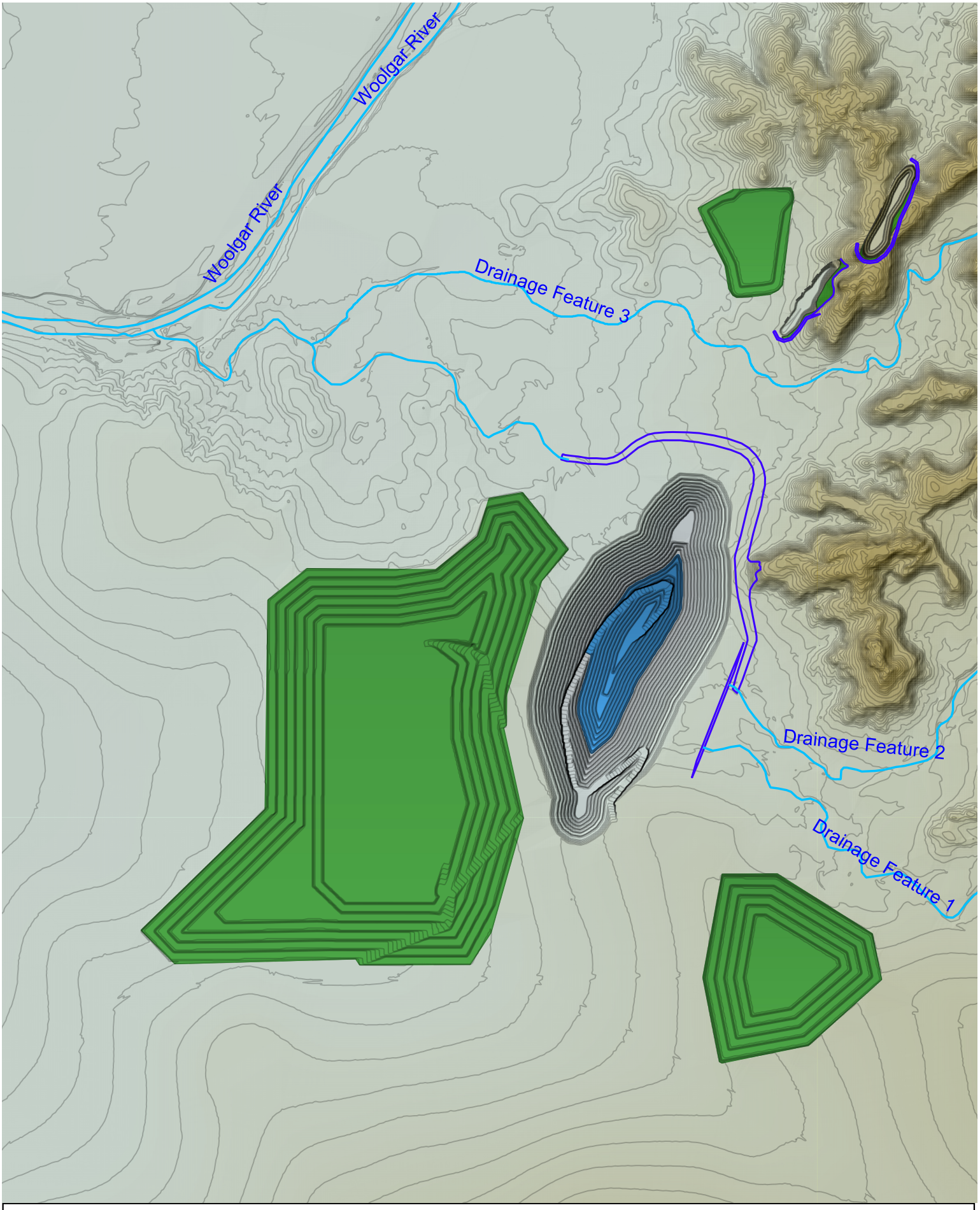


Figure 24

BVS Project
Yr 1 Catchment Lavout

egis
ENGENY

STRATEGIC MINERALS
CORPORATION PTY LTD

Legend

- Sediment Drain Direction
- Sediment Drains
- Catchments
- Clean Water Diversion
- Storage Dams
- Sediment / Process Dams
- Hardstand
- Natural
- Pit
- WRD
- Cleared
- Stockpile

