	-5.716	-3.631	-6.404	-41.011	-44.673	-27.997	-58.017	-42.446	-23.988	-7.175	-20.244	-22.397	-8.692	-38.717	-11.256	-22.918	-17.253	-4.455	-20.477	-5.881	-7.616	3.710	-14.613
react	**1099**	-19.694	-2.157	-0.072	0.715	-45.184	-49.263	-25.576	-61.358	-31.987	-16.331	-2.846	-19.973	-14.744	-4.012	-23.930	-9.607	-19.348	-13.683	-4.726	-15.606	12.668	-3.558	12.849	-14.070
react	**1100**	-21.423	-6.486	-4.401	-7.944	-39.901	-43.074	-27.587	-57.887	-44.116	-21.543	-7.860	-19.863	-24.308	-9.373	-41.073	-11.249	-22.817	-17.152	-4.540	-20.696	-7.600	-8.387	2.808	-14.146
react	**1101**	-21.826	-7.089	-5.004	-9.150	-40.052	-43.298	-26.106	-57.890	-45.319	-18.683	-8.326	-19.695	-26.045	-9.837	-42.742	-10.820	-21.894	-16.229	-4.606	-20.928	-10.932	-8.919	1.109	-13.912
react	**1102**	-19.966	-4.229	-2.144	-3.430	-40.184	-43.427	-30.095	-58.030	-39.459	-28.430	-5.869	-20.662	-19.402	-7.105	-34.424	-11.645	-24.002	-18.337	-4.149	-19.895	1.007	-6.003	7.307	-15.337
react	**1103**	-20.633	-5.097	-3.011	-5.165	-40.770	-44.171	-29.480	-58.297	-40.927	-25.862	-6.569	-20.533	-21.106	-8.096	-36.592	-11.651	-23.714	-18.049	-4.449	-20.166	-2.509	-7.004	5.399	-14.908
react	**1104**	-20.457	-4.721	-2.636	-4.413	-40.641	-43.866	-29.072	-58.522	-39.951	-24.026	-6.183	-20.478	-20.349	-7.420	-35.230	-11.454	-23.306	-17.641	-4.463	-19.711	-1.081	-6.632	6.106	-14.838

state	soln	si_Diaspore	si_Dolomite(disordered)	si_Dolomite(ordered)	si_Epsomite	si_Fe(OH)2	si_Fe(OH)2.7Cl.3	si_Fe(VO3)2	si_Fe2(SO4)3	si_Fe3(OH)8	si_FeAsO4:2H2O	si_FeCr2O4	si_Ferrihydrite	si_Fluorite	si_Gibbsite	si_Goethite	si_Goslarite	si_Gypsum	si_H-Jarosite	si_Halite	si_Hausmannite	si_Hematite	si_Hercynite	si_Huntite
react	**1097**	1.454	-17.085	-16.535	-6.180	-10.183	-0.495	-10.943	-37.531	-18.942	-11.786	-12.982	-4.242	-7.515	0.036	-1.542	-8.183	-3.439	-17.161	-8.961	-36.216	-0.683	-2.857	-37.539
react	**1098**	1.796	-16.700	-16.150	-6.103	-9.928	-0.174	-10.288	-37.176	-17.978	-11.493	-12.325	-3.887	-7.602	0.378	-1.187	-7.993	-3.363	-16.333	-8.859	-35.342	0.026	-1.918	-36.768
react	**1099**	4.274	-5.088	-4.538	-4.723	-5.118	6.121	-0.765	-34.312	1.052	-7.050	-0.397	3.223	-2.619	2.856	5.923	-7.311	-1.406	-2.574	-9.090	-19.998	14.246	7.847	-14.121
react	**1100**	0.747	-16.965	-16.415	-5.023	-10.145	-0.454	-11.705	-34.750	-19.228	-11.937	-14.082	-4.404	-7.019	-0.671	-1.704	-6.845	-2.413	-15.578	-7.691	-38.167	-1.007	-4.234	-37.169
react	**1101**	-0.483	-17.133	-16.583	-4.516	-11.378	-1.849	-13.739	-35.517	-23.327	-13.540	-16.521	-5.837	-5.608	-1.902	-3.137	-6.299	-1.692	-18.477	-7.590	-37.894	-3.874	-7.928	-37.718
react	**1102**	4.029	-14.587	-14.037	-7.120	-7.637	2.593	-5.998	-37.685	-10.106	-9.165	-7.061	-1.096	-9.453	2.611	1.604	-8.436	-4.854	-12.022	-8.774	-33.928	5.607	4.838	-32.068
react	**1103**	3.128	-15.975	-15.425	-6.394	-8.845	1.197	-8.005	-37.112	-14.130	-10.374	-10.004	-2.504	-8.870	1.710	0.196	-8.209	-4.129	-13.986	-8.565	-36.440	2.792	1.827	-34.843
react	**1104**	3.499	-14.613	-14.063	-6.320	-8.524	1.711	-6.884	-37.020	-12.766	-10.053	-8.931	-1.983	-8.457	2.081	0.717	-8.126	-4.055	-13.056	-8.121	-34.869	3.834	2.890	-32.119

state	soln	si_Hydrocerussite	si_Hydromagnesite	si_K-Alum	si_K-Jarosite	si_K2Cr2O7	si_K2CrO4	si_Langite	si_Larnakite	si_Laurionite	si_Lepidocrocite	si_Li2CrO4	si_Lime	si_Litharge	si_Maghemite	si_Magnesioferrite	si_Magnesite	si_Magnetite	si_Malachite	si_Manganite	si_Massicot	si_Matlockite	si_Melanothallite	si_Melanterite
react	**1097**	-22.213	-54.251	-12.619	-14.468	-75.086	-45.657	-25.325	-11.023	-8.106	-2.422	-54.322	-27.694	-11.896	-8.487	-14.213	-9.481	-2.123	-13.774	-14.202	-12.096	-10.020	-21.516	-7.464
react	**1098**	-21.641	-53.284	-12.414	-13.541	-73.886	-44.958	-24.664	-10.758	-8.025	-2.067	-53.429	-27.499	-11.704	-7.778	-13.309	-9.288	-1.159	-13.387	-13.877	-11.904	-10.080	-21.543	-7.328
react	**1099**	-8.021	-26.048	-15.232	2.494	-48.417	-29.948	-11.136	-5.932	-6.436	5.043	-38.860	-21.757	-7.398	6.442	6.077	-3.771	17.871	-4.378	-7.996	-7.598	-8.870	-22.647	-6.303
react	**1100**	-23.772	-53.626	-11.472	-13.099	-77.854	-47.256	-26.254	-11.032	-7.949	-2.584	-55.124	-27.702	-12.417	-8.811	-14.414	-9.356	-2.409	-14.753	-14.919	-12.617	-9.611	-20.650	-6.392
react	**1101**	-25.267	-54.583	-11.213	-15.909	-80.081	-48.280	-27.418	-11.331	-8.322	-4.017	-56.367	-27.681	-12.917	-11.678	-17.473	-9.547	-6.508	-15.683	-14.895	-13.117	-9.289	-20.863	-6.925
react	**1102**	-16.576	-47.096	-13.740	-8.728	-66.910	-40.969	-21.470	-9.785	-6.604	0.724	-50.838	-26.961	-10.202	-2.197	-6.714	-7.995	6.713	-10.494	-13.239	-10.402	-9.854	-20.398	-7.067
react	**1103**	-19.812	-50.273	-12.583	-10.893	-70.245	-42.837	-23.141	-10.426	-7.449	-0.684	-52.705	-27.365	-11.088	-5.012	-9.933	-8.688	2.690	-12.185	-14.143	-11.288	-10.204	-21.016	-7.146
react	**1104**	-18.073	-47.157	-12.647	-9.765	-67.897	-41.465	-21.914	-9.970	-7.086	-0.163	-51.333	-26.974	-10.701	-3.970	-8.500	-8.007	4.053	-11.123	-13.553	-10.901	-9.830	-20.677	-7.141

state	soln	si_Mg(OH)2(active)	si_Mg(VO3)2	si_Mg2V2O7	si_MgCr2O4	si_MgCrO4	si_MgF2	si_Minium	si_Mirabilite	si_Mn(VO3)2	si_Mn2(SO4)3	si_Mn3(AsO4)2:8H2O	si_MnCl2:4H2O	si_MnSO4	si_Montepnonite	si_Morenosite	si_Na-Jarosite	si_Na2Cr2O7	si_Na2CrO4	si_Na3VO4	si_Na4V2O7	si_Nantokite	si_Natron	si_NaVO3
react	**1097**	-14.046	-24.576	-34.908	-20.615	-46.789	-10.142	-53.927	-10.095	-20.406	-61.877	-25.557	-16.741	-13.100	-15.031	-9.245	-17.138	-80.574	-47.242	-42.934	-51.752	-6.157	-18.532	-11.957
react	**1098**	-13.851	-23.981	-34.118	-20.019	-46.094	-10.229	-53.151	-9.787	-19.781	-61.582	-25.007	-16.738	-12.993	-14.836	-9.071	-16.097	-79.146	-46.315	-42.095	-50.500	-6.174	-18.108	-11.544
react	**1099**	-8.685	-14.102	-19.073	-7.735	-30.469	-5.822	-35.635	-8.601	-11.487	-61.176	-19.596	-18.589	-13.197	-10.378	-8.796	0.147	-53.257	-30.885	-32.282	-35.844	-6.861	-12.785	-6.702
react	**1100**	-13.923	-25.254	-35.463	-21.631	-47.836	-9.515	-55.892	-7.877	-21.724	-60.207	-27.086	-15.900	-12.582	-15.529	-7.952	-14.963	-81.728	-47.227	-41.559	-50.186	-5.769	-17.346	-11.766
react	**1101**	-14.116	-26.248	-36.650	-23.030	-49.232	-8.318	-57.790	-7.229	-22.301	-58.058	-26.753	-15.423	-11.658	-15.998	-7.355	-17.888	-84.186	-48.482	-42.038	-51.091	-5.909	-17.396	-12.192
react	**1102**	-12.838	-20.968	-30.092	-16.032	-42.094	-11.606	-47.647	-11.486	-17.644	-66.396	-25.517	-16.760	-14.885	-13.832	-10.485	-11.621	-72.842	-42.997	-40.599	-47.839	-5.447	-17.497	-10.379
react	**1103**	-13.241	-22.171	-31.698	-18.170	-43.965	-11.021	-50.703	-10.021	-19.147	-64.816	-27.232	-17.382	-14.460	-14.231	-9.760	-13.417	-75.440	-44.129	-40.495	-47.966	-5.907	-17.451	-10.611
react	**1104**	-12.850	-20.980	-30.116	-17.028	-42.598	-10.608	-49.144	-9.403	-17.957	-64.585	-26.461	-17.039	-14.386	-13.846	-9.685	-12.020	-72.555	-42.219	-38.694	-45.299	-5.744	-16.227	-9.744

state	soln	si_Nesquehonite	si_Ni(OH)2	si_Ni3(AsO4)2:8H2O	si_Ni4(OH)6SO4	si_NiCO3	si_Nsutite	si_O2(g)	si_Otavite	si_Pb(BO2)2	si_Pb(OH)2	si_Pb10(OH)6O(CO3)6	si_Pb2(OH)3Cl	si_Pb2O(OH)2	si_Pb2O3	si_Pb2OCO3	si_Pb2V2O7	si_Pb3(AsO4)2	si_Pb3(VO4)2	si_Pb3O2CO3	si_Pb3O2SO4	si_Pb4(OH)6SO4	si_Pb4O3SO4	si_PbCrO4
react	**1097**	-12.271	-11.129	-31.376	-38.394	-13.154	-23.116	-48.689	-9.617	-15.231	-7.352	-113.391	-15.478	-24.591	-42.243	-19.535	-14.547	-24.076	-21.789	-30.314	-21.346	-30.961	-31.738	-32.759
react	**1098**	-12.078	-10.837	-30.624	-37.346	-12.865	-22.691	-48.289	-9.424	-15.110	-7.160	-111.484	-15.205	-24.207	-41.659	-19.153	-13.763	-23.624	-20.813	-29.740	-20.888	-30.311	-31.088	-32.066
react	**1099**	-6.561	-6.776	-23.775	-24.887	-8.452	-14.510	-39.090	-4.614	-10.535	-2.854	-66.319	-9.310	-15.597	-28.449	-10.190	-0.439	-16.040	-3.183	-16.472	-11.757	-16.875	-17.652	-17.302
react	**1100**	-12.146	-10.871	-30.578	-36.326	-12.893	-24.033	-49.489	-10.112	-15.665	-7.873	-118.591	-15.843	-25.634	-43.686	-20.575	-16.391	-25.618	-24.154	-31.876	-21.876	-32.013	-32.790	-34.450
react	**1101**	-12.337	-10.973	-31.226	-36.038	-12.994	-24.209	-50.290	-10.579	-16.012	-8.373	-123.575	-16.715	-26.633	-45.085	-21.572	-18.191	-27.456	-26.454	-33.373	-22.674	-33.311	-34.088	-36.152
react	**1102**	-10.785	-10.221	-29.701	-36.912	-11.968	-21.553	-46.289	-8.140	-13.007	-5.658	-94.789	-12.283	-21.205	-37.657	-15.870	-8.761	-20.044	-14.309	-24.956	-18.415	-26.336	-27.114	-27.578
react	**1103**	-11.478	-10.625	-30.514	-37.397	-12.662	-22.657	-47.089	-8.828	-14.184	-6.544	-105.381	-14.012	-22.975	-39.827	-17.930	-11.331	-22.302	-17.765	-27.902	-19.941	-28.748	-29.525	-29.931
react	**1104**	-10.797	-10.234	-29.743	-36.150	-11.981	-21.867	-46.289	-8.154	-13.584	-6.157	-99.778	-13.263	-22.203	-38.655	-16.868	-9.759	-21.544	-15.806	-26.453	-19.098	-27.519	-28.296	-28.569

state	soln	si_PbF2	si_Pbmetal	si_PbO:0.3H2O	si_Periclase	si_Phosgenite	si_Plattnerite	si_Portlandite	si_Pyrochroite	si_Pyrolusite	si_Retgersite	si_Rhodochrosite	si_Siderite	si_Smithsonite	si_Spinel	si_Tenorite	si_Thenardite	si_Thermonatrite	si_V(OH)3	si_V2O5	si_V3O5	si_V4O7	si_V6O13	si_VCl2
react	**1097**	-14.782	-20.648	-12.182	-16.836	-16.846	-31.602	-17.799	-12.656	-21.642	-9.350	-8.571	-8.068	-8.829	-15.445	-6.340	-11.530	-20.480	-11.214	-16.684	-21.193	-27.263	-27.673	-47.661
react	**1098**	-14.871	-20.656	-11.990	-16.641	-16.686	-31.210	-17.604	-12.431	-21.217	-9.176	-8.349	-7.815	-8.523	-14.566	-6.145	-11.222	-20.056	-11.214	-16.284	-21.093	-27.063	-26.872	-47.983
react	**1099**	-11.325	-20.950	-7.684	-11.475	-13.156	-22.304	-11.862	-8.850	-13.036	-8.901	-4.415	-2.653	-3.703	-4.445	-1.816	-10.037	-14.733	-13.457	-11.571	-25.523	-31.436	-21.932	-57.958
react	**1100**	-14.799	-20.769	-12.703	-16.713	-16.529	-32.523	-17.807	-13.173	-22.559	-8.057	-9.086	-8.027	-8.523	-16.737	-6.830	-9.312	-19.294	-11.214	-17.485	-21.394	-27.664	-29.274	-46.104
react	**1101**	-13.909	-20.869	-13.203	-16.906	-17.273	-33.423	-17.786	-12.949	-22.735	-7.460	-8.859	-9.258	-8.675	-19.390	-7.296	-8.664	-19.344	-11.215	-18.286	-21.596	-28.066	-30.877	-45.652
react	**1102**	-15.760	-20.155	-10.488	-15.628	-13.564	-28.709	-17.065	-12.293	-20.079	-10.590	-7.930	-5.244	-6.655	-9.087	-4.839	-12.922	-19.445	-11.214	-14.284	-20.594	-26.063	-22.873	-48.643
react	**1103**	-15.657	-20.640	-11.374	-16.031	-15.542	-29.994	-17.470	-12.997	-21.183	-9.865	-8.924	-6.742	-7.847	-11.294	-5.539	-11.456	-19.399	-11.214	-15.084	-20.793	-26.462	-24.472	-48.361
react	**1104**	-15.249	-20.653	-10.987	-15.640	-14.526	-29.207	-17.079	-12.607	-20.393	-9.790	-8.244	-6.131	-7.158	-10.160	-5.153	-10.839	-18.175	-11.214	-14.284	-20.594	-26.063	-22.873	-48.608

state	soln	si_VCl3	si_VF4	si_Vmetal	si_VO	si_VO(OH)2	si_VO2Cl	si_VOCl	si_VOCl2	si_VOSO4	si_Witherite	si_Zincite	si_Zincosite	si_Zn(BO2)2	si_Zn(OH)2	si_Zn(OH)2(am)	si_Zn(OH)2(beta)	si_Zn(OH)2(epsilon)	si_Zn(OH)2(gamma)	si_Zn2(OH)2SO4	si_Zn2(OH)3Cl	si_Zn3(AsO4)2:2.5H2O	si_Zn3O(SO4)2	si_Zn4(OH)6SO4
react	**1097**	-51.901	-61.690	-73.448	-26.979	-5.870	-20.145	-23.057	-30.043	-17.383	-9.824	-8.474	-14.124	-14.940	-9.340	-9.614	-8.894	-8.674	-8.874	-14.834	-17.753	-25.740	-36.442	-30.014
react	**1098**	-52.234	-62.153	-73.748	-27.079	-5.770	-20.056	-23.168	-30.165	-17.401	-9.637	-8.165	-13.934	-14.703	-9.031	-9.305	-8.585	-8.365	-8.565	-14.335	-17.246	-24.939	-35.753	-28.898
react	**1099**	-62.625	-63.614	-82.892	-31.623	-5.713	-20.415	-28.128	-35.540	-21.130	-4.427	-3.698	-13.252	-9.965	-4.564	-4.838	-4.118	-3.898	-4.098	-9.186	-11.027	-16.869	-29.921	-14.813
react	**1100**	-49.865	-60.880	-72.849	-26.780	-6.070	-19.867	-22.379	-28.886	-16.549	-9.931	-8.170	-12.786	-14.549	-9.036	-9.310	-8.590	-8.370	-8.570	-13.193	-16.467	-24.807	-33.462	-27.765
react	**1101**	-49.486	-58.302	-72.249	-26.580	-6.271	-20.141	-22.253	-28.834	-16.049	-10.290	-8.324	-12.240	-14.550	-9.190	-9.464	-8.744	-8.524	-8.724	-12.800	-16.648	-25.608	-32.524	-27.681
react	**1102**	-52.475	-66.433	-75.248	-27.579	-5.270	-19.136	-23.249	-29.825	-18.932	-8.320	-6.578	-14.377	-12.513	-7.444	-7.718	-6.998	-6.778	-6.978	-13.191	-14.152	-21.101	-35.051	-24.578
react	**1103**	-52.351	-64.656	-74.648	-27.379	-5.470	-19.495	-23.207	-29.943	-18.002	-9.214	-7.480	-14.149	-13.708	-8.346	-8.620	-7.900	-7.680	-7.880	-13.866	-15.915	-23.410	-35.499	-27.058
react	**1104**	-52.421	-64.413	-75.248	-27.579	-5.270	-19.119	-23.231	-29.790	-18.119	-8.567	-7.081	-14.067	-13.095	-7.947	-8.221	-7.501	-7.281	-7.481	-13.385	-15.141	-22.615	-34.936	-25.779

state	soln	si_Zn5(OH)8Cl2	si_ZnCl2	si_ZnCO3:1H2O	si_ZnF2	si_Znmetal	si_ZnO(active)	si_ZnSO4:1H2O
react	**1097**	-40.763	-20.754	-8.569	-19.626	-40.128	-8.328	-9.557
react	**1098**	-39.442	-20.667	-8.263	-19.599	-40.020	-8.020	-9.366
react	**1099**	-22.536	-21.631	-3.443	-15.890	-40.152	-3.552	-8.684
react	**1100**	-37.888	-19.092	-8.263	-18.818	-39.425	-8.025	-8.218
react	**1101**	-38.404	-18.994	-8.415	-17.582	-39.179	-8.179	-7.672
react	**1102**	-31.665	-19.240	-6.395	-20.402	-39.432	-6.432	-9.809
react	**1103**	-36.095	-20.060	-7.587	-20.316	-39.935	-7.335	-9.582
react	**1104**	-34.147	-19.708	-6.898	-19.895	-39.936	-6.936	-9.499