0 250 500 m

Kilometers

Scale @ A4
1:<23,000>
Date: 11/11/2022
Drawn By: LN

6.2 Modelling Results

THE RESULTS OF THE FINAL VOID ASSESSMENT ARE SUMMARISED BELOW IN TABLE 29. ADDITIONALLY, FIGURE 25 TO FIGURE 27 SHOW PLOTS OF WATER LEVEL AND WATER QUALITY FOR THE BASE-CASE SCENARIO AND

Table 30 to Table 32 summarise the assessment results for the various modelled scenarios.

For BVS void:

- The BVS final void lake is likely to reach a quasi-equilibrium level in the long-term, approximately 130 years after mine closure. This occurs when the evaporative losses from the surface of the void lake match the groundwater inflows and surface runoff inputs.
- The long-term void lake water level fluctuates in the range of 224 to 240 m AHD with an average elevation of 234 m AHD. The average final void lake water level is approximately 133 m below the final void spill point elevation of 366 m AHD (base-case).
- As such, overflow from the final void to downstream drainage is extremely unlikely based on the void lake modelling results.
- The salinity of the final void water storage is likely to increase over time due to the evaporative losses from the surface of the lake. Ultimately, salts will continue to concentrate with the maximum concentration only limited by the solubility of the constituent salts within the lake. This is conceptually the case for any comparable water body receiving inflow, which experiences evaporation as either the only outflow or at a rate exceeding all other outflows. As such, the water quality in BVS is predicted to ultimately be unsuitable for any use.

For BV1 and BV2 voids:

- BV1 and BV2 Pit are not predicted to support a permanent final void lake. This occurs because the evaporative and seepage losses from the void exceed the surface runoff inputs.
- These voids will be subject to periodic filling and drying and a temporary final void lake may be present intermittently. The water level in the voids fluctuates in the range of:
  - 392 to 396.9 m AHD for BV1 Pit, with the maximum water level in the final voids being approximately 11.1 m below the final void spill point elevation (base-case).
  - 371 to 374.5 m AHD for BV2 Pit, with the maximum water level in the final voids being approximately 1.5 m below the final void spill point elevation (base-case).
- As such, overflow from the final voids to downstream drainage is extremely unlikely based on the void lake modelling results
- There is likely to be an accumulation of salts, due to repeated drying-filling cycles of the void lake.
- During the drying phase and filling phases salinity concentrations are expected to increase and reduce respectively due to the concentration and dilution of salt within each void.
- As such, any temporary lake present will ultimately be unsuitable for any use.

THE MULTIPLE SCENARIOS WHICH MODELLED FOR VARIATIONS OF KEY ASSUMPTIONS AND INPUT DATA (

Table 30 to Table 32) indicate that:

- Reduced rates of evaporation result in higher void lake levels for all voids but maximum water levels remain below the void spill point levels.
- The final equilibrium water level for BVS Pit is relatively insensitive to the groundwater inflow rate; and
- Maximum estimated water levels for BV1 and BV2 Pits remain below the void spill point level even when the assumed hydraulic conductivity of seepage loss through the pit floor is reduced by an order of magnitude (worst case scenario).

TABLE 29: BASECASE FINAL VOID HYDROLOGY ASSESSMENT RESULTS SUMMARY

Void	Surface Spill RL (M AHD)	Mean Water Level RL (m AHD)	Max Water Level RL (m AHD)	Min. Freeboard to Spill Level (m)
BVS Pit	366	234.0	240.1	125.9
BV1 Pit	408	Varies	396.9	11.1
BV2 Pit	376	Varies	374.5	1.5