APPENDIX E5 GEOCHEMICAL MODELLING BY PHREEQC

E5 GEOCHEMICAL MODELLING BY PHREEQC

E5.1 SOURCE TERMS

This section presents the source terms use as input in the PHREEQC modelling.

Note that for each solution block, either Na^+ or Cl^- (both inert ions), were assigned to be charge balancing ions, as required for the modelling to converge.

E5.1.1 GROUNDWATER

Solutions source terms used for the PHREEQC modelling of K01 and K02 groundwater are provided in Table , Table and Table .

Note that for each solution block, either Na^+ or Cl^- (both inert ions), were assigned to be charge balancing ions, as required for the modelling to converge.

TABLE E5-1 K01 AND K02 (MEAN) PHREEQC SOURCE TERMS

SOLUTION 1 K01 average	**SOLUTION 1 K02 average**
units mg/L	units mg/L
temp 27.9	temp 27.9
pH 4.49	pH 5.57
Ca 498	Ca 514
Mg 156	Mg 179
Na 307	Na 662
K 37.1	K 20.6
Cl 98.3 charge	Cl 701 charge
F 0.368	F 0.287
S(6) 2388 as SO4	S(6) 2334 as SO4
C(4) 21.9 as CaCO3	C(4) 178 as CaCO3
N(5) 0.0116 as N	N(5) 0.0328 as N
P 0.121	P 0.733
Fe 30.7	Fe 22.9
Al 9.69	Al 0.439
Mn 3.26	Mn 3.03
Cu 0.0653	Cu 0.0146
Zn 0.898	Zn 0.371
Ni 0.106	Ni 0.0111
Co 0.0518	Co 0.00989

SOLUTION 1 K01 average	SOLUTION 1 K02 average
Pb 0.0127	Pb 0.00413
As 0.00058	As 0.000870
B 0.326	B 0.452
Cr 0.0018	Cr 0.00172
Li 0.235	Li 0.478
Ba 0.02571	Ba 0.0182

TABLE E5-2 K01 PHREEQC SOURCE TERMS (INDIVIDUAL SAMPLES)

SOLUTION 1 K01 03/08/2020
units mg/L
pH 4.77
temp 27.95
S(6) 2280.00 as SO4
C(4) 0.50 as CaCO3
F 0.2
Ca 480
Mg 142
Na 299
K 38
Cl 108.00 charge
N(5) 0.0050 as N
P 0.03
Fe 29.5
Al 6.97
Mn 3.23
Cu 0.055
Zn 1.34
Ni 0.129
Co 5.18e-05
Pb 0.003
As 0.0005
B 0.34
Cr 0.0005
Li 0.247
Ba 0.022
Cd 0.0002
Be 0.005
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 2 K01 02/09/2020
units mg/L
pH 6.66
temp 29.50
S(6) 2100.00 as SO4
C(4) 284.00 as CaCO3
F 0.5
Ca 493
Mg 149

Na 344
K 29
Cl 180.00 charge
N(5) 0.0200 as N
P 0.03
Fe 23.9
Al 0.01
Mn 4.06
Cu 0.007
Zn 0.016
Ni 0.025
Co 5.18e-05
Pb 0.0005
As 0.0005
B 0.33
Cr 0.0005
Li 0.288
Ba 0.045
Cd 5e-05
Be 0.0005
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 3 K01 14/10/2020
units mg/L
pH 6.56
temp 27.97
S(6) 2380.00 as SO4
C(4) 48.00 as CaCO3
F 0.4
Ca 508
Mg 148
Na 320
K 36
Cl 118.00 charge
N(5) 0.0050 as N
P 0.02
Fe 39.3
Al 0.16
Mn 3.59
Cu 0.027
Zn 1.01
Ni 0.067
Co 5.18e-05
Pb 0.005
As 0.002
B 0.32
Cr 0.0005
Li 0.26
Ba 0.028
Cd 0.0002
Be 0.002
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END

SOLUTION 4 K01 03/11/2020
units mg/L
pH 4.82
temp 27.00
S(6) 2430.00 as SO4
C(4) 3.00 as CaCO3
F 0.5
Ca 528
Mg 160
Na 308
K 39
Cl 104.00 charge
N(5) 0.0050 as N
P 0.03
Fe 33.7
Al 8.78
Mn 3.55
Cu 0.041
Zn 1.59
Ni 0.101
Co 5.18e-05
Pb 0.007
As 0.0005
B 0.32
Cr 0.001
Li 0.234
Ba 0.024
Cd 0.0003
Be 0.005
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 5 K01 10/12/2020
units mg/L
pH 6.42
temp 23.06
S(6) 2310.00 as SO4
C(4) 52.00 as CaCO3
F 0.3
Ca 485
Mg 173
Na 348
K 34
Cl 130.00 charge
N(5) 0.0050 as N
P 0.01
Fe 24.4
Al 0.03
Mn 3.68
Cu 0.018
Zn 0.005
Ni 0.05
Co 5.18e-05
Pb 0.0005
As 0.0005
B 0.39
Cr 0.0005
Li 0.256
Ba 0.036

Cd 5e-05
Be 0.001
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.002
END
SOLUTION 6 K01 06/01/2021
units mg/L
pH 4.62
temp 26.85
S(6) 2340.00 as SO4
C(4) 0.50 as CaCO3
F 0.5
Ca 525
Mg 163
Na 332
K 36
Cl 104.00 charge
N(5) 0.0050 as N
P 0.03
Fe 0.032
Al 0.0085
Mn 0.00351
Cu 3.9e-05
Zn 0.00179
Ni 0.000115
Co 5.18e-05
Pb 3e-06
As 5e-07
B 0.00032
Cr 1e-06
Li 0.000265
Ba 2.5e-05
Cd 2e-07
Be 6e-06
U 0
V 5e-06
Se 5e-06
Mo 5e-07
Sb 5e-07
END
SOLUTION 7 K01 10/02/2021
units mg/L
pH 5.39
temp 29.27
S(6) 2540.00 as SO4
C(4) 3.00 as CaCO3
F 0.3
Ca 557
Mg 166
Na 335
K 39
Cl 109.00 charge
N(5) 0.0050 as N
P 0.06
Fe 33.5
Al 0.1
Mn 3.71
Cu 0.032

Zn 0.008
Ni 0.092
Co 5.18e-05
Pb 0.0005
As 0.0005
B 0.38
Cr 0.0005
Li 0.27
Ba 0.038
Cd 5e-05
Be 0.002
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.002
END
SOLUTION 8 K01 17/03/2021
units mg/L
pH 4.20
temp 29.03
S(6) 2490.00 as SO4
C(4) 0.50 as CaCO3
F 0.05
Ca 494
Mg 152
Na 319
K 41
Cl 87.00 charge
N(5) 0.0050 as N
P 0.12
Fe 33.3
Al 13.8
Mn 3.38
Cu 0.056
Zn 1.29
Ni 0.131
Co 5.18e-05
Pb 0.02
As 0.0005
B 0.24
Cr 0.003
Li 0.211
Ba 0.018
Cd 0.0005
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 9 K01 06/04/2021
units mg/L
pH 5.86
temp 27.37
S(6) 2460.00 as SO4
C(4) 22.00 as CaCO3
F 0.3
Ca 508
Mg 162

```
 Na 338
 K 36
 Cl 108.00       charge
 N(5) 0.0100 as N
 P 0.2
 Fe 42.9
 Al 1.07
 Mn 4.32
 Cu 0.025
 Zn 0.053
 Ni 0.068
 Co 5.18e-05
 Pb 0.0005
 As 0.0005
 B 0.39
 Cr 0.0005
 Li 0.289
 Ba 0.026
 Cd 5e-05
 Be 0.004
 U 0.0005
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 10 K01 11/05/2021
 units mg/L
 pH 6.41
 temp 28.25
 S(6) 2280.00 as SO4
 C(4) 100.00 as CaCO3
 F 0.3
 Ca 477
 Mg 150
 Na 318
 K 36
 Cl 115.00       charge
 N(5) 0.1100 as N
 P 0.95
 Fe 39.7
 Al 0.18
 Mn 4.03
 Cu 0.021
 Zn 0.028
 Ni 0.052
 Co 5.18e-05
 Pb 0.0005
 As 0.0005
 B 0.35
 Cr 0.0005
 Li 0.27
 Ba 0.026
 Cd 5e-05
 Be 0.002
 U 0.0005
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END
```

SOLUTION 11 K01 09/06/2021
units mg/L
pH 3.92
temp 27.94
S(6) 2370.00 as SO4
C(4) 0.50 as CaCO3
F 0.05
Ca 504
Mg 158
Na 324
K 43
Cl 90.00 charge
N(5) 0.0050 as N
P 0.1
Fe 31.1
Al 14.8
Mn 3.36
Cu 0.055
Zn 0.766
Ni 0.128
Co 5.18e-05
Pb 0.005
As 0.0005
B 0.42
Cr 0.0005
Li 0.32
Ba 0.017
Cd 0.0002
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 12 K01 07/07/2021
units mg/L
pH 3.94
temp 26.34
S(6) 2550.00 as SO4
C(4) 0.50 as CaCO3
F 0.05
Ca 502
Mg 144
Na 294 charge
K 39
Cl 82.00
N(5) 0.0050 as N
P 0.07
Fe 32.1
Al 13.9
Mn 3.32
Cu 0.054
Zn 1.86
Ni 0.131
Co 5.18e-05
Pb 0.021
As 0.0005
B 0.35
Cr 0.004
Li 0.271
Ba 0.027

Cd 0.0006
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 13 K01 04/08/2021
units mg/L
pH 4.36
temp 26.59
S(6) 2540.00 as SO4
C(4) 0.50 as CaCO3
F 0.05
Ca 516
Mg 147
Na 296 charge
K 40
Cl 94.00
N(5) 0.0050 as N
P 0.04
Fe 29.3
Al 14.4
Mn 3.29
Cu 0.055
Zn 1.57
Ni 0.128
Co 5.18e-05
Pb 0.004
As 0.001
B 0.32
Cr 0.004
Li 0.234
Ba 0.03
Cd 0.0006
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 14 K01 16/09/2021
units mg/L
pH 4.10
temp 26.82
S(6) 2380.00 as SO4
C(4) 0.50 as CaCO3
F 0.05
Ca 517
Mg 160
Na 326
K 44
Cl 90.00 charge
N(5) 0.0200 as N
P 0.07
Fe 32.4
Al 13.7
Mn 3.34
Cu 0.047

```
 Zn 0.681
 Ni 0.117
 Co 5.18e-05
 Pb 0.01
 As 0.0005
 B 0.28
 Cr 0.001
 Li 0.165
 Ba 0.015
 Cd 0.0003
 Be 0.005
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 15 K01 07/12/2021
 units mg/L
 pH 3.79
 temp 28.06
 S(6) 2390.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.1
 Ca 503
 Mg 152
 Na 310
 K 37
 Cl 95.00         charge
 N(5) 0.0050 as N
 P 0.04
 Fe 30.4
 Al 14.1
 Mn 3.03
 Cu 0.054
 Zn 1.7
 Ni 0.15
 Co 0.049
 Pb 0.025
 As 0.0005
 B 0.32
 Cr 0.002
 Li 0.236
 Ba 0.016
 Cd 0.0004
 Be 0.006
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 16 K01 03/03/2022
 units mg/L
 pH 4.03
 temp 28.69
 S(6) 2320.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.2
 Ca 449
 Mg 154
```

Na 313
K 39
Cl 81.00 charge
N(5) 0.0050 as N
P 0.29
Fe 28.8
Al 15.6
Mn 3.01
Cu 0.0005
Zn 0.799
Ni 0.132
Co 0.054
Pb 0.008
As 0.0005
B 0.39
Cr 0.001
Li 0.233
Ba 0.016
Cd 0.0003
Be 0.008
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 17 K01 31/05/2022
units mg/L
pH 3.81
temp 30.17
S(6) 2520.00 as SO4
C(4) 0.50 as CaCO3
F 2
Ca 448
Mg 148
Na 293 charge
K 35
Cl 75.00
N(5) 0.0050 as N
P 0.3
Fe 28.3
Al 15.1
Mn 2.81
Cu 0.009
Zn 0.649
Ni 0.124
Co 0.054
Pb 0.006
As 0.0005
B 0.36
Cr 0.002
Li 0.222
Ba 0.021
Cd 0.0003
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END

SOLUTION 18 K01 30/08/2022
units mg/L
pH 3.69
temp 29.21
S(6) 2430.00 as SO4
C(4) 0.50 as CaCO3
F 2
Ca 501
Mg 169
Na 302
K 38
Cl 86.00 charge
N(5) 0.0050 as N
P 0.06
Fe 25
Al 13
Mn 3.43
Cu 0.158
Zn 1.3
Ni 0.136
Co 0.054
Pb 0.066
As 0.0005
B 0.33
Cr 0.004
Li 0.227
Ba 0.015
Cd 0.0003
Be 0.007
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 19 K01 02/02/2023
units mg/L
pH 4.51
temp 29.53
S(6) 2610.00 as SO4
C(4) 3.00 as CaCO3
F 0.2
Ca 510
Mg 153
Na 284 charge
K 38
Cl 69.00
N(5) 0.0050 as N
P 0.08
Fe 49.5
Al 14.7
Mn 3.45
Cu 0.004
Zn 1.01
Ni 0.144
Co 0.061
Pb 0.033
As 0.0005
B 0.42
Cr 0.004
Li 0.246
Ba 0.072

```
 Cd 0.0003
 Be 0.008
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 20 K01 27/03/2023
 units mg/L
 pH 3.81
 temp 29.95
 S(6) 2420.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.1
 Ca 474
 Mg 154
 Na 289
 K 36
 Cl 78.00        charge
 N(5) 0.0050 as N
 P 0.02
 Fe 31.6
 Al 13.3
 Mn 3.12
 Cu 0.623
 Zn 1.74
 Ni 0.122
 Co 0.051
 Pb 0.062
 As 0.0005
 B 0.31
 Cr 0.003
 Li 0.208
 Ba 0.012
 Cd 0.0004
 Be 0.005
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 21 K01 26/06/2023
 units mg/L
 pH 4.18
 temp 27.93
 S(6) 2460.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.05
 Ca 508
 Mg 161
 Na 286
 K 37
 Cl 72.00        charge
 N(5) 0.0050 as N
 P 0.03
 Fe 32.8
 Al 14.9
 Mn 3.4
 Cu 0.232
```

```
 Zn 1.87
 Ni 0.125
 Co 0.05
 Pb 0.002
 As 0.001
 B 0.34
 Cr 0.004
 Li 0.21
 Ba 0.061
 Cd 0.0008
 Be 0.007
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 22 K01 07/09/2023
 units mg/L
 pH 3.40
 temp 26.57
 S(6) 1850.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.5
 Ca 460
 Mg 151
 Na 260
 K 34
 Cl 84.00        charge
 N(5) 0.0050 as N
 P 0.09
 Fe 29.9
 Al 14.6
 Mn 3.23
 Cu 0.026
 Zn 0.767
 Ni 0.125
 Co 0.052
 Pb 0.016
 As 0.0005
 B 0.3
 Cr 0.002
 Li 0.25
 Ba 0.013
 Cd 0.0004
 Be 0.006
 U 0.001
 V 0.005
 Se 0.005
 Mo 0.0005
 Sb 0.0005
END

SOLUTION 23 K01 15/12/2023
 units mg/L
 pH 4.02
 temp 26.95
 S(6) 2520.00 as SO4
 C(4) 0.50 as CaCO3
 F 0.1
 Ca 544
 Mg 172
```

Na 277
K 36
Cl 91.00 charge
N(5) 0.0050 as N
P 0.14
Fe 28.9
Al 14.2
Mn 3.09
Cu 0.009
Zn 0.862
Ni 0.125
Co 0.05
Pb 0.008
As 0.0005
B 0.3
Cr 0.002
Li 0.257
Ba 0.014
Cd 0.0004
Be 0.006
U 0.001
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END
SOLUTION 24 K01 03/06/2025
units mg/L
pH 4.59
temp 29.30
S(6) 2180.00 as SO4
C(4) 4.00 as CaCO3
F 0.2
Ca 464
Mg 146
Na 240
K 30
Cl 110.00 charge
N(5) 0.0050 as N
P 0.09
Fe 28.7
Al 10.8
Mn 3
Cu 0.01
Zn 0.918
Ni 0.109
Co 0.043
Pb 0.009
As 0.0005
B 0.31
Cr 0.003
Li 0.235
Ba 0.025
Cd 0.0002
Be 0.005
U 0.0005
V 0.005
Se 0.005
Mo 0.0005
Sb 0.0005
END

TABLE E5-3 K02 PHREEQC SOURCE TERMS

SOLUTION 1 K02 19/05/2020
units mg/L
pH 6.05
S(6) 2630 as SO4
F 0.3
N(5) 0.02
N(-3) 3.85
Al 0.07
Fe 26
Na 1 charge
Mn 3.75
Cu 0.002
Zn 0.068
Ni 0.013
B 0.44
END
SOLUTION 2 K02 03/08/2020
units mg/L
pH 6.01
temp 26.82
S(6) 2280 as SO4
C(4) 180 as CaCO3
Ca 542
Mg 189
Na 688
K 21
Cl 836 charge
F 0.2
Al 0.03
Fe 26.7
Mn 3.34
Cu 0.001
Zn 1.22
Ni 0.02
Ba 0.018
B 0.45
Li 0.552
END
SOLUTION 3 K02 02/09/2020
units mg/L
pH 6.07
temp 28.03
S(6) 2510 as SO4
C(4) 157 as CaCO3
Ca 584
Mg 195
Na 677
K 21
Cl 825 charge
F 0.4
N(5) 0.02
N(3) 0.37
Fe 2.81
Mn 3.88
Cu 0.003
Zn 0.551
Ni 0.017
Ba 0.022
B 0.49

Li 0.589
END
SOLUTION 4 K02 14/10/2020
units mg/L
pH 6.04
temp 26.79
S(6) 2370 as SO4
C(4) 191 as CaCO3
Ca 537
Mg 178
Na 670
K 21
Cl 738 charge
F 0.3
N(5) 0.04
N(3) 0.03
Al 0.01
Fe 27.9
Mn 3.15
Zn 0.009
Ba 0.01
B 0.48
Li 0.557
END
SOLUTION 5 K02 03/11/2020
units mg/L
pH 5.98
temp 29.55
S(6) 2360 as SO4
C(4) 192 as CaCO3
Ca 550
Mg 195
Na 676
K 24
Cl 751 charge
F 0.3
Al 0.07
Fe 27.3
Mn 3.23
Zn 0.887
Ni 0.006
Pb 0.002
Ba 0.013
B 0.45
Li 0.485
END
SOLUTION 6 K02 10/12/2020
units mg/L
pH 6.13
temp 23.85
S(6) 2310 as SO4
C(4) 187 as CaCO3
Ca 496
Mg 193
Na 679
K 21
Cl 710 charge
F 0.3
N(5) 0.02
N(3) 0.02

Al 0.05
Fe 27.1
Mn 2.9
Cu 0.002
Zn 0.014
Ni 0.007
Ba 0.019
B 0.54
Cr 0.001
Li 0.493
END
SOLUTION 7 K02 06/01/2021
units mg/L
pH 5.96
temp 27.34
S(6) 2300 as SO4
C(4) 177 as CaCO3
Ca 520
Mg 188
Na 693
K 20
Cl 720 charge
F 0.3
Al 8e-05
Fe 0.0246
Mn 0.00313
Zn 0.000901
Ni 9e-06
Ba 1.2e-05
B 0.00045
Li 0.000562
END
SOLUTION 8 K02 10/02/2021
units mg/L
pH 6.17
temp 29.84
S(6) 2460 as SO4
C(4) 206 as CaCO3
Ca 554
Mg 188
Na 678
K 22
Cl 675 charge
F 0.3
N(5) 0.03
Al 0.05
Fe 30.9
Mn 3.13
Cu 0.004
Ni 0.017
Ba 0.021
B 0.52
Cr 0.004
Li 0.477
END
SOLUTION 9 K02 17/03/2021
units mg/L
pH 5.84
temp 32.07
S(6) 2390 as SO4

C(4) 174 as CaCO3
Ca 514
Mg 181
Na 689
K 21
Cl 730 charge
F 0.2
Al 0.11
Fe 26.4
Mn 3.12
Zn 0.513
Ni 0.004
Pb 0.002
Ba 0.012
B 0.34
Li 0.321
END
SOLUTION 10 K02 11/05/2021
units mg/L
pH 6.22
temp 26.38
S(6) 2320 as SO4
C(4) 194 as CaCO3
Ca 521
Mg 180
Na 645
K 21
Cl 706 charge
F 0.3
N(5) 0.02
Al 0.02
Fe 18.2
Mn 3.12
Zn 0.021
Ni 0.004
Ba 0.013
B 0.47
Li 0.532
END
SOLUTION 11 K02 09/06/2021
units mg/L
pH 6.46
temp 27.79
S(6) 2290 as SO4
C(4) 184 as CaCO3
Ca 526
Mg 185
Na 710
K 22
Cl 688 charge
F 0.3
Al 0.06
Fe 26.5
Mn 3.18
Cu 0.001
Zn 0.135
Ni 0.003
Ba 0.013
B 0.59
Li 0.625
END

SOLUTION 12 K02 07/07/2021
units mg/L
pH 6.49
temp 25.23
S(6) 2380 as SO4
C(4) 168 as CaCO3
Ca 511
Mg 168
Na 652
K 21
Cl 659 charge
F 0.2
Al 0.02
Fe 13.2
Mn 3.14
Zn 0.05
Ni 0.011
Ba 0.018
B 0.5
Cr 0.006
Li 0.49
END
SOLUTION 13 K02 04/08/2021
units mg/L
pH 6.96
temp 26.14
S(6) 2440 as SO4
C(4) 152 as CaCO3
Ca 521
Mg 172
Na 646
K 20
Cl 686 charge
F 0.3
Al 0.03
Fe 23.5
Mn 3
Zn 0.374
Ni 0.004
Ba 0.011
B 0.51
Li 0.526
END
SOLUTION 14 K02 16/09/2021
units mg/L
pH 6.77
temp 28.87
S(6) 2290 as SO4
C(4) 180 as CaCO3
Ca 549
Mg 194
Na 739
K 25
Cl 713 charge
F 0.3
Al 0.04
Fe 7.31
Mn 3.11
Cu 0.002
Zn 0.146

Ni 0.005
Ba 0.012
B 0.4
Li 0.319
END
SOLUTION 15 K02 07/12/2021
units mg/L
pH 6.04
temp 28.99
S(6) 2300 as SO4
C(4) 180 as CaCO3
Ca 523
Mg 178
Na 671
K 20
Cl 744 charge
F 0.2
Al 0.01
Fe 0.1
Mn 3.11
Cu 0.013
Zn 0.655
Ni 0.036
Ba 0.01
B 0.48
Li 0.474
END
SOLUTION 16 K02 03/03/2022
units mg/L
pH 6.43
temp 27.63
S(6) 2200 as SO4
C(4) 179 as CaCO3
Ca 504
Mg 176
Na 682
K 20
Cl 703 charge
F 0.3
N(3) 0.01
Al 0.04
Fe 35.9
Mn 3.26
Cu 0.048
Zn 0.398
Ni 0.018
Pb 0.018
Ba 0.095
B 0.52
Cr 0.003
Li 0.524
END
SOLUTION 17 K02 31/05/2022
units mg/L
pH 6.46
temp 29.15
S(6) 2420 as SO4
C(4) 159 as CaCO3
Ca 399
Mg 145

Na 542
K 16
Cl 670 charge
F 0.3
Al 4.78
Fe 44.9
Mn 3.17
Cu 0.086
Zn 1.1
Ni 0.048
Pb 0.011
Ba 0.023
B 0.38
Cr 0.01
Li 0.427
U 0.002
V 0.02
END
SOLUTION 18 K02 30/08/2022
units mg/L
pH 6.13
temp 28.21
S(6) 2260 as SO4
C(4) 165 as CaCO3
Ca 475
Mg 173
Na 618
K 20
Cl 657 charge
F 0.3
N(5) 0.01
N(3) 0.07
Al 1.29
Fe 31.3
Mn 3.11
Cu 0.089
Zn 0.663
Ni 0.023
Pb 0.025
Ba 0.02
B 0.45
Cr 0.004
Li 0.603
END
SOLUTION 19 K02 02/02/2023
units mg/L
pH 5.97
temp 28.92
S(6) 2500 as SO4
C(4) 176 as CaCO3
Ca 504
Mg 168
Na 640
K 20
Cl 628 charge
F 0.3
Al 2.9
Fe 37
Mn 2.95
Cu 0.078
Zn 0.465

Ni 0.008
Pb 0.026
Ba 0.025
B 0.62
Cr 0.004
Li 0.586
END
SOLUTION 20 K02 27/03/2023
units mg/L
pH 6.08
temp 27.84
S(6) 2320 as SO4
C(4) 188 as CaCO3
Ca 479
Mg 169
Na 652
K 18
Cl 648 charge
F 0.3
Al 0.07
Fe 23
Mn 2.8
Zn 0.362
Ni 0.003
Pb 0.002
Ba 0.01
B 0.41
Li 0.428
END
SOLUTION 21 K02 26/06/2023
units mg/L
pH 6.63
S(6) 2340 as SO4
C(4) 162 as CaCO3
Ca 500
Mg 174
Na 643
K 19
Cl 617 charge
F 0.2
Al 0.13
Fe 23.2
Mn 2.94
Zn 0.468
Ni 0.004
Ba 0.012
B 0.45
Li 0.421
END
SOLUTION 22 K02 07/09/2023
units mg/L
pH 6.20
temp 26.17
S(6) 1800 as SO4
C(4) 157 as CaCO3
Ca 487
Mg 178
Na 643
K 20
Cl 629 charge

F 0.3
Al 0.12
Fe 21.7
Mn 3.08
Zn 0.169
Ni 0.002
Ba 0.012
B 0.44
Li 0.519
END
SOLUTION 23 K02 03/06/2025
units mg/L
pH 6.01
temp 29.20
S(6) 2210 as SO4
C(4) 201 as CaCO3
Ca 508
Mg 174
Na 638
K 19
Cl 683 charge
F 0.4
N(-3) 3.43
Al 0.18
Fe 25
Mn 3.16
Cu 0.003
Zn 0.252
Ni 0.002
Pb 0.002
Ba 0.012
B 0.46
Li 0.571
END

E5.2 KTP ASLP LEACHATE

Solutions source terms used for the PHREEQC modelling of Kerale Test Pit (KTP) porewater samples are provided in Table 4. Results from the ALSP tests from ERM (2026) were used as a model indicator of pore water quality of the soils in the project area.

TABLE E5-4 KTP PHREEQC SOURCE TERMS

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
Unit	-	*mg/L*																
KTP01-1	4.7	4	3	0.1	1	1	4	2	1	3.5	0.255	0.001	0.003	0.002	0.002	0.265	0.38	1.79
KTP01-2	4.8	7	2	0.1	1	1	6	1	1	2.83	0.265	0.001	0.003	0.002	0.001	0.225	0.43	1.02
KTP02-1	5	2	2	0.1	1	1	3	1	1	1.41	0.162	0.011	0.001	0.001	0.017	0.152	0.23	0.97
KTP02-2	5.1	2	2	0.1	1	1	3	1	1	2.4	0.161	0.002	0.001	0.001	0.017	0.121	0.24	1.14
KTP02-3	4.7	5	2	0.1	1	1	4	2	5	2.64	0.232	0.001	0.003	0.001	0.003	0.26	0.46	3.59
KTP02-4	4.5	4	3	0.1	1	1	5	2	3	1.38	0.225	0.001	0.004	0.005	0.003	0.195	0.33	1.93
KTP03-1	9.1	2	22	0.2	7	1	3	1	1	0.46	0.22	0.001	0.001	0.001	0.011	0.027	0.16	0.39
KTP03-2	9.1	3	25	0.3	9	1	2	1	1	0.4	0.221	0.001	0.001	0.001	0.013	0.021	0.15	0.46
KTP03-3	8.8	70	18	0.5	32	1	3	1	1	0.17	0.248	0.001	0.001	0.001	0.001	0.02	0.2	0.08
KTP04-1	8.1	73	16	0.2	31	4	3	1	1	0.54	0.278	0.003	0.001	0.001	0.002	0.02	0.13	0.37
KTP04-2	7.4	127	6	0.3	7	27	9	1	1	0.9	0.414	0.001	0.001	0.001	0.004	0.048	0.2	0.89
KTP04-3	4	1540	1	0.1	593	85	15	3	1	0.67	0.59	0.002	0.001	0.004	0.11	0.832	0.52	0.05
KTP04-4	7.8	1520	42	0.6	573	82	9	1	1	0.02	0.284	0.001	0.001	0.004	0.001	0.186	0.19	0.05
KTP06-1	7.2	2	4	0.1	1	1	3	2	1	3.85	0.226	0.002	0.004	0.001	0.007	0.189	0.36	3.99

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP06-2	8.3	13	63	0.7	28	1	2	1	1	1.55	0.193	0.001	0.001	0.001	0.001	0.043	0.14	0.25
KTP06-3	6.3	3	4	0.1	1	1	3	1	1	1.94	0.187	0.001	0.002	0.001	0.005	0.109	0.27	1.34
KTP07-1	4.9	3	2	0.1	1	1	3	1	1	1.56	0.23	0.001	0.002	0.001	0.002	0.188	0.35	1.4
KTP07-2	4.9	3	3	0.1	1	1	5	1	1	1.58	0.278	0.001	0.003	0.002	0.001	0.216	0.36	1.51
KTP07-3-ave	4.45	3.5	1	0.1	1	1	4.5	1	7.5	0.375	0.332	0.001	0.001	0.002	0.012	0.074	0.195	0.24
KTP10-1	5.2	1	2	0.1	1	1	2	1	1	1.72	0.089	0.001	0.001	0.001	0.001	0.089	0.21	0.48
KTP10-2	5.3	1	2	0.1	1	1	2	1	1	0.95	0.057	0.001	0.001	0.001	0.001	0.038	0.2	0.86
KTP11-1	5.6	1	2	0.1	1	1	2	1	1	1.19	0.107	0.001	0.001	0.001	0.004	0.077	0.22	0.81
KTP11-2	4.9	3	2	0.1	1	1	5	1	3	2.01	0.253	0.002	0.003	0.002	0.001	0.173	0.43	1.28
KTP11-3	4.6	4	1	0.1	1	1	7	1	9	0.53	0.219	0.001	0.001	0.003	0.003	0.048	0.26	0.19
KTP11-4-ave	4.6	8.5	1	0.1	1	1	22.5	1	30	0.53	0.2905	0.001	0.001	0.0075	0.001	0.11	0.215	0.16
KTP11-5	4.4	17	1	0.1	1	2	34	1	42	0.01	0.504	0.001	0.001	0.01	0.003	0.574	0.28	0.05
KTP12-1	4.7	4	2	0.1	1	1	3	1	2	0.3	0.062	0.001	0.001	0.003	0.001	0.046	0.24	0.27
KTP12-2	4.2	14	1	0.1	1	3	14	1	21	0.24	0.348	0.001	0.001	0.007	0.006	0.342	0.18	0.05
KTP12-3	4.3	10	1	0.1	1	2	11	1	16	0.12	0.325	0.001	0.001	0.005	0.004	0.225	0.11	0.05
KTP14-1	5.5	2	3	0.1	1	1	3	1	1	2.44	0.161	0.001	0.003	0.001	0.004	0.186	0.36	2.05

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP14-2	5	4	3	0.1	1	1	4	2	1	3.86	0.26	0.001	0.004	0.002	0.004	0.303	0.45	2.68
KTP14-3	5.8	4	3	0.1	1	1	5	1	1	2.05	0.23	0.001	0.005	0.001	0.001	0.181	0.37	3.41
KTP15-1	5.1	1	2	0.1	1	1	3	1	1	2.99	0.125	0.002	0.002	0.001	0.002	0.103	0.25	1.89
KTP15-2	5.3	1	3	0.1	1	1	2	1	1	3.86	0.118	0.002	0.003	0.001	0.002	0.102	0.22	3.14
KTP15-3	4.7	3	2	0.1	1	1	3	1	1	2.67	0.141	0.002	0.002	0.001	0.001	0.129	0.33	3.2
KTP15-4	4.9	2	2	0.1	1	1	4	3	1	5.88	0.335	0.003	0.007	0.002	0.002	0.422	0.53	3.69
KTP15-5	4.9	2	2	0.1	1	1	5	2	4	3.16	0.268	0.001	0.003	0.003	0.001	0.259	0.43	1.61
KTP16-1	6.5	4	8	0.2	3	1	6	2	1	10.6	0.886	0.005	0.009	0.006	0.041	0.409	0.57	6.48
KTP16-2	5.9	6	5	0.2	3	1	9	3	1	13.9	1.29	0.009	0.012	0.008	0.027	0.66	0.83	10.6
KTP16-3	5.3	16	4	0.2	1	1	13	2	2	4.49	0.499	0.004	0.008	0.003	0.002	0.347	0.59	3.75
KTP17-1	6	1	4	0.1	1	1	3	1	1	2.21	0.173	0.001	0.002	0.001	0.036	0.092	0.27	2.3
KTP17-2	6.8	1	4	0.1	1	1	3	1	1	2.41	0.208	0.002	0.003	0.001	0.028	0.08	0.24	3.46
KTP17-3	4.9	8	2	0.1	1	1	2	1	1	0.41	0.16	0.001	0.001	0.001	0.004	0.045	0.2	0.44
KTP17-4	4.6	7	2	0.1	1	1	3	1	1	0.04	0.172	0.001	0.001	0.001	0.007	0.073	0.11	0.05
KTP17-5	4.6	5	2	0.1	1	1	3	1	1	0.03	0.187	0.001	0.001	0.001	0.001	0.076	0.15	0.05
KTP18-1	5.5	2	3	0.1	1	1	2	1	1	1.54	0.127	0.001	0.002	0.001	0.024	0.087	0.25	1.16