FIGURE 25 – BASECASE BVS PIT FINAL VOID WATER LEVEL AND WATER QUALITY

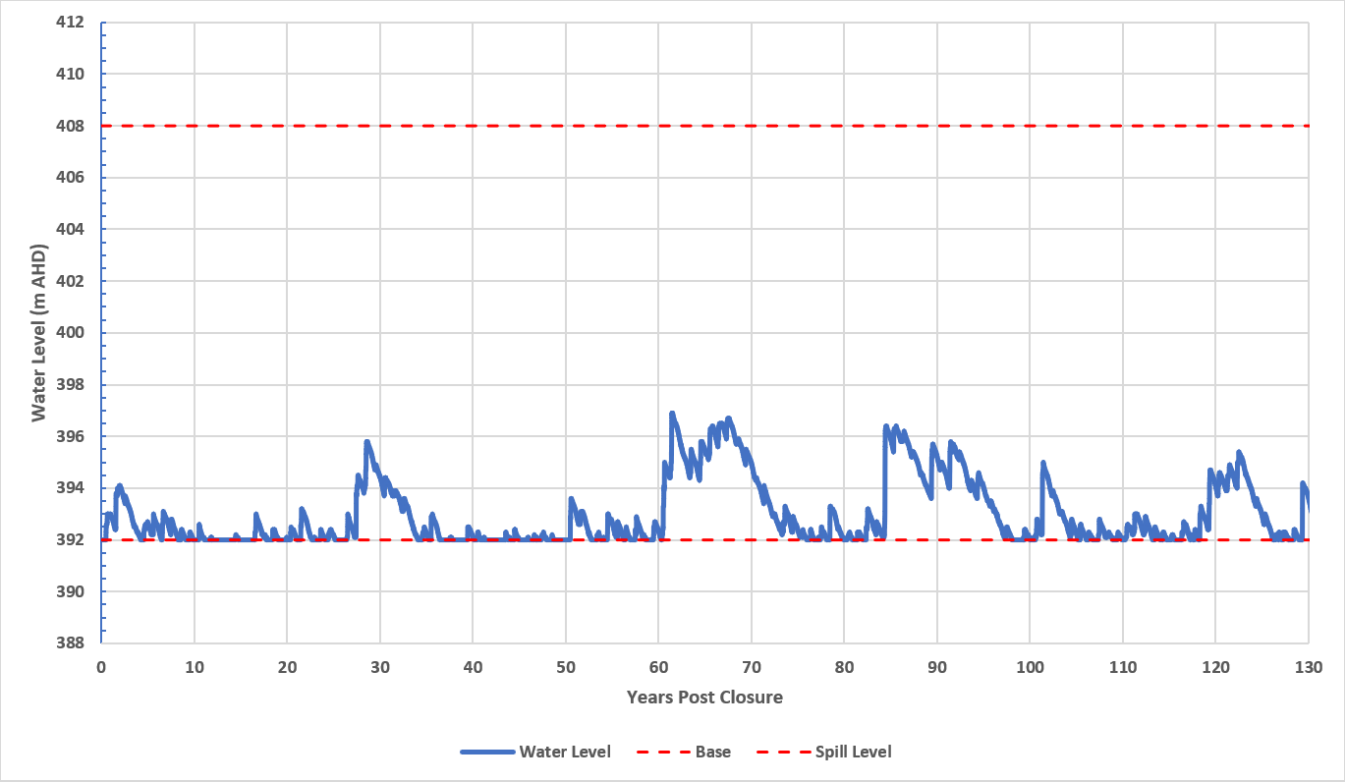


FIGURE 26 – BASECASE BV1 PIT FINAL VOID WATER LEVEL

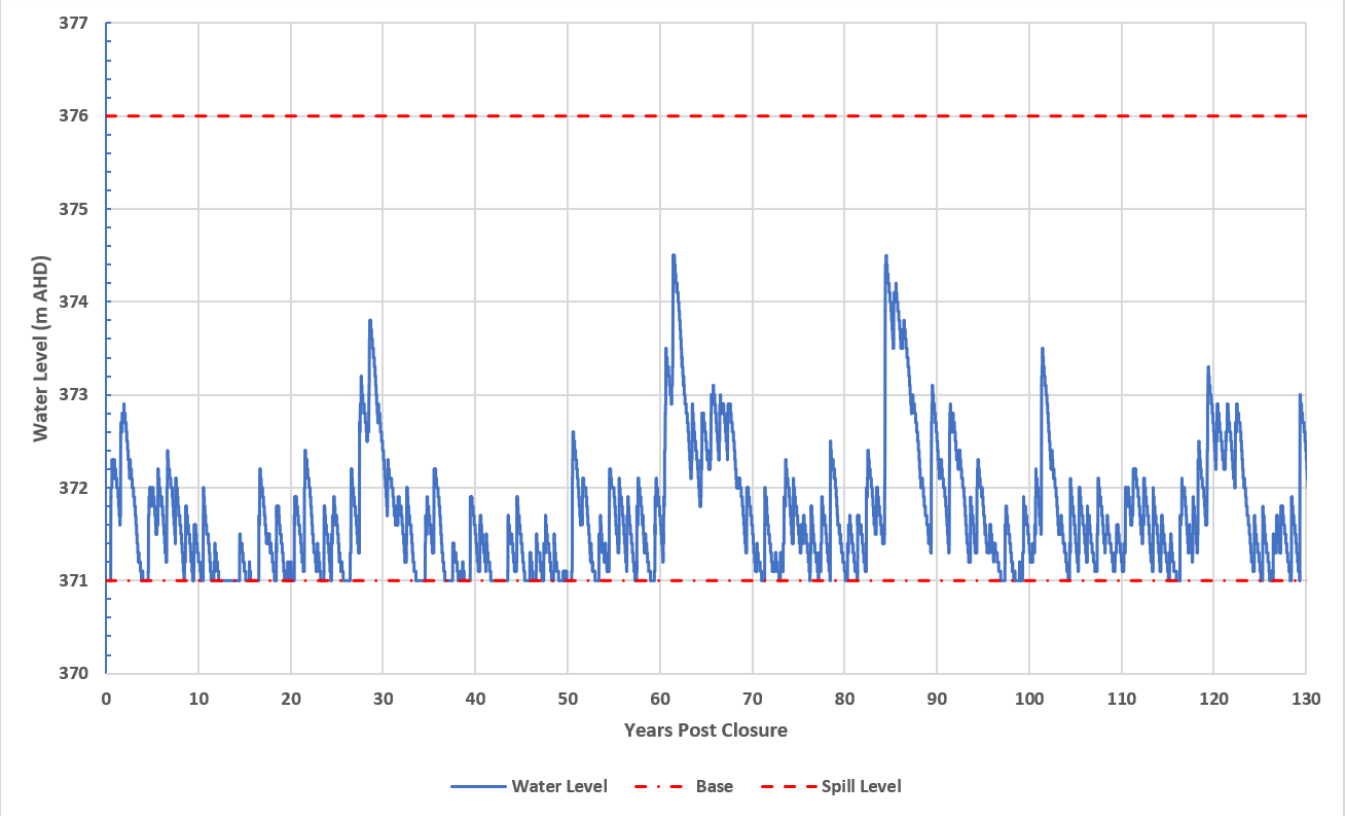


FIGURE 27 – BASECASE BV2 PIT FINAL VOID WATER LEVEL

TABLE 30: BVS PIT FINAL VOID MULTIPLE SCENARIO ASSESSMENT RESULTS

Scenario	Evaporation Factor	Groundwater Factor	Mean Water Level RL (m AHD)	Max Water Level RL (m AHD)	Min. Freeboard to Spill Level[1] (m)	Min. Freeboard to Groundwater Table[2] (m)
BVS_0 (basecase)	1	40%	234.0	240.1	125.9	104.9
BVS_1	0.9	40%	246.3	251.7	114.3	93.3
BVS_2	0.8	40%	261.2	265.9	100.1	79.1
BVS_3	0.7	40%	282.1	287.7	78.3	57.3
BVS_4	1	50%	231.8	237.9	128.1	107.1
BVS_5	1	30%	236.0	241.8	124.2	103.2
BVS_6	1	20%	237.5	243.2	122.8	101.8