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP18-2	6.8	8	6	0.3	1	1	6	1	1	2.91	0.375	0.001	0.005	0.002	0.006	0.092	0.37	1.47
KTP18-3	7.7	5	12	0.4	2	1	7	1	1	0.74	0.237	0.001	0.002	0.001	0.003	0.036	0.23	0.72
KTP19-1	5.5	1	2	0.1	1	1	3	1	1	3.9	0.161	0.004	0.004	0.002	0.065	0.115	0.27	4.1
KTP19-2	6.4	13	4	0.2	2	1	8	3	5	10.6	0.615	0.01	0.014	0.008	0.023	0.324	0.45	14.8
KTP19-3	6.2	20	3	0.1	2	1	11	2	5	6.86	0.485	0.007	0.01	0.006	0.014	0.296	0.4	10.7
KTP19-4-ave	5.55	17	3	0.1	1	1	10.5	2	1	7.525	0.3665	0.0045	0.006	0.004	0.0175	0.268	0.375	7.775
KTP19-5	5.3	17	3	0.1	1	1	10	1	1	2.56	0.252	0.003	0.003	0.004	0.004	0.19	0.4	2.65
KTP20-1	8.4	20	29	0.6	14	5	63	1	102	0.36	0.423	0.001	0.001	0.001	0.001	0.035	0.22	0.14
KTP20-2	9.5	15	34	0.6	4	1	40	1	36	1.25	0.452	0.001	0.001	0.001	0.002	0.04	0.29	0.78
KTP20-3	10	12	46	0.5	1	1	38	1	19	1.31	0.332	0.002	0.002	0.002	0.006	0.045	0.26	0.94
KTP21-1	5.3	1	2	0.1	1	1	2	1	1	2.42	0.113	0.003	0.002	0.001	0.023	0.082	0.19	3.54
KTP21-2	4.8	4	2	0.1	1	1	3	2	1	3.49	0.257	0.001	0.004	0.001	0.011	0.172	0.27	5.32
KTP21-3	4.6	4	2	0.1	1	1	4	3	1	4.1	0.338	0.002	0.006	0.002	0.002	0.281	0.35	2.42
KTP22-1	7.2	57	2	0.1	13	5	4	1	2	0.12	0.214	0.001	0.001	0.002	0.221	0.102	0.11	0.05
KTP22-2	6.5	26	2	0.1	7	1	3	1	1	0.19	0.208	0.001	0.001	0.001	0.744	0.071	0.11	0.09
KTP22-3	5.2	31	2	0.1	5	4	4	1	1	0.3	0.244	0.001	0.001	0.002	0.479	0.063	0.16	0.28

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP22-4	4.5	166	2	0.1	44	13	6	1	1	0.16	0.37	0.001	0.001	0.002	1.88	0.182	0.18	0.12
KTP23-1	6.7	1	4	0.2	1	1	3	1	1	3.28	0.165	0.001	0.002	0.002	0.029	0.072	0.23	3.55
KTP23-2	7.4	2	5	0.2	1	1	3	1	1	3.51	0.286	0.002	0.003	0.001	0.052	0.112	0.25	3.65
KTP23-3	8.5	14	8	1.1	2	1	16	3	2	10.6	0.818	0.005	0.009	0.004	0.022	0.279	0.63	10.8
KTP23-4	9.3	8	30	0.4	3	1	14	1	1	1.33	0.297	0.001	0.001	0.002	0.007	0.042	0.22	0.91
KTP23-5	9.6	16	33	0.4	1	1	24	1	2	1.04	0.225	0.096	0.001	0.006	0.026	0.078	0.17	0.79
KTP24-1-ave	4.65	2.5	2	0.1	1	1	2.5	1	1	1.67	0.072	0.001	0.001	0.001	0.0085	0.095	0.34	1.28
KTP24-2	4.4	8	1	0.1	1	1	3	1	1	1.11	0.152	0.001	0.001	0.001	0.054	0.035	0.21	0.49
KTP24-3	4.5	6	1	0.1	1	1	3	1	1	0.48	0.094	0.001	0.001	0.001	0.012	0.029	0.18	0.14
KTP25-1	8.6	2	26	0.4	8	1	3	1	1	0.79	0.28	0.001	0.001	0.001	0.009	0.035	0.23	0.38
KTP25-2	9.2	10	22	0.3	9	1	4	1	1	0.57	0.287	0.001	0.001	0.001	0.008	0.028	0.22	0.33
KTP25-3	9.4	7	22	0.4	9	1	4	1	1	0.47	0.305	0.001	0.001	0.001	0.002	0.024	0.21	0.28
KTP26-1	9.1	33	36	0.9	6	3	25	1	3	2.39	0.54	0.001	0.001	0.002	0.004	0.074	0.35	0.92
KTP26-2	9.1	57	32	1.2	6	3	35	1	5	0.77	0.432	0.004	0.001	0.001	0.001	0.114	0.86	0.18
KTP26-3	9.6	28	35	0.9	3	1	31	1	4	2.53	0.43	0.004	0.002	0.003	0.005	0.144	0.61	1.31
KTP26-4	9.5	32	29	0.7	1	1	35	1	6	1.58	0.378	0.001	0.002	0.003	0.01	0.077	0.35	1.34

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP27-1-ave	4.75	3	1	0.1	1	1	3	1	1	1.305	0.11	0.001	0.001	0.001	0.0015	0.0875	0.26	1.17
KTP27-2	4.8	6	1	0.1	1	1	5	1	1	1.03	0.13	0.001	0.002	0.005	0.001	0.09	0.26	0.57
KTP30-1	5.3	1	2	0.1	1	1	1	1	1	1.07	0.065	0.001	0.001	0.001	0.001	0.053	0.19	0.4
KTP30-2	5.5	1	2	0.1	1	1	2	1	1	1.87	0.179	0.001	0.002	0.001	0.001	0.148	0.32	0.93
KTP31-1	5	2	2	0.1	1	1	3	1	1	1.45	0.155	0.001	0.001	0.001	0.002	0.11	0.28	0.8
KTP31-2	5.3	2	1	0.1	1	1	2	1	1	1.17	0.098	0.001	0.001	0.001	0.001	0.065	0.2	1.05
KTP31-3-ave	5.2	3	2.5	0.1	1	1	3.5	2	1	3.54	0.2865	0.001	0.003	0.0015	0.002	0.206	0.39	4.11
KTP32-1	6.2	2	3	0.1	1	1	3	2	1	6.63	0.314	0.004	0.007	0.003	0.032	0.18	0.27	7.44
KTP32-2	5.6	2	2	0.1	1	1	3	1	1	3.06	0.203	0.002	0.003	0.002	0.012	0.128	0.31	1.82
KTP32-3	5.6	3	2	0.1	1	1	3	1	1	2.84	0.246	0.002	0.003	0.002	0.01	0.142	0.31	1.9
KTP32-4	5.7	6	2	0.1	1	1	6	1	1	1.88	0.222	0.002	0.002	0.002	0.004	0.102	0.32	1.26
KTP32-5	4.8	66	1	0.1	13	4	15	1	6	0.53	0.422	0.002	0.001	0.002	0.093	0.068	0.21	0.18
KTP32-6	6.6	40	3	0.1	9	2	15	1	7	1.26	0.426	0.002	0.002	0.001	0.022	0.074	0.21	1.38
KTP33-1	6.2	3	3	0.2	1	1	4	1	1	1.68	0.252	0.001	0.002	0.001	0.001	0.141	0.38	0.93
KTP34-1	5	3	2	0.1	1	1	3	1	1	0.81	0.118	0.001	0.001	0.001	0.002	0.079	0.29	0.43
KTP34-2	4.9	4	2	0.1	1	1	4	1	1	0.75	0.115	0.001	0.001	0.003	0.002	0.037	0.31	0.27

Sample	pH	SO4	C(4) as CaCO3	F	Ca	Mg	Na	K	Cl	Al	Ba	Cu	Pb	Li	Mn	Zn	B	Fe
KTP34-3	4.5	24	1	0.1	5	2	5	1	1	0.09	0.276	0.001	0.001	0.006	0.041	0.111	0.15	0.05
KTP34-4-ave	4.7	8	1.5	0.1	1	1	4	1	1	0.67	0.1485	0.001	0.001	0.0045	0.0035	0.0405	0.23	0.24
KTP34-5	4.6	16	1	0.1	3	1	5	1	1	0.41	0.195	0.001	0.001	0.004	0.014	0.035	0.19	0.1
KTP34-6-ave	4.7	19.5	1	0.1	3	1	6.5	1	1	0.485	0.1915	0.001	0.001	0.005	0.015	0.0455	0.175	0.115
KTP35-1	7	172	13	0.2	58	5	8	1	3	0.94	0.423	0.001	0.001	0.003	0.002	0.047	0.24	0.71
KTP35-2	4.4	80	1	0.1	9	4	32	1	16	0.64	0.43	0.001	0.001	0.01	0.013	0.215	0.21	0.34
KTP35-3-ave	4.2	180.5	1	0.1	28	7.5	49	2	22	0.325	0.5145	0.001	0.001	0.0155	0.0645	0.4465	0.25	0.06
KTP36-1	5.2	2	2	0.1	1	1	3	1	1	3.09	0.207	0.002	0.003	0.001	0.002	0.17	0.35	2.16
KTP36-2	5	10	1	0.1	1	1	7	1	2	1.22	0.129	0.001	0.001	0.001	0.001	0.054	0.25	0.34
KTP36-3	5.2	12	2	0.1	1	1	13	1	9	1.13	0.119	0.001	0.001	0.001	0.001	0.055	0.32	0.29

E5.3 INTERPRETIVE RESULTS

This section summarises and interprets the key results from the PHREEQC modelling. Raw data are provided in Appendix E4

E5.3.1 GROUNDWATER

Groundwater geochemical modelling was undertaken using monitoring data from Collinsville bores adjacent to the Kerale Dam Catchment. It was used to assess which mineral phases are likely to precipitate as groundwater chemistry evolves over time, and to identify the dominant geochemical reactions controlling dissolved metal and ion concentrations.

E5.3.1.1 K01

Single-step equilibration of the average K01 solution against the full mineral phase assemblage resulted in precipitation of three phases:

- Alunite ($KAl_3(SO_4)_2(OH)_6$):
  - The dominant precipitating phase (SI>0). Its precipitation consumes dissolved Al, K and SO_4 and releases 6 moles of H^+ per mole precipitated, driving pH from 4.49 to 3.78.
- Iron phases:
  - No iron oxides or oxyhydroxides precipitated (SI<0).
  - Fe(III) activity and solution pH were insufficient to drive precipitation of hematite, goethite or ferrihydrite, while jarosite phases also remained undersaturated.
- Gypsum was near equilibrium with SI = -0.06 and did not precipitate.
- All carbonate phases were strongly undersaturated (SI<<0), consistent with the low pH and negligible alkalinity of groundwater from bore K01.

Table compares the single-step equilibration of the average K01 solution against equilibration of each of the 24 individual monitoring events.

The average solution approach produces a single representative equilibrium result, while the temporal approach captures variability in input chemistry across the monitoring record and its effect on mineral saturation and precipitation behaviour.

TABLE E5-5 COMPARISON BETWEEN AVERAGE AND ALL-EVENT PHREEQC RESULTS FOR K01 GROUNDWATER

Parameter		Average K01 Solution	Temporal K01 (24 events)
Input pH		4.5	3.4-6.7
Post-equilibration pH		3.8	3.5-6.3
Input pe		4.0 (default)	4.0 (default)
Post-equilibration pe		4.8 (oxidizing)	-2.5-9.1 (reducing to strongly oxidizing)
Precipitated phases (mg/kg)	Alunite	20	3.1-53 (n=19, mean=22)
	Barite	0.03	0.01-0.11 (n=23, mean=0.04)
	Gibbsite	0	6.8 (n=1)
	$MnHPO_4$	0	0.02-3.8 (n=4, mean=1.1)

Parameter		Average K01 Solution	Temporal K01 (24 events)
	$Fe(OH)_{2.7}Cl_{0.3}$	0	0.26-59 (n=19, mean=8.0)
	Magnetite	0	8.7-51 (n=6, mean=25)

Temporal Variation

Sequential equilibration of groundwater composition from each of the individual 24 K01 groundwater monitoring events (August 2020 to June 2025) against the prior mineral phase assemblage was used to assess temporal consistency in geochemical behaviour and mineral saturation state over the 5 years of monitoring.

For each sequential equilibration step, the accumulated mineral assemblage from the previous event was carried forward, while the input solution chemistry was taken directly from the corresponding monitoring event. The results are shown as ranges and average values in Table 5.

- Magnetite and alunite were the dominant precipitating phases, jointly controlling solution chemistry across the monitoring period.
    - Magnetite precipitation occurred in a subset of events where post-equilibration pH remained above approximately 5 and redox conditions favoured mixed Fe(II)-Fe(III) stability.
    - Alunite precipitation occurred in events characterised by elevated Al, K and SO_4 and lower pH, and was responsible for sustained acidity during those periods.
- The relative dominance of magnetite versus alunite varied temporally, reflecting shifts in pH and aluminium concentrations between monitoring events.
- Gibbsite precipitated in isolated events only and was confined to higher-pH events that did not coincide with alunite stability and did not persist across sequential timesteps.
- Barite precipitated consistently at trace quantities across most events. Precipitation was driven by elevated Ba and SO_4 concentrations, but cumulative mass remained minor.

Goethite, ferrihydrite and all jarosite phases remained strongly undersaturated throughout and did not precipitate.

E5.3.1.2 K02

As shown in Table E5-6, single-step equilibration of the average K02 groundwater composition against the revised mineral phase assemblage resulted in precipitation of three phases: magnetite, gibbsite and barite.

- Magnetite was the dominant precipitating phase. Magnetite precipitation reflects adjustment of dissolved iron under reducing conditions and contributed to a decrease in pe from 4 to -0.84.
- Gibbsite was the only aluminium-bearing phase predicted to precipitate (SI>0). Aluminium sulfate phases, such as alunite, remained undersaturated and did not precipitate. Aluminium precipitation as gibbsite was associated with a minor decrease in pH from 5.57 to 5.39, indicating weak aluminium buffering when compared to results at K01.
- Barite precipitated in trace quantities only and had no material effect on dissolved sulfate concentrations.
- All carbonate minerals were strongly undersaturated (SI<<0) and did not precipitate.

Overall, single-step equilibration of K02 groundwater was characterised by weak mineral buffering, with equilibrium behaviour controlled primarily by iron redox adjustment through magnetite precipitation and minor aluminium removal via gibbsite, and an absence of sulfate-driven acidity generation.

TABLE E5-6 COMPARISON BETWEEN AVERAGE AND ALL-EVENT PHREEQC RESULTS FOR K02 GROUNDWATER

Parameter		Average K02 Solution	Temporal K02 (all events)
Input pH		5.6	4.8-6.5
Post-equilibration pH		5.4	4.8-6.5
Input pe		4.0 (default)	4.0 (default)
Post-equilibration pe		-0.84 (weakly reducing)	-2.6-6.8 (reducing to oxidizing)
Precipitated phases (mg/kg)	Magnetite	2.28 mg/kg	0.0003-41 (n=22, mean=17)
	Alunite	2.10 mg/kg	0.08-25 (n=18, mean=2.9)
	Barite	0.02 mg/kg	0.006-0.15 (n=21, mean=0.02)
	Gibbsite	0	1.2 (n=1)
	$MnHPO_4$	0	0.02-3.8 (n=4, mean=1.1)
	$Fe(OH)_{2.7}Cl_{0.3}$	0	0.26-59 (n=19, mean=8.0)

Temporal Variation

Sequential equilibration of groundwater composition from each of the individual 23 K02 groundwater monitoring events (August 2020 to June 2025) (Table E5-6) against the mineral phase assemblage was used to assess temporal consistency in geochemical behaviour and mineral saturation state.

- Magnetite and alunite were the dominant precipitating phases, together exerting the primary control on solution chemistry across the monitoring period.
  - Magnetite precipitation occurred in the majority of events (22 of 24), with precipitated masses ranging from trace levels to 41 mg/kg.
  - Magnetite formation was favoured during higher-pH conditions (input pH 4.8-6.5), consistent with mixed Fe(II)-Fe(III) oxide stability.
  - Alunite precipitation occurred in acidic, sulfate-rich events, with precipitated masses ranging from approximately 0.08 to 25 mg/kg. These events show convergence toward strongly acidic post-equilibration pH, indicating alunite-controlled buffering under elevated aluminium and sulfate activity.
  - The relative dominance of magnetite versus alunite varied temporally, reflecting shifts in pH, aluminium availability, and sulfate concentration rather than progressive evolution toward a single stable assemblage.
- Gibbsite precipitated in a single higher-pH event only, and did not persist across sequential timesteps.
- $Fe(OH)_{2.7}Cl_{0.3}$ precipitated in one isolated event only.
- Barite precipitated consistently at low concentrations across most events (21 of 24).

Goethite, ferrihydrite, jarosite phases and other iron oxyhydroxide and sulfate minerals remained undersaturated (SI < 0) throughout the temporal simulations and did not precipitate.

E5.3.2 KERALE TEST PITS ASLP LEACHATE

Geochemical equilibrium modelling was undertaken for ASLP results from soils within the Kerale Area to support interpretation of soil assessment results reported in ERM (2026), noting that for this assessment ASLP results are considered to represent pore water composition at each location. The modelling was designed to improve understanding of the geochemical conditions influencing acidity generation and metal mobility in the vicinity of Kerale Dam, including areas potentially affected by residual materials associated with the former lime dosing facility.

Each equilibrium calculation represents an independent ASLP result, with no mixing or reaction pathway between samples.

The results therefore describe sample-specific equilibrium conditions and are used to identify likely mineral controls relevant to current soil and pore water geochemistry, recognising that ALSP results will not directly represent pore water composition.