1 BVS Pit spill level is at 366 m AHD

2 Groundwater table is at 345 m AHD

TABLE 31: BV1 PIT FINAL VOID MULTIPLE SCENARIO ASSESSMENT RESULTS

Scenario	Evaporation Factor	Saturated Hydraulic Conductivity (m/d)	Max Water Level RL (m AHD)	Min. Freeboard to Spill Level[1] (m)
BV_0 (basecase)	1	0.005	396.9	11.1
BV_1	0.9	0.005	397.6	10.4
BV_2	0.8	0.005	398.4	9.6
BV_3	0.7	0.005	400.0	8.0
BV_4	1	0.0005	397.1	10.9
BV_5	1	0.05	396.5	11.5

1 BV1 spill level is at 408 m AHD

TABLE 32: BV2 PIT FINAL VOID MULTIPLE SCENARIO ASSESSMENT RESULTS

Scenario	Evaporation Factor	Saturated Hydraulic Conductivity (m/d)	Max Water Level RL (m AHD)	Min. Freeboard to Spill Level[1] (m)
BV_0 (basecase)	1	0.005	374.5	1.5
BV_1	0.9	0.005	374.7	1.3
BV_2	0.8	0.005	374.9	1.1
BV_3	0.7	0.005	375.5	0.5
BV_4	1	0.0005	374.6	1.4
BV_5	1	0.05	374.3	1.7

1 BV2 spill level is at 376 m AHD

7 SURFACE WATER IMPACT ASSESSMENT

7.1 Overview of Project Effects and Impacts

Project activities that have the potential to affect surface water flow and quality include:

- Mine water discharges.
- Erosion and sedimentation.
- Water supply abstraction from the Woolgar River and associated effects on downstream flows.
- Open cut mining effects on catchment yield and associated surface flows.

The Project's surface water flow and quality effects have the potential to impact downstream surface water users and sensitive environmental features.

Section 7.2 describes the Project's surface water quality effects. The effects of the Project on surface water flow are described in Section 7.3. Sections 7.4 and 7.5 provide an assessment of the potential impacts on downstream users and sensitive environmental features. Section 7.6 describes the effects of climate change on the surface water impacts of the Project. Section 7.7 provides an assessment of the potential for cumulative impacts on surface water.

7.2 Surface Water Quality Effects

7.2.1 Mine Water Discharges

Preliminary water balance assessment of the conceptual mine water management system indicates that that the design water storage and transfer capacities are sufficient to prevent the uncontrolled (spillway) discharge of MAW to the receiving environment under historical and predicted climate change conditions.

As discussed in Section 4.2, SMC will conduct additional water balance modelling prior to the commencement of mining activities to define the controlled release requirements for MAW. As such, SMC seek EA controlled release conditions designed to ensure any controlled releases do not result in environmental harm to the receiving environment. The controlled release water quality limits will align with the relevant *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018) limits for aquatic ecosystem protection or baseline receiving water quality, in order to ensure the protection of the receiving environment, including downstream aquatic ecology.

7.2.2 Erosion and Sediment Control

An Erosion and Sediment Control Plan will be developed prior to commencement of construction to address erosion and the control of suspended sediment in drainage from the Project site. The Erosion and Sediment Control Plan is discussed further in Section 9.2.

With the application of appropriate controls on runoff from disturbed areas and areas at increased risk of erosion, it is expected that the Project will not result in any significant change in turbidity or suspended sediment levels in local surface waters.

7.3 Surface water Flow Effects

The baseline flooding assessment provided in Appendix A identifies that the Project infrastructure will largely remain outside of the 1:1,000 AEP Woolgar River flood extent. Accordingly, the Project is not expected to materially impact the existing flooding regime of the Woolgar River at or downstream of the Project site

No off-lease flood impacts to any other watercourses or drainage features are expected to occur.

7.3.1 Catchment Yield Effects of Mining Operations and Post-Mining Landform

Interception of surface runoff to the mine WMS includes containment of mine affected runoff from the open cut pits (BVS, BV1 and BV2), the heap leach pads, Tailings Storage Cell and the MIA/process area. The maximum

catchment area reporting to the mine WMS is approximately 670 ha (including estimated footprints associated with the RWD, MWD, heap leach stormwater pond and MIA Dam). This represents approximately 0.7% of the 107,900 ha (1,079 km^2) Woolgar River catchment located upstream of the Project. Consequently, interception of runoff from mine affected catchments by the mine WMS is not expected to have a material impact on stream flow in the Woolgar River downstream of the Project location or downstream catchment yield.