E5.3.2.1 PH AND PE CONDITIONS

The modelled results of the equilibrated ASLP samples exhibit a wide range of chemical conditions. pe and pH distributions are displayed spatially in Figure E5-1.

- Calculated pH values range from acidic to alkaline. Areas of alkaline pH coincide with locations where carbonate or hydroxide phases are predicted to precipitate, whereas acidic pH conditions are associated with iron and sulfate bearing phases.
- Calculated pe values also span a broad range, from strongly reducing to oxidising conditions, reflecting heterogeneity in subsurface conditions rather than geochemical evolution.

In PHREEQC, higher pe values (oxidising conditions, pe>4) describe environments where materials behave like exposed rusting metal or weathered soil: Oxygen is available, metals tend to form insoluble coatings or crusts that stick to particles and sulfur remains as sulfate rather than sulfide.

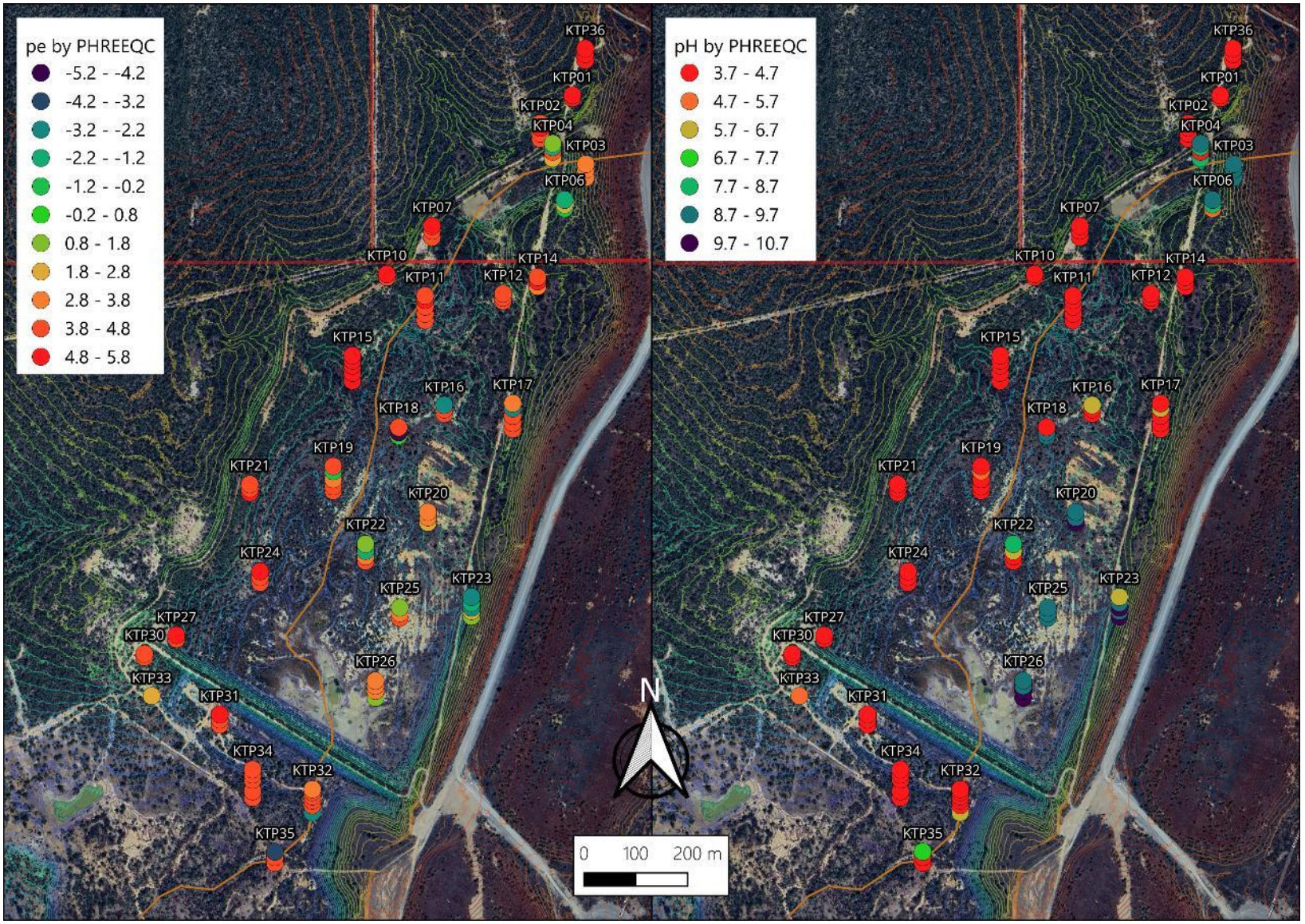
Lower pe values (reducing conditions, pe<2) describe environments more like waterlogged sediments or buried organic material: Oxygen is absent, metals stay dissolved or form soft black minerals and sulfur forms sulfides.

The predominance of oxidising conditions of the KTP samples (61% of samples) reflects equilibrium settings where oxygenated water and oxidised aqueous species are stable.

The presence of reducing conditions in a smaller proportion of samples (19%) indicates that, in some locations, oxygen is less available and more chemically reduced conditions are present.

The highest diaspore masses occur in samples KTP16-1 (pH 5.94, pe -2.19), KTP19-2 (pH 5.38, pe -1.15) and KTP23-3 (pH 10.44, pe -2.43), spanning a wide pH range but consistently low pe values, indicating that elevated diaspore precipitation in the dataset is more closely associated with reduced redox conditions than with pH alone.

FIGURE E5-1 SPATIAL DISTRIBUTION OF POST-EQUILIBRIUM pe AND pH BY PHREEQC MODELLING



The following interpretation includes ΔpH and Δpe values, which show the difference between post-equilibration pH/pe of the original solutions and pH/pe after solutions have been allowed to precipitate and re-equilibrate. It is used to quantify the net chemical response of a sample during precipitation.

- Positive ΔpH indicates that pH increased during precipitation, inferring net proton consumption through acid-consuming reactions, such as reduction of oxidised species or precipitation of acidic secondary minerals.
- Negative ΔpH indicates that pH decreased during precipitation, inferring net proton generation through acid-producing reactions, such as oxidation of reduced species or dissolution of acidic secondary minerals.
- Positive Δpe indicates that the solution has become more oxidised during precipitation. This can occur when reduced dissolved species (for example Fe(II)) are oxidised to Fe(III) and subsequently removed from solution by precipitation of Fe(III) hydroxide minerals (e.g. $Fe(OH)_3$). In this case, oxidation involves electron removal from solution, resulting in a net increase in pe, and is commonly coupled to proton generation and a corresponding decrease in pH.
- Negative Δpe indicates that the solution has become more reduced during precipitation. This can occur when oxidised dissolved species are consumed or removed during precipitation or dissolution reactions that favour reduced aqueous species. In this case, reduction involves electron addition to solution, resulting in a net decrease in pe, and is commonly coupled to proton consumption and a corresponding increase in pH

Northern zone – former lime dosing area

KTP01, KTP02, KTP03, KTP04, KTP06, KTP07, KTP36

Samples from the northern zone show strongly contrasting equilibration behaviour reflecting strong vertical variability in equilibrated pH and pe, consistent with heterogeneous residual lime influence associated with the former lime dosing facility.

- KTP01, KTP02 and KTP07 exhibit consistent negative ΔpH (-0.5 to -1.2) and positive Δpe (+0.7 to +1.1). These samples precipitate diaspore as the dominant secondary phase, with no iron oxide formation.
    - After precipitation, equilibrated pH remains acidic (3.8-4.3) and pe remains high (~4.7-5.1) across depths.
    - The Δ responses reflect precipitation dominated by aluminium hydroxide phases under persistently acidic, oxidising conditions, with little change to the overall redox regime.
- KTP03 shows small positive ΔpH (+0.1 to +0.2) and negative Δpe (-0.3 to -0.6), consistent with residual lime or carbonate buffering. These samples precipitate iron oxides (hematite and magnetite) together with diaspore, and carbonate phases at some depths.
    - After precipitation, pH remains alkaline (8.9-9.3) and pe remains oxidising (~3.4-3.7).
- KTP04 shows varied modelled results with depth.
    - KTP04-1 exhibits positive ΔpH (0.7) and negative Δpe (-3.0). This sample precipitates diaspore and hematite. After precipitation, equilibrated pH is alkaline (8.8) and pe is weakly oxidizing (1.1). The Δ responses reflect precipitation including an iron oxide phase at alkaline pH with moderately oxidising conditions.

    - KTP04-2 exhibits positive ΔpH (1.3) and strongly negative Δpe (-5.2). This sample precipitates diaspore, barite, hematite and magnetite. After precipitation, equilibrated pH is alkaline (8.7) and pe is reducing (-1.2). The Δ responses reflect precipitation including multiple iron oxide phases at alkaline pH with reducing post-precipitation conditions.
    - KTP04-3 exhibits no change in pH or pe (ΔpH 0.00, Δpe 0.00). This sample precipitates diaspore and barite only, with no iron oxide formation. After precipitation, equilibrated pH is acidic (4.0) and pe is oxidising (4.0), consistent with the pre-equilibration values.
    - KTP04-4 exhibits near-zero ΔpH and negative Δpe (-1.5). This sample precipitates diaspore, barite and hematite. After precipitation, equilibrated pH is near neutral (7.7) and pe is oxidising (2.5), relatively consistent with the pre-equilibration values.
- KTP06 shows strong variability in precipitation response between samples.
    - KTP06-1 exhibits positive ΔpH (+2.2) and strongly negative Δpe (-5.9). This sample precipitates diaspore, hematite and magnetite. After precipitation, equilibrated pH is alkaline (9.4) and pe is reducing (-1.9). The Δ responses are large because the original porewater contained sufficiently high concentrations of dissolved aluminium and iron to become supersaturated. This resulted in removal of aluminium and iron from solution to solid phase, requiring substantial adjustment of both pH and pe to reach equilibrium.
    - KTP06-2 exhibits near zero ΔpH and negative Δpe (-1.8). This sample precipitates diaspore together with iron oxides (hematite and magnetite). After precipitation, equilibrated pH is alkaline (8.4) and pe is weakly oxidising (2.2).
    - KTP06-3 exhibits negative ΔpH (-0.7) and negative Δpe (-4.4). This sample precipitates diaspore only, with no hematite formation. After precipitation, equilibrated pH is mildly acidic (5.6) and pe is weakly reducing (-0.4). The large Δpe reflects equilibration from a strongly oxidising initial solution to a much lower pe state in the absence of ferric iron precipitation, allowing redox conditions to adjust substantially while pH remains constrained by aluminium hydroxide control.

Central west zone – Kerale Dam impoundment

KTP10, KTP15, KTP19, KTP21, KTP24, KTP27, KTP30

The central west zone is characterised by widespread stored acidity and consistently low neutralising capacity, consistent with relatively uniform equilibration behaviour across the locations.

- All central west samples exhibit negative ΔpH and positive Δpe, indicating that mineral precipitation consistently shifts porewaters to lower pH and higher pe relative to the original solutions. While the magnitude of ΔpH and Δpe varies between samples and depths, the direction of change is the same across the zone.
- Differences between samples are primarily expressed as variations in the size of ΔpH, with deeper samples (e.g. KTP15, KTP19, KTP21) showing larger negative ΔpH values than shallower samples. This indicates that precipitation at depth requires greater chemical adjustment, consistent with vertically persistent acidic porewater conditions.

- Despite these differences in magnitude, final equilibrated pH values remain acidic and pe values remain oxidising across the central west zone, indicating that precipitation does not lead to varying chemical states between sites.

Central east zone – eastern impoundment and drainage line

KTP11, KTP12, KTP14, KTP16, KTP17, KTP18, KTP20, KTP22, KTP23, KTP25, KTP26

The central east zone exhibits the greatest variability in equilibration response, reflecting spatial overlap of acidic profiles, carbonate-influenced materials and transitional geochemical conditions.

- Central east samples exhibit ΔpH values ranging from -2.1 to +2.2 and Δpe values ranging from +1.1 to -9.2, indicating that mineral precipitation produces markedly different chemical adjustments depending on location and depth.
- Acidic profiles (e.g. KTP11, KTP12, KTP14, KTP22) consistently show negative ΔpH values in the range -0.5 to -1.6 with Δpe values that are positive to near zero (-0.2 to +1.1).
- Alkaline samples (KTP18, KTP20, KTP23, KTP25 and KTP26) exhibit positive ΔpH values (up to +2.2) and negative to strongly negative Δpe values (down to -9.2). These samples precipitate iron oxide phases, commonly hematite and magnetite, with diaspore present in some intervals. After precipitation, equilibrated pH is alkaline (8.7-10.4) and pe ranges from oxidising to reducing.
- Intermediate behaviour occurs at locations such as KTP16 and KTP17, where ΔpH values range from -2.1 to -0.5 and Δpe values range from +0.8 to -6.6. These samples precipitate diaspore together with iron oxide phases in some intervals. After precipitation, equilibrated pH ranges from acidic to near neutral (3.8-6.3) and pe ranges from oxidising to reducing.
- Overall, the central east zone is characterised by strong vertical and lateral heterogeneity in ΔpH and Δpe responses, with mineral precipitation driving porewaters toward multiple distinct post-equilibration chemical states rather than a single dominant regime, in contrast to the more uniform behaviour observed in the central west zone.

Southern zone – downgradient of Kerale Dam

KTP31, KTP32, KTP33, KTP34, KTP35

The southern zone shows equilibration behaviour characterised by the persistence of acidic, oxidising porewaters in most locations, with localised development of reducing conditions where iron oxide phases precipitate at depth.

- Most samples are acidic and exhibit negative ΔpH values (-0.3 to -1.6) and positive Δpe values (0.4 to 1). These samples precipitate diaspore only, with no iron oxide formation. After precipitation, equilibrated pH is acidic (4.0-4.3) and pe is oxidising (4.2-5.0). The Δ responses reflect precipitation dominated by aluminium hydroxide phases under acidic and oxidising conditions downgradient of the impoundment.
- Iron-containing samples (KTP32-6 and KTP35-1) exhibit near-zero to positive ΔpH values (-0.4 to +0.4) and strongly negative Δpe values (-6.4 to -7.4). These samples precipitate iron oxide phases. After precipitation, equilibrated pH values are near neutral to alkaline (6.2-7.4) and pe is reducing (-3.3 to -2.4). The Δ responses reflect substantial redox adjustment during equilibration associated with iron-controlled conditions.

E5.3.2.2 MINERAL PHASES

This section describes the mineral phases indicated by the PHREEQC equilibrium modelling of ASLP from soils sampled at KTPs to participate in solution equilibration by dissolution and/or precipitation.

In PHREEQC, prediction of geochemical behavior is achieved by adjusting the dissolved chemical concentrations in the solution through controlled dissolution or precipitation of the specified phases until each phase reaches its defined equilibrium condition.

The interpretation is based solely on the behaviour of equilibrium phases defined in the model, all of which were specified with zero initial mass and were allowed to precipitate only if required to satisfy thermodynamic equilibrium. Any mineral phases reported by the model therefore represent phases that the solution would form under equilibrium conditions.

This modelling step was undertaken to identify which mineral phases the dissolved chemistry is thermodynamically consistent with forming under equilibrium conditions, for the purposes of screening and interpretation. The results provide a structured way to assess which phases are favoured by the solution composition at different locations and depths, to aid with understanding broader geochemical behaviour.

The predicted amount of precipitated minerals results are presented in Table E5-7. The overall results are summarised below as bullet points.

- PHREEQC modelling indicates precipitation across the KTP solutions, which would result in the accumulation of aluminium, iron and sulfate bearing phases, with total precipitated mass varying substantially between samples and zones.
- The modelled precipitated assemblages show that multiple secondary phases can accumulate simultaneously, rather than a single dominant mineral controlling equilibrium conditions.
- Iron minerals (hematite, magnetite and $Fe(OH)_{2.7}Cl_{0.3}$) contribute locally significant precipitated mass, indicating potential for accumulation of iron-rich solids under the simulated equilibrium conditions.
- Barite is predicted to precipitate across a wide range of samples, generally at low to moderate mass, reflecting conditions favourable for sulfate immobilisation through $BaSO_4$ (barite) formation.
- Carbonate phases (calcite and dolomite) are predicted only in a limited subset of samples in central east, and where present they contribute a minor proportion of total precipitated mass compared with hydroxide and sulfate-related phases.
- The cumulative precipitated mineral mass varies both laterally and vertically, indicating heterogeneous chemistry and therefore varying equilibrium behaviour among the modelled solutions.
- Overall, the modelling results using ASLP leachate chemistry of KTP samples demonstrate that equilibrium mineral precipitation is spatially variable and results in the accumulation of chemically reactive secondary phases, with predicted assemblages strongly influenced by the modelled pH-pe conditions.