Following closure and final rehabilitation of the Project the remaining catchment area associated with the BVS, BV1 and BV2 final voids is approximately 145 Ha which is approximately 0.13% of Woolgar River catchment located upstream of the Project. Interception of runoff from the post-mining landform is therefore not expected to have a material impact on stream flow in the Woolgar River downstream of the Project location or downstream catchment yield.

7.3.2 Flow Effects of Water Supply Abstraction

As described in Section 4.3.7, raw water for the Project will primarily be sourced from the Woolgar River.

A conservative assessment of the effects of the extraction of flow from the Woolgar River for the Project has been conducted based on an average annual take of approximately 807 ML (476 ML + losses associated with evaporation and seepage). This is approximately 3.5 times more than the mean modelled annual raw water demand (228 ML, Table 23) of the Project and corresponds to 2.9% of the mean annual flow (MAF) in the Woolgar River at the Project site. This conservative extraction rate is considered unlikely to result in a significant change in the flow regime of the river downstream of the offtake for the following reasons:

- The offtake is temporary and is limited to the relatively short 11-year mine life.
- Referring to Figure 28 and Table 32, the operation of the Woolgar River offtake will not change the overall duration of flows in the Woolgar River (i.e., flows in the Woolgar River are predicted on approximately 12% of all days, under existing conditions and while the offtake is operating).
- The operation of the Woolgar River offtake will not change the duration, timing frequency or volume of low flow events (up to 5 m^3/s or 432 ML/day). This is because the offtake will not operate when the Woolgar River flowrate is 5 m^3/s or less. When flowing, streamflow in the Woolgar River is below 5 m^3/s approximately 70% of the time. This means that the offtake will have no effect on the Woolgar River flow regime 70% of the time.
- At times when the Woolgar River is flowing at greater than 5 m^3/s (i.e., approximately 30% of the days when flows present), the offtake operation is predicted to result in a relatively minor reduction in downstream river flows. The potential reduction in flow will increase to a maximum when flow is at 6.5 m^3/s and will then be proportionately reduced as the receiving flow increases. For the 25th percentile wet year, the modelled offtake is 1.9 % of the annual flow. For the 75th percentile dry year, representative of a year with lower river flows, the modelled offtake is 7.1 % of the annual flow. Given the naturally high variability in the rainfall dependent annual flows in the Woolgar River, these relatively minor reductions in flow are unlikely to be discernable from the natural variability in flow from year to year.
- Hydrological modelling completed for the flood assessment (Appendix A) indicates that the 50% AEP (1 in 2 year and typically representative of bank full discharge) flow that could engage the floodplain of the Woolgar River downstream of the Project is in the order of 300 m3/s, and significantly larger than the maximum abstraction rate of 1.5 m^3/s. Consequently, the proposed 1.5 m^3/s maximum rate of extraction will only represent a 0.5% reduction in bank full flow and hence is unlikely to result in any discernible change to the volume of flood flows or frequency of floodplain engagement in the Woolgar River. Hence, the offtake will not give rise to any changes to the frequency of flooding events along the riparian zone associated with the Woolgar River.