TABLE E5-7 SUMMARY OF MINERAL PHASES FROM PHREEQC MODELLING OF KTP ASLP

Zone	Precipitated Phase	KTP Sample(s)	n>0	Mass Statistics (mg/kg)[1]	Summary
Northern - former lime dosing area n_{tot} = 22	Diaspore	All except KTP04-3 and KTP04-4 Highest: KTP06-1 (8.5 mg/kg)	21	p25 = 1.2 median = 2.4 mean = 2.6 p75 = 3.6 max = 8.5	The main precipitated phase is aluminium hydroxide (diaspore), with smaller amounts of iron oxides and barite. Calcite is present only in a small number of samples and does not occur consistently across the zone. KTP06 is located uphill/upstream of the former lime dosing area, and contains the highest amount of diaspore, hematite, calcite and magnetite. Deep KTP04 samples taken directly from the lime pond area are the only ones not containing any diaspore. This is due to low dissolved Al content of the original porewater (0.67 mg/L at KTP04-3 and 0.02 mg/L at KTP04-4). As a result, aluminium does not reach conditions required for aluminium hydroxide precipitation in PHREEQC, and precipitation is instead limited to iron oxides and barite. This pattern indicates variable chemical conditions, where carbonate buffering is limited and localised.
	Hematite	KTP06-1, KTP04-2, KTP03-1, KTP03-2	8	p25 = 0.30 median = 0.54 mean = 0.86 p75 = 0.76 max = 3.5	
	Magnetite	KTP06-1, KTP04-2	2	p25 = 0.087 median = 0.11 mean = 0.30 p75 = 0.42 max = 0.73	
	Barite	KTP04-3 (0.99 mg/kg), KTP04-2	6	p25 = 0.37 median = 0.44 mean = 0.48 p75 = 0.61 max = 0.99	
	Calcite	KTP6-02 (5.1 mg/kg), KTP03-2	4	p25 = 0.32 median = 0.42 mean = 1.5 p75 = 1.6 max = 5.1	
Central west - Kerale Dam impoundment n_{tot} = 22	Diaspore	All samples Highest: KTP19-2 (24 mg/kg) Lowest: KTP24-3 (0.62 mg/kg)	22	p25 = 2.1 median = 4.2 mean = 5.4 p75 = 6.0 max = 24	This zone shows consistently higher diaspore precipitation than other areas, with iron oxides and barite present at low but persistent levels. Carbonate phases are completely absent.
	Magnetite	KTP19-2 (0.91 mg/kg)	1	0.91	

Zone	Precipitated Phase	KTP Sample(s)	n>0	Mass Statistics (mg/kg)[1]	Summary
	Barite	Only KTP19-2 and deeper samples, decreasing with depth. KTP19-2 (0.77 mg/kg)	4	p25 = 0.33 median = 0.51 mean = 0.50 p75 = 0.68 max = 0.77	
	$Fe(OH)_{2.7}Cl_{0.3}$	KTP 19-3	1	1.2	
Central east – eastern impoundment and drainage line n_{tot} = 41	Diaspore	KTP16-2 (26 mg/kg), KTP16-1, KTP23-3	35	p25 = 1.1 median = 2.9 mean = 4.8 p75 = 5.3 max = 26	Precipitation is dominated by diaspore but is highly variable, with locally elevated iron oxide and carbonate precipitation driving the highest total masses observed across all zones.
	Hematite	KTP23-3 (15 mg/kg), KTP23-2	20	p25 = 0.17 median = 0.79 mean = 1.6 p75 = 1.3 max = 15	
	Magnetite	KTP16-1 (7.6 mg/kg), KTP17-2	6	p25 = 0.64 median = 1.7 mean = 2.3 p75 = 2.1 max = 7.6	
	Barite	KTP16-2 (1.3 mg/kg), KTP23-3 KTP26-1	24	p25 = 0.22 median = 0.42 mean = 0.45 p75 = 0.60 max = 1.3	
	Calcite	KTP25-3 (2.3 mg/kg), KTP26-3	4	p25 = 1.4 median = 1.7 mean = 1.6 p75 = 1.9 max = 2.2	
	Dolomite	KTP26-1 (4.5 mg/kg), KTP20-3	2	p25 = 1.6 median = 2.6 mean = 2.6	

Zone	Precipitated Phase	KTP Sample(s)	n>0	Mass Statistics (mg/kg)[1]	Summary
				p75 = 3.5 max = 4.5	
Southern - downgradient of Kerale Dam n_{tot} = 19	Diaspore	KTP32-1 (14 mg/kg), KTP32-2, KTP31-3	17	p25 = 1.0 median = 2.2 mean = 3.2 p75 = 3.7 max = 14	Precipitation masses are moderate and dominated by diaspore, with minor iron oxide and barite contributions and no evidence of carbonate influence.
	Barite	KTP35-3 (0.85 mg/kg), KTP35-1	8	p25 = 0.29 median = 0.65 mean = 0.52 p75 = 0.68 max = 0.85	
	$Fe(OH)_{2.7}Cl_{0.3}$	KTP32-1 (0.88 mg/kg)	6	p25 = 0.0058 median = 0.015 mean = 0.13 p75 = 0.016 max = 0.88	

Note:
[1] Calculated using non-zero values only

Northern zone – former lime dosing area

KTP01, KTP02, KTP03, KTP04, KTP06, KTP07, KTP36

In the northern zone, PHREEQC equilibration results show strong spatial and vertical variability in the phases that precipitate, reflecting heterogeneous solution compositions.

- Acid-associated sulfate phases included in the model precipitated in multiple samples, indicating that these phases are prone to precipitate if allowed to reach equilibrium.
- The magnitude and occurrence of precipitation varied between locations and with depth, with some samples indicating substantial precipitation of sulfate phases and others with limited or no precipitation.
- At locations influenced by residual neutralising capacity, sulfate phase precipitation was reduced or absent, and precipitation of carbonate or hydroxide phases included in the model were, instead, required to satisfy equilibrium.
- At KTP04, equilibration phase behaviour varied markedly with depth, with different phases precipitating in shallow versus deeper intervals, consistent with distinct vertical heterogeneity in ASLP chemistry.

Central west zone – Kerale Dam impoundment

KTP10, KTP15, KTP19, KTP21, KTP24, KTP27, KTP30

PHREEQC equilibration results in the central west zone are comparatively uniform, with a consistent set of phases required to reach equilibrium across most samples.

- Sulfate phases included in the equilibrium phase set precipitated in most samples, indicating that these phases are thermodynamically favoured by the ASLP compositions in this zone.
- Carbonate phases included in the model generally did not precipitate, indicating that they were not required to satisfy equilibrium for most samples.
- The amount of sulfate phase precipitation commonly increased with depth, indicating stronger thermodynamic driving forces for these phases in deeper samples.
- Limited variation in phase assemblages across the zone reflects relatively consistent solution chemistry between locations.

Central east zone – eastern impoundment and drainage line

KTP11, KTP12, KTP14, KTP16, KTP17, KTP18, KTP20, KTP22, KTP23, KTP25, KTP26

The central east zone exhibits the widest range of equilibration phase behaviour, with different phase assemblages required to satisfy equilibrium at different locations and depths.

- In several locations, sulfate phases precipitated during equilibration, indicating that these phases are thermodynamically favoured for a subset of samples.
- At other locations, carbonate or hydroxide phases included in the model precipitated instead of, or in addition to, sulfate phases.
- Some samples required little or no precipitation of any equilibrium phase, indicating that the initial solution chemistry was already close to equilibrium with respect to the defined phase set.

- Differences in precipitated phases with depth are evident at several locations, demonstrating depth-dependent variations in equilibrium chemistry.

Southern zone – downgradient of Kerale Dam

KTP31, KTP32, KTP33, KTP34, KTP35

Equilibration results in the southern zone are dominated by precipitation of a limited subset of phases, with little evidence for alternative equilibrium assemblages.

- Sulfate phases included in the model precipitated in most samples, indicating that these phases were consistently favoured by the solution compositions in this zone.
- Carbonate phases included in the equilibrium phase set generally did not precipitate, indicating that they were not required to satisfy equilibrium conditions.
- The amount of sulfate phase precipitation commonly increased with depth, consistent with more sustained equilibrium-driving forces in deeper samples.
- Phase assemblages were broadly consistent between locations, indicating limited lateral variability in the southern zone.

APPENDIX E6 STATISTICAL ASSESSMENT BY PCA

E6 STATISTICAL ASSESSMENT BY PCA

PCA was performed to assess the geochemical similarity between soil leachate results from the Kerale Dam area investigation and water quality data from other sources at the Collinsville Open Cut operation.

The analysis was used to evaluate whether the geochemical signature of the Kerale Dam catchment soils is consistent with influence of surface runoff and in-situ weathering of secondary sulfate minerals derived from historical lime dosing operations.

E6.1 METHODOLOGY

PCA is a statistical method that simplifies complex datasets containing many measured parameters into a smaller number of summary axes, called principal components (PCs) (Abdi, 2010).

Each PC captures a proportion of the total variability in the dataset, with PC1 capturing the most variability, PC2 the second most, and so on. The percentage of total variance explained by each PC is shown on the axis label of the biplot. For example, if PC1 explains 55% of variance, it means that a single axis captures more than half of all the differences between samples across all measured parameters combined.

Variability in this context refers to the degree to which samples differ from each other across the measured parameters. A dataset where all samples have similar pH, EC and metal concentrations would show low variability and a compressed PCA plot. In contrast, a dataset containing both strongly acidic, metal-enriched pit lake waters and near-neutral soil leachate with low metal concentrations would show high variability, and the PCA would spread those samples far apart along PC1. The higher the variance explained by the first two PCs, the more confidently the biplot represents the true differences between samples.

In this analysis, the biplot displays two types of geochemical information simultaneously. Sample points represent individual water quality or leachate measurements, with their position on the plot reflecting their overall geochemical character. Samples that plot close together have similar geochemistry across all measured parameters, while samples that plot far apart are geochemically distinct. For example, two water samples with similar pH, SO_4 and dissolved metal concentrations would plot close together regardless of where they came from, while a sample with very different chemistry would plot in a separate region of the biplot.

Variable arrows represent the measured parameters, with the direction and length of each arrow indicating which parameters are driving the separation between samples. Long arrows indicate parameters that strongly differentiate between sample groups. For example, a long arrow for dissolved Al pointing toward the water samples indicates that Al is much higher in one sample group than in the other. Short arrows indicate parameters that contribute little to the observed separation and are similar across all sample groups.

Prior to analysis, all parameters were standardised so that variables measured in different units and at different concentration ranges contributed equally to the results.

E6.2 KTP ASLP ASSESSMENT

By running PCA of the analytical results of the KTP ASLP assessment, samples can be grouped and analysed according to their properties. In addition, in this case PCA can be used to identify

the dominant geochemical controls on porewater composition across the Kerale area and to examine spatial and vertical variability of soil leachate chemistry.

The PCA dataset comprised ASLP leachate results from KTP test pits across the Northern, Central East, Central West, and Southern zones of the Kerale area.

The first two PCs explain the largest proportion of variance in the KTP dataset and provide the basis for interpretation of porewater geochemical behaviour.

E6.2.1 QUADRANTS AND PRINCIPAL COMPONENT LOADINGS

The variable correlation circle (Figure E6-2)and Table E6-8 show the contribution and loadings of each parameter to PC1 and PC2 for the KTP dataset. The PCA includes both solid-phase soil geochemical parameters and ASLP leachate chemistry, and the PCs reflect combined controls from these datasets.

- Q1 (PC1+, PC2+) includes parameters that load positively on both components, reflecting conditions where elevated ionic strength[2] coincides with sulfur- and leachability-related behaviour.
    - Parameters in this quadrant generally show PC1 loadings of +0.40 to +0.90 and PC2 loadings of +0.12 to +0.69.
    - This group is defined primarily by major ions and sulfate of the ASLP leachate (EC, SO_4, Ca, Mg, total hardness), together with bulk soil total metals (Fe, Cu, Al, Sn, Bi, Pb) and ASLP dissolved metals (Cd, Zn, Li, K).
    - Sulfur and acidity indicators (total S, NAPP by CRS, CRS in soils and acidity as $CaCO_3$ in ASLP) also align with this quadrant, indicating that higher ionic strength conditions are associated with increased sulfur expression and leachability within the KTP dataset.
- Q2 (PC1-, PC2+) contains parameters with positive PC2 but that are weakly or negatively aligned with PC1.
    - These parameters show PC1 loadings between -0.43 and -0.03 and PC2 loadings between +0.26 and +0.71.
    - This quadrant is characterised by sulfur speciation and net acidity indicators (NAPP by TAA and TAA), together with a small number of ASLP-derived parameters (Al (ASLP), Fe (ASLP) and Pb (ASLP)) that align with the positive PC2 direction but are not correlated with the major-ion-dominated PC1 axis.
- Q3 (PC1-, PC2-) does not have any variables, and this quadrant therefore does not represent a distinct geochemical control in the KTP dataset.
    - This reflects the fact that parameters controlling buffering and pH are inversely related to PC2 but remain positively associated with PC1, leaving the PC1−, PC2− quadrant unpopulated.
- Q4 (PC1+, PC2-) contains parameters that load positively on PC1 and strongly negatively on PC2, reflecting conditions where elevated ionic strength coincides with high pH and alkaline buffering behaviour.
    - These parameters typically show PC1 loadings of +0.26 to +0.87 and PC2 loadings between -0.81 and -0.06.

[2] Measure of the total concentration of ions in solution, weighted by their charge.

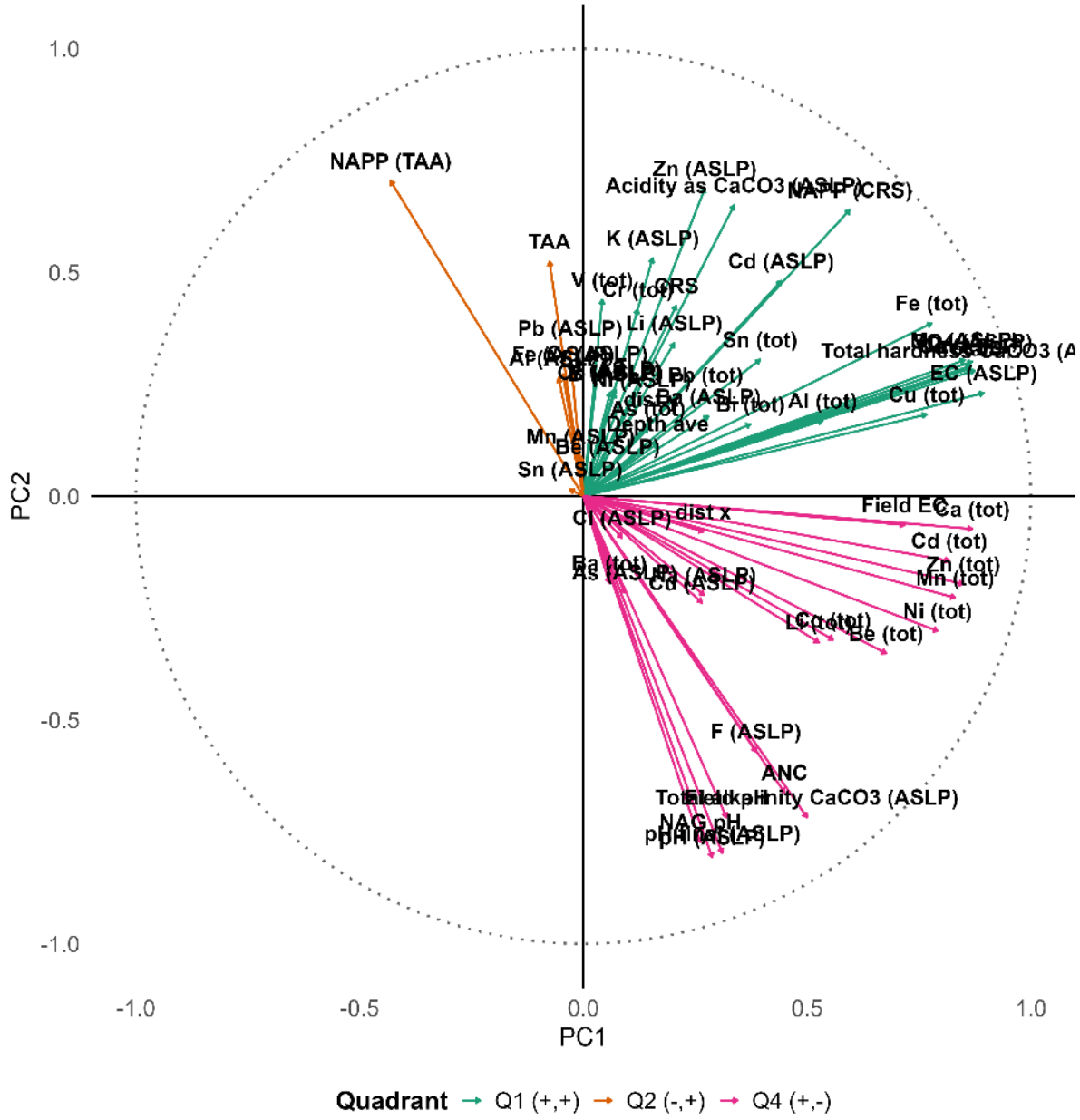
- This quadrant is characterised by F (ASLP) and total metals measured in soil (Ca, Zn, Mn, Cd, Ni, Be, Co and Li), together with acid buffering parameters indicating alkaline conditions, including high pH, total alkalinity as $CaCO_3$ (ASLP), ANC and NAG pH.

TABLE E6-8 PRINCIPAL COMPONENT LOADINGS AND CONTRIBUTIONS FOR PCA OF KTP AND GROUNDWATER CHEMISTRY

Parameter	PC1		PC2		Quadrant
	Loading	*Contribution*	Loading	*Contribution*	
EC (ASLP)	**0.90**	*5.8*	**0.23**	*0.58*	*Q1*
Total hardness as $CaCO_3$ (ASLP)	**0.87**	*5.5*	**0.28**	*0.86*	*Q1*
SO_4 (ASLP)	**0.87**	*5.5*	**0.30**	*0.99*	*Q1*
Ca (tot)	**0.87**	*5.5*	**-0.07**	*0.058*	*Q4*
Ca (ASLP)	**0.87**	*5.4*	**0.29**	*0.92*	*Q1*
Total S	**0.87**	*5.4*	**0.29**	*0.89*	*Q1*
Mg (ASLP)	**0.85**	*5.2*	**0.30**	*1.0*	*Q1*
Zn (tot)	**0.85**	*5.2*	**-0.20**	*0.42*	*Q4*
Mn (tot)	**0.83**	*5.0*	**-0.23**	*0.56*	*Q4*
Cd (tot)	**0.82**	*4.8*	**-0.14**	*0.23*	*Q4*
Ni (tot)	**0.79**	*4.5*	**-0.30**	*0.99*	*Q4*
Fe (tot)	**0.78**	*4.4*	**0.39**	*1.6*	*Q1*
Cu (tot)	**0.77**	*4.3*	**0.18**	*0.36*	*Q1*
Field EC	**0.72**	*3.7*	**-0.06**	*0.045*	*Q4*
Be (tot)	**0.68**	*3.3*	**-0.35**	*1.3*	*Q4*
NAPP by CRS	**0.60**	*2.6*	**0.64**	*4.4*	*Q1*
Co (tot)	**0.56**	*2.2*	**-0.32**	*1.1*	*Q4*
Al (tot)	**0.53**	*2.1*	**0.17**	*0.31*	*Q1*
Li (tot)	**0.53**	*2.0*	**-0.33**	*1.2*	*Q4*
Total alkalinity as $CaCO_3$ (ASLP)	**0.50**	*1.8*	**-0.72**	*5.6*	*Q4*
ANC	**0.45**	*1.5*	**-0.66**	*4.8*	*Q4*
Cd (ASLP)	**0.44**	*1.4*	**0.48**	*2.5*	*Q1*
NAPP by TAA	**-0.43**	*1.3*	**0.71**	*5.4*	*Q2*
Sn (tot)	**0.40**	*1.1*	**0.31**	*1.0*	*Q1*
F (ASLP)	**0.39**	*1.1*	**-0.57**	*3.5*	*Q4*
Bi (tot)	**0.37**	*1.0*	**0.16**	*0.28*	*Q1*
Acidity as $CaCO_3$ (ASLP)	**0.34**	*0.82*	**0.65**	*4.6*	*Q1*
Field pH	**0.32**	*0.74*	**-0.72**	*5.6*	*Q4*
pH final (ASLP)	**0.31**	*0.70*	**-0.80**	*6.9*	*Q4*

Parameter	PC1		PC2		Quadrant
	Loading	*Contribution*	Loading	*Contribution*	
pH (ASLP)	**0.29**	*0.60*	**-0.81**	*7.1*	*Q4*
Ba (ASLP)	**0.28**	*0.56*	**0.18**	*0.35*	*Q1*
Pb (tot)	**0.27**	*0.54*	**0.23**	*0.56*	*Q1*
Zn (ASLP)	**0.27**	*0.53*	**0.69**	*5.1*	*Q1*
Na (ASLP)	**0.27**	*0.52*	**-0.22**	*0.53*	*Q4*
dist x	**0.27**	*0.52*	**-0.08**	*0.068*	*Q4*
Cu (ASLP)	**0.27**	*0.51*	**-0.24**	*0.61*	*Q4*
NAG pH	**0.26**	*0.49*	**-0.77**	*6.5*	*Q4*
CRS %S	**0.21**	*0.31*	**0.43**	*2.0*	*Q1*
Li (ASLP)	**0.20**	*0.30*	**0.34**	*1.3*	*Q1*
Depth ave	**0.17**	*0.20*	**0.12**	*0.15*	*Q1*
K (ASLP)	**0.16**	*0.17*	**0.53**	*3.1*	*Q1*
dist y	**0.15**	*0.17*	**0.17**	*0.32*	*Q1*
As (tot)	**0.14**	*0.15*	**0.15**	*0.25*	*Q1*
Ni (ASLP)	**0.13**	*0.12*	**0.22**	*0.51*	*Q1*
Cr (tot)	**0.12**	*0.11*	**0.42**	*1.9*	*Q1*
TAA %S	**-0.08**	*0.041*	**0.52**	*3.0*	*Q2*
V (ASLP)	**0.07**	*0.036*	**0.24**	*0.63*	*Q1*
B (ASLP)	**0.07**	*0.035*	**0.23**	*0.58*	*Q1*
Co (ASLP)	**0.06**	*0.026*	**0.23**	*0.59*	*Q1*
Ba (tot)	**0.06**	*0.024*	**-0.19**	*0.41*	*Q4*
Al (ASLP)	**-0.06**	*0.022*	**0.26**	*0.76*	*Q2*
Fe (ASLP)	**-0.05**	*0.015*	**0.27**	*0.81*	*Q2*
V (tot)	**0.04**	*0.013*	**0.44**	*2.1*	*Q1*
Cr (ASLP)	**0.03**	*0.0069*	**0.27**	*0.82*	*Q1*
Pb (ASLP)	**-0.03**	*0.0065*	**0.33**	*1.2*	*Q2*

FIGURE E6-2 PCA QUADRANTS OF KERALE DAM SOIL CHEMISTRY



E6.2.2 BIPLOT ANALYSIS

PCA was applied to the KTP dataset, comprising combined soil geochemical testing parameters and ASLP leachate chemistry, to examine patterns of geochemical variability within the Kerale test pit network. Results are presented as a biplot in Figure E6-3; a zoomed-in version is shown in Figure E6-4.

- Positive PC1 scores indicate samples with elevated ionic strength and major ion loading relative to the dataset mean, while negative PC1 scores indicate comparatively lower ionic strength conditions.
- PC2 reflects variability in acidity, alkalinity and buffering behaviour, separating samples influenced by lower pH and reduced buffering capacity from those with higher pH or alkalinity.

The majority of KTP samples plot at negative to moderately positive PC1 values, with a wide spread along PC2, indicating that most samples are characterised by comparatively low to moderate ionic strength conditions combined with variable acid-base and buffering behaviour.

- Samples with moderately negative PC1 scores include a large proportion of Northern and Southern zone samples (for example KTP01-1, KTP01-2, KTP02-1 to KTP02-3, KTP30-1, KTP31-1 to KTP31-3, and KTP32-1 to KTP32-6).
    - These samples correlate with lower major ion concentrations and salinity indicators, including conductivity, sulfate, alkaline earths, alkali metals and bulk sulfur, together with lower relative contributions from total metals, indicating comparatively dilute ASLP and soil conditions.
- Central East and Central West samples span the widest range of PC1 values, with many samples plotting near the dataset mean (for example KTP11-2, KTP12-3, KTP14-2, KTP15-3, KTP17-3, KTP19-1, and KTP21-2).
    - These samples correspond to intermediate major ion, sulfur and metal contributions, indicating broadly comparable ionic strength and bulk geochemical conditions within and between these zones.
- A small number of KTP samples are clearly separated from the main population toward high positive PC1 values.
    - KTP04-4 and KTP04-3, in the north, plot at the highest PC1 scores within the dataset and are strongly offset from all other samples.
    - Separation toward positive PC1 is also observed for KTP23-5, KTP20-1, KTP20-2, KTP20-3 and KTP26-2, all in the east, indicating elevated major ion and sulfate-related loading at these intervals relative to the remainder of the KTP dataset.
    - These samples correlate with elevated major ion and sulfate chemistry, increased bulk sulfur content, and higher total metal concentrations.
- The majority of KTP samples remain clustered at lower PC1 values, indicating that higher ionic strength conditions are limited to a small number of discrete intervals.
- Separation along PC2 reflects differences in acidity, alkalinity and acid buffering behaviour, and is more evenly distributed across the dataset.
    - Samples with the highest positive PC2 scores include KTP04-3, KTP16-2, KTP19-2, KTP15-4, KTP02-4, and KTP35-3, with locations distributed along the drainage line spanning the entire study area.

    - This indicates that variability in acidity and buffering behaviour occurs across the entire KTP network rather than being confined to a specific zone.
- Samples with strongly negative PC2 scores are dominated by intervals in test pits in the Central East, including KTP23-5, KTP26-2, KTP26-3, KTP25-2, KTP25-3, KTP20-2 and KTP20-3, indicating contrasting acid-base behaviour relative to samples with high positive PC2 values.

FIGURE E6-3 PCA BIPLOT OF KTP SAMPLES

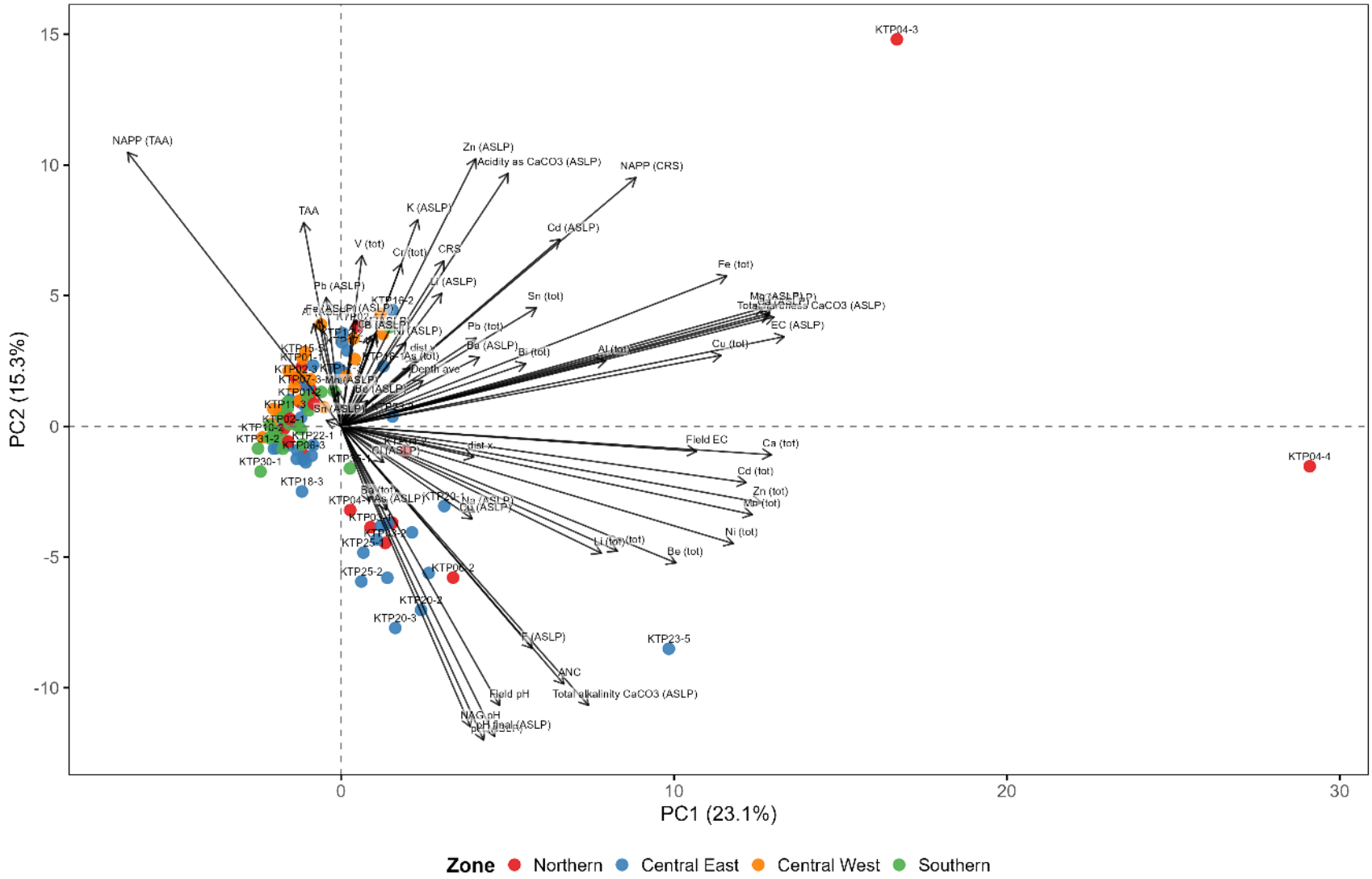
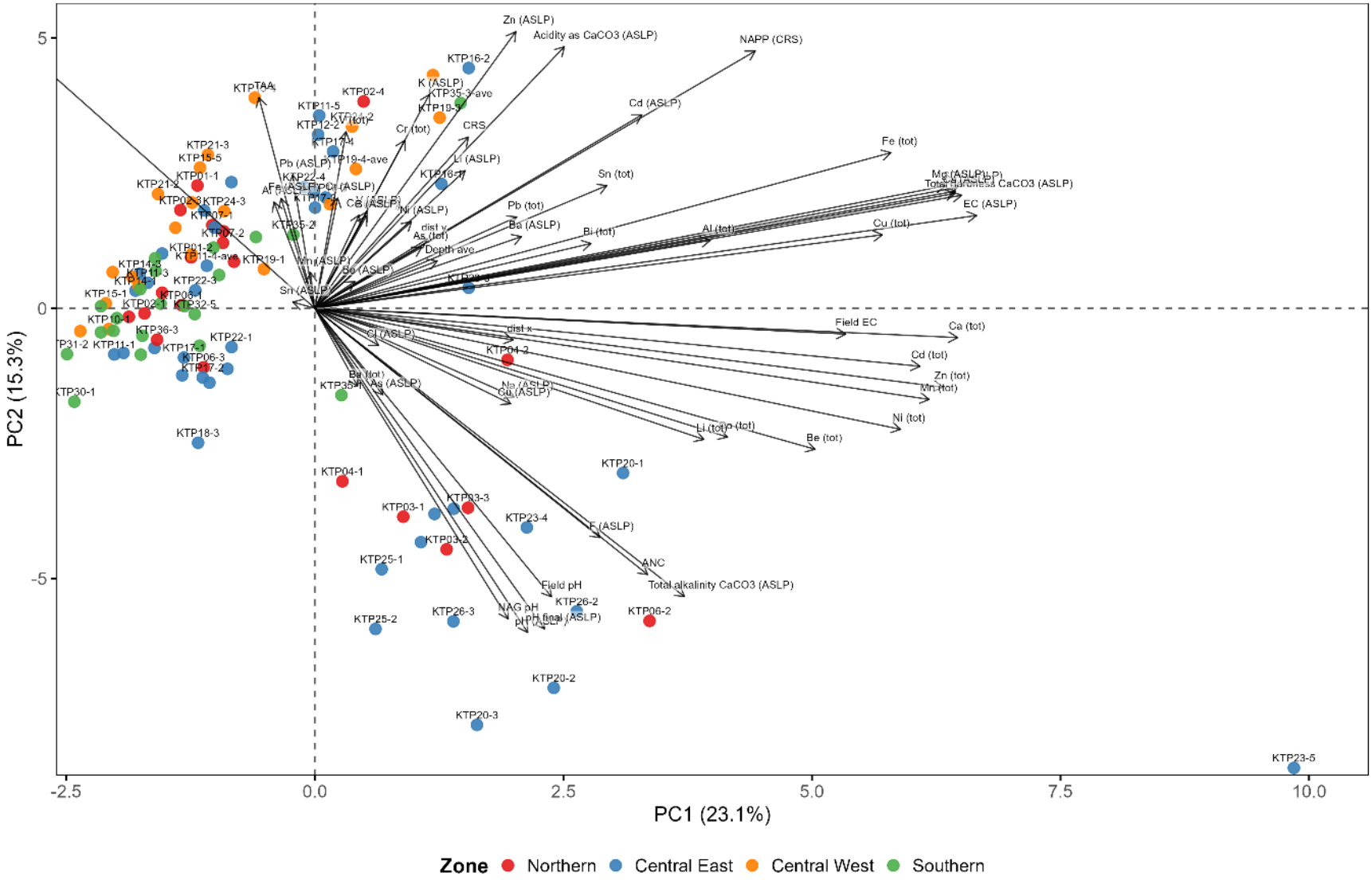


FIGURE E6-4 PCA BIPLOT OF KTP SAMPLES ZOOMED IN AROUND THE CENTRE



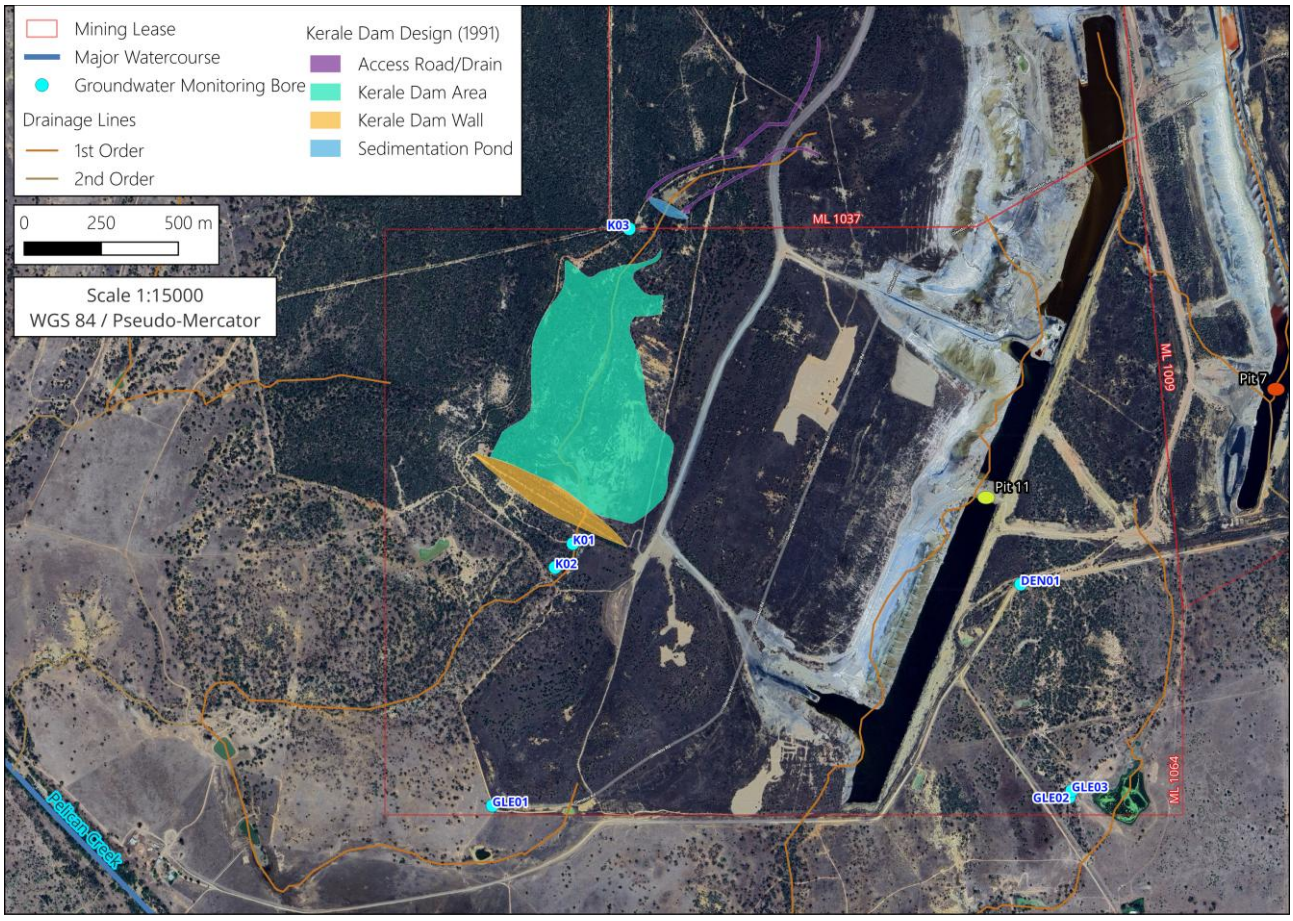
E6.3 KTP ASLP COMPARISON WITH GROUNDWATER CHEMISTRY

PCA was performed on a combined dataset of 134 samples comprising:

- 104 ASLP leachate results from the Kerale Dam area soil investigation; and
- 30 groundwater quality records from monitoring bores at the Collinsville Open Cut operation (Figure E6-5), comprising GLE01 (n=3), GLE02 (n=8), DEN01 (n=14), K01 (n=10), K02 (n=9) and TK01 (n=11).
    - Bores K01 and K02 targets the alluvium downstream from Kerale Dam.
    - GLE01 and GLE02 are located at 9-19 m and 31-43 m depth respectively in the Glendoo Sandstone. GLE01 is located 0.8 km south of K02 and GLE02 is 1.8 km south east of K02.
    - DEN01 targets the Denison Coal unit at >100 m depth and is located 1.5 km east of K02.