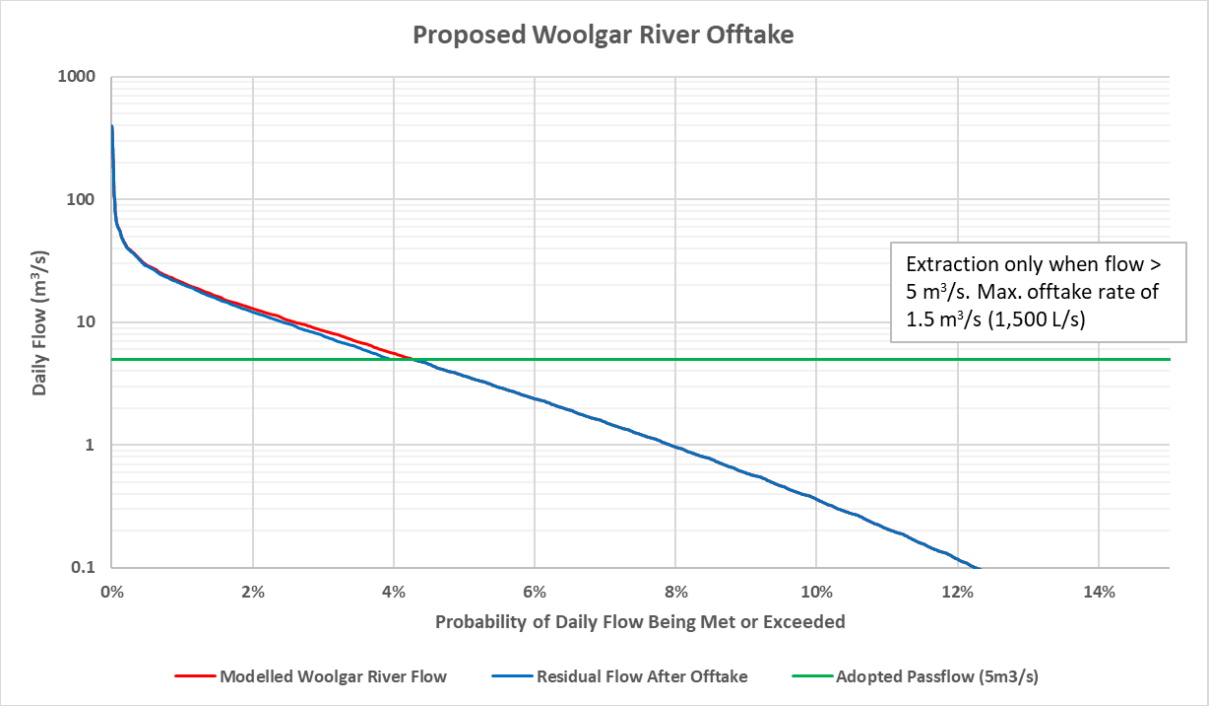


FIGURE 28 – IMPACT ON FLOW DURATION FROM PROPOSED WATER SUPPLY ABSTRACTION

TABLE 33: SUMMARY OF WOOLGAR RIVER OFFTAKE EFFECTS ON DOWNSTREAM SURFACE WATER FLOWS

Flow Scenario (m^3/s)	Daily Flow Exceedance Immediately Downstream of Proposed Extraction		
	Existing Flow	During Project Operation	Change
1	7.92%	7.92%	0.00%
3	5.46%	5.46%	0.00%
5	4.27%	4.10%	-0.17%[1]
10	2.60%	2.45%	-0.15%[1]
100	0.04%	0.04%	0.00%

1 The likelihood of being exceeded has reduced due to flow reduction

7.3.3 Flooding

As shown in Figure 29, key Project infrastructure including the open cut pits are located outside of the estimated 1 in 1,000 (0.1%) AEP flood extent and hence impacts such as flood ingress to the pits is considered very unlikely.

WOOLGAR RIVER

Drainage Line 3

Northern Waste Rock Dump

BV1 Pit

BV2 Pit

Drainage Line 3

Drainage Line 1

Drainage Line 2

Central Waste Rock Dump

Drainage Line 1

Southern Waste Rock Dump

LEGEND

- Levee Alignment
- Baseline Woolgar River Flood Extent
- Model Boundary

Peak Flood Depth (m)

- < 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- > 3.0

PRCP Final Landform
Elevation (m AHD)

- 390
- 360

R	DETAILS	DATE
1	Final Issue	10-06-2026

© COPYRIGHT Engeny
This drawing is confidential and shall only be used for the purpose of this project.

DRAWN	ET	CHECKED	AV
APPROVED	AV	DATE	10-06-2026

NOTES:

N

0 100 200 m

SCALE - 1:14,500
GDA94 / MGA zone 54

DISCLAIMER
Engeny has endeavoured to ensure accuracy and completeness of the data. Engeny assumes no legal liability or responsibility