The first two principal components explained 39.3% and 21.2% of total variance respectively, together accounting for 60.5%.

FIGURE E6-5 KERALE AREA AND NEARBY GROUNDWATER MONITORING BORE LOCATIONS



E3.3.1 QUADRANTS AND PRINCIPAL COMPONENT LOADINGS

The variable correlation circle (Figure E6-6) and Table E6-9 show the contribution of each parameter to PC1 and PC2.

- Q1 (PC1+, PC2+) includes parameters that load positively on both components, reflecting elevated sulfate- and dissolved metals.

- This group is defined by sulfate (SO_4), together with dissolved metals measured in ASLP leachate including Mn, Fe, Zn, Co, Ni, Pb, Cu, Al and Cd, indicating that sulfate and dissolved metal concentrations show similar directional behaviour along both principal components.

- Q2 (PC1-, PC2+) contains parameters with positive PC2 loadings that are negatively aligned with PC1.
  - This quadrant is solely represented by Hg, which shows a small negative PC1 loading and a positive PC2 loading.
- Q3 (PC1-, PC2-) contains pH, which exhibits weak negative loadings on PC1 and moderate negative loading on PC2.
  - The position of pH in this quadrant reflects an inverse relationship with both dissolved metals and sulfate; i.e. alkaline water has generally low metal and sulfate content.
- Q4 (PC1+, PC2-) contains parameters that load positively on PC1 and negatively on PC2, reflecting conditions dominated by major ion chemistry and alkalinity.
  - Parameters in this quadrant show PC1 loadings between 0.42 and 0.96 and PC2 loadings between -0.73 and -0.03.
  - This group is defined by major ion and salinity indicators, including K, hardness, Ca, Mg, EC, Na and Cl, together with alkalinity, acidity and B.

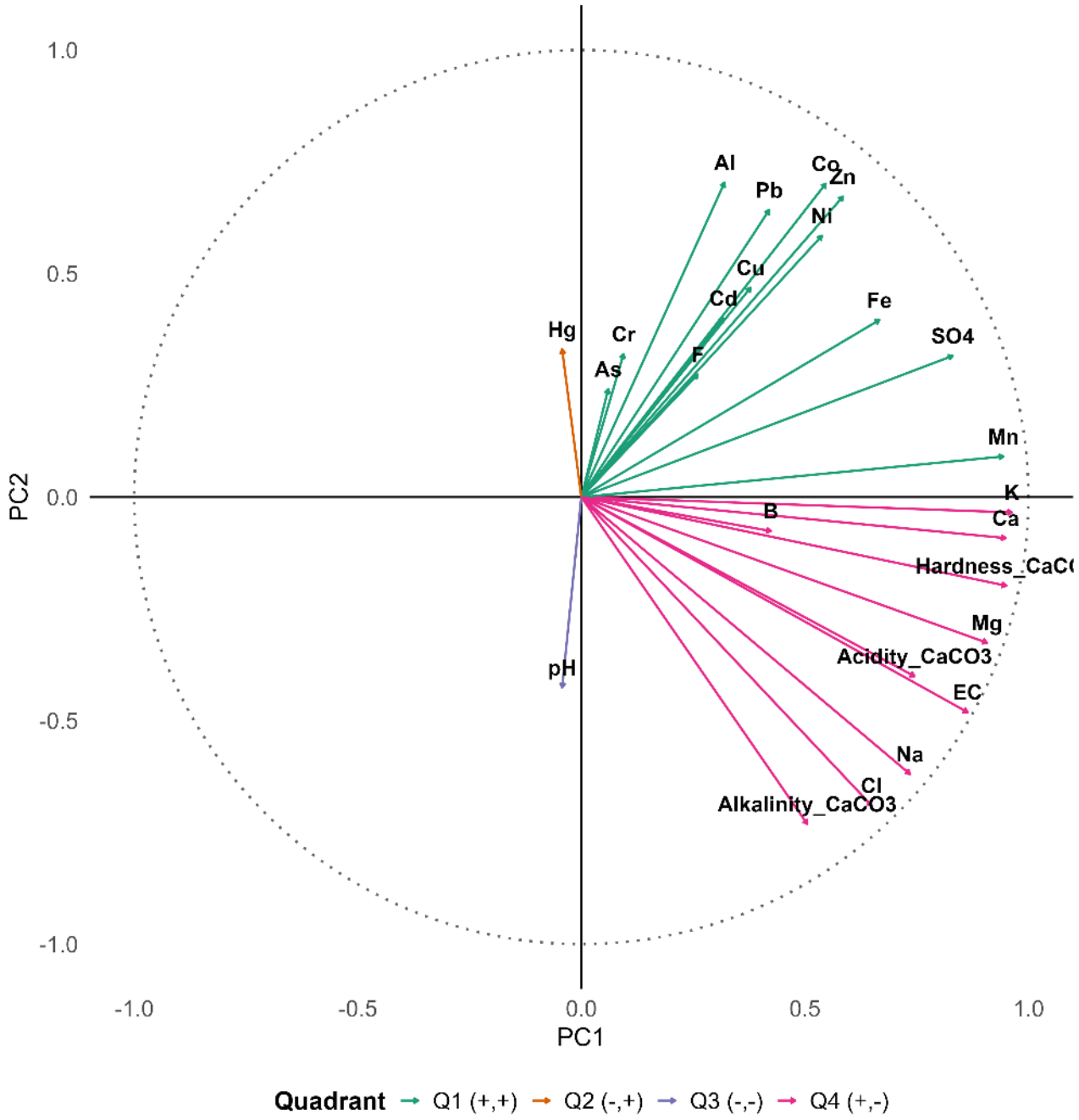
The grouping of these parameters indicates that positive PC1 captures variability related to ionic strength and salinity, while negative PC2 loadings reflect association with high pH and alkaline conditions rather than dissolved metal expression.

TABLE E6-9 PRINCIPAL COMPONENT LOADINGS AND CONTRIBUTIONS FOR PCA OF KTP ASLP AND GROUNDWATER CHEMISTRY RESULTS

Variable	PC1		PC2		Quartile
	Loading	*Contrib. (%)*	Loading	*Contrib. (%)*	
K	**0.96**	*9.45*	**-0.034**	*0.02*	Q4
Hardness	**0.95**	*9.20*	**-0.2**	*0.74*	Q4
Ca	**0.95**	*9.17*	**-0.092**	*0.16*	Q4
Mn	**0.94**	*9.08*	**0.091**	*0.16*	Q1
Mg	**0.91**	*8.38*	**-0.33**	*2.00*	Q4
EC	**0.86**	*7.60*	**-0.48**	*4.36*	Q4
SO_4	**0.83**	*7.03*	**0.32**	*1.88*	Q1
Acidity	**0.74**	*5.65*	**-0.4**	*3.02*	Q4
Na	**0.73**	*5.50*	**-0.62**	*7.23*	Q4
Fe	**0.67**	*4.53*	**0.4**	*2.95*	Q1
Cl	**0.65**	*4.29*	**-0.69**	*8.97*	Q4
Zn	**0.59**	*3.49*	**0.67**	*8.51*	Q1
Co	**0.55**	*3.04*	**0.7**	*9.25*	Q1

Variable	PC1		PC2		Quartile
	Loading	*Contrib. (%)*	Loading	*Contrib. (%)*	
Ni	**0.54**	*2.95*	**0.58**	*6.43*	Q1
Alkalinity	**0.51**	*2.60*	**-0.73**	*10.06*	Q4
B	**0.42**	*1.83*	**-0.076**	*0.11*	Q4
Pb	**0.42**	*1.80*	**0.64**	*7.77*	Q1
Cu	**0.38**	*1.46*	**0.47**	*4.13*	Q1
Al	**0.32**	*1.05*	**0.7**	*9.32*	Q1
Cd	**0.32**	*1.03*	**0.4**	*3.01*	Q1
F	**0.26**	*0.69*	**0.27**	*1.42*	Q1
Cr	**0.095**	*0.09*	**0.32**	*1.93*	Q1
As	**0.06**	*0.04*	**0.24**	*1.10*	Q1
Hg	**-0.043**	*0.02*	**0.33**	*2.06*	Q2
pH	**-0.043**	*0.02*	**-0.43**	*3.42*	Q3

FIGURE E6-6 PCA QUADRANTS OF GROUNDWATER AND KERALE DAM ASLP CHEMISTRY



E6.3.2 BIPLOT ANALYSIS

PCA was applied to the combined ASLP leachate and groundwater chemistry dataset to identify geochemical associations and compare soil porewater chemistry against groundwater from monitoring bores adjacent to Kerale Dam. Results are presented as a biplot in Figure E6-7.

- Positive PC1 scores indicate increasing dissolved metal and sulfate expression; negative PC1 scores indicate lower dissolved metal and sulfate expression relative to the dataset mean.
- PC2 separates dissolved metal and sulfate expression from high-pH, alkaline conditions characterised by elevated alkalinity.

E6.3.2.1 KTP ASLP SAMPLES

The majority of KTP ASLP samples plot in Q2, with smaller numbers in Q3 and one Northern zone sample in Q1.

- Most KTP ASLP samples plot in Q2 and have lower dissolved metal and sulfate concentrations than the most enriched samples, representing the typical soil leachate chemistry observed across the KTP ASLP dataset.
    - Characterised by lower dissolved metal and sulfate expression relative to samples plotting at positive PC1 values, representing KTP ASLP samples with relatively low dissolved metal and sulfate concentrations.
    - Samples in Q2 define the central tendency of the KTP ASLP dataset and represent the dominant geochemical signature of Kerale Dam soil leachate under typical conditions, rather than discrete anomalous or extreme behaviour.
- Q3 samples are distributed across the Northern (n = 7), Central East (n = 10) and Southern (n = 2) zones, reflecting comparatively lower dissolved metal concentrations and higher pH at those intervals, consistent with lime and/or natural carbonate-buffered and near-neutral depth intervals where metal solubility is suppressed.
    - These samples represent intervals where pH exerts a dominant control on porewater chemistry, independent of dissolved metal, sulfate or major ion enrichment.
- KTP04-3 and KTP04-4 are separated from the main KTP ASLP body toward positive PC1, driven by very high dissolved SO_4 and associated dissolved metal concentrations.
    - These samples represent the most chemically enriched KTP intervals in the dataset and are clearly distinct from the majority of KTP samples.
    - Despite this separation, dissolved metals at both intervals are comparatively low, consistent with the sparingly soluble secondary mineral phases at KTP04.
- Along PC2, KTP16-2 (Central East) and KTP19-2 (Central West) plot at the highest positive PC2 scores within the KTP ASLP dataset.
    - These samples reflect intervals where dissolved metal expression is elevated without the sulfate enrichment observed at KTP04; it is instead driven by their low alkalinity and major ion content.

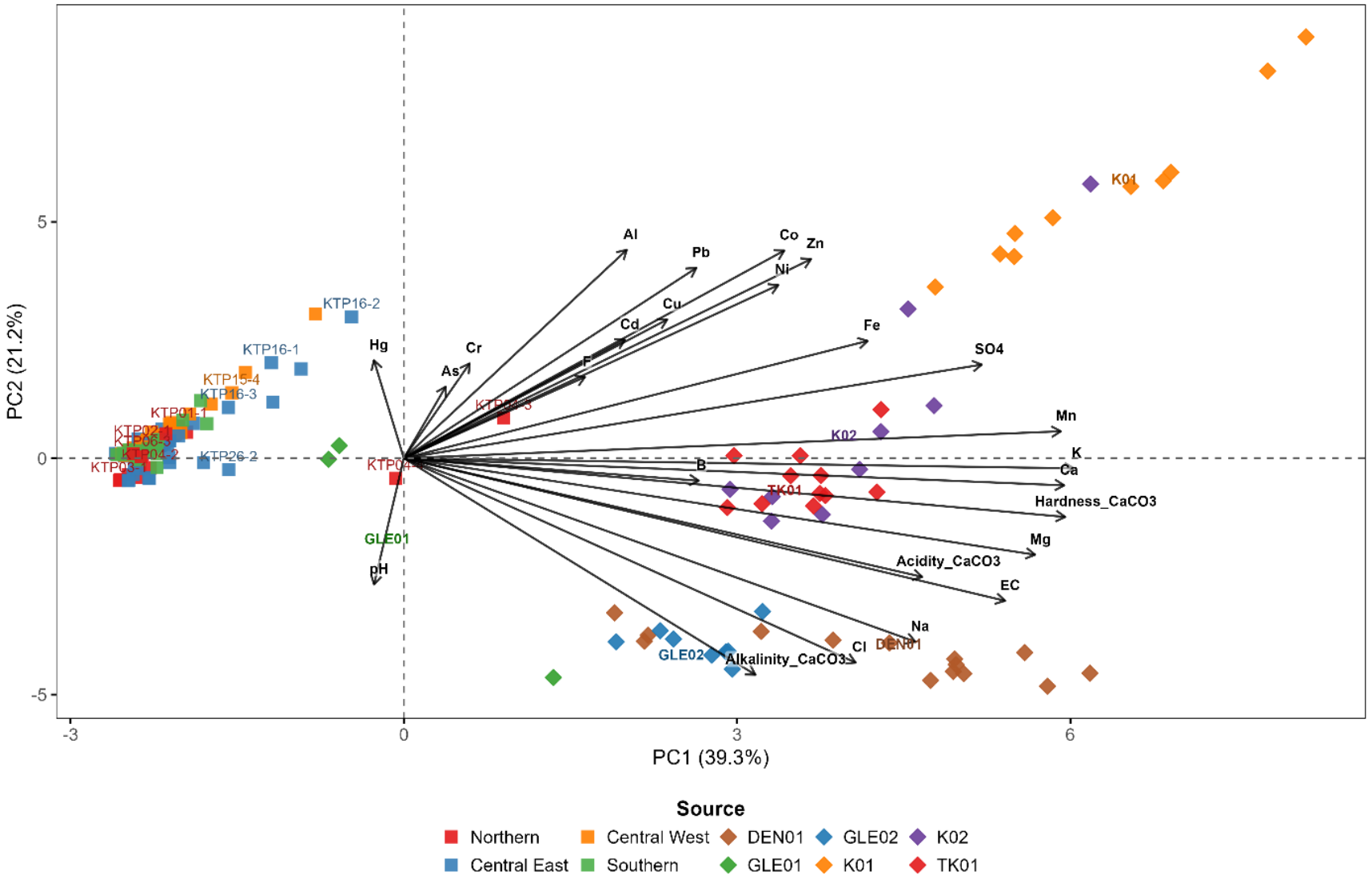
E6.4 GROUNDWATER SAMPLES

Groundwater bore samples are distributed primarily across Q1 and Q4, indicating that groundwater chemistry is distinct from KTP soil leachate and spans both dissolved metal-sulfate dominated and major ion-alkaline conditions.

- K01 plots entirely in Q1 (n = 10) and exhibits the highest PC1 scores within the groundwater dataset, with strongly positive PC1 and PC2 values. This position reflects elevated dissolved metals and SO_4.
- K02 is split between Q1 (n = 4) and Q4 (n = 5), indicating temporal variability between dissolved metal and sulfate-enriched conditions (Q1) and major-ion-dominated, alkaline conditions (Q4).
- Q1 groundwater samples share the dissolved metal and SO_4 association observed for K01, and are distinct from groundwater samples plotting in Q4, which are characterised by their major ion chemistry and high pH.

- Q4 groundwater samples plot at positive PC1 and negative PC2, reflecting elevated major ion concentrations and alkaline conditions, with lower dissolved metal concentrations relative to Q1 samples.
- TK01 shows a similar split to K02, with three samples in Q1 and eight in Q4. This indicates that TK01 frequently exhibits major-ion-dominated, alkaline groundwater chemistry, with fewer sampling events showing dissolved metal and sulfate enrichment.
- DEN01 (n = 14) plots entirely in Q4, with strongly positive PC1 scores (+1.9 to +5.8) and strongly negative PC2 scores (-3.3 to -4.8).
    - These samples are driven by elevated Na, Cl, B, and EC, together with high pH and alkalinity and low dissolved metal concentrations, and represent a consistently alkaline, high-salinity groundwater chemistry.
- GLE02 (n = 8) also plots entirely in Q4, with positive PC1 scores (approximately +1.9 to +3.2) and strongly negative PC2 scores (approximately -3.2 to -4.5).
    - This distribution indicates groundwater chemistry similar to DEN01, dominated by major ions under alkaline conditions.
- GLE01 distributes across Q2, Q3, and Q4, with one sample in each quadrant, indicating pronounced temporal variability in groundwater chemistry at this bore.
    - The Q4 GLE01 sample (PC1 = +1.35, PC2 = -4.64) represents the most strongly alkaline groundwater condition observed at this location, driven by very high Na and Cl concentrations.
    - The Q2 GLE01 sample (PC1 = -0.58, PC2 = +0.27) and the Q3 GLE01 sample (PC1 = -0.68, PC2 = -0.02) plot near the KTP04-3 and KTP04-4 samples, indicating groundwater chemistry comparable to ASLP leachate for those samples during those sampling events.

FIGURE E6-7 PCA BIPLOT OF KTP ASLP LEACHATE (SQUARES) AND GROUNDWATER (DIAMONDS) CHEMISTRY



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Level 9
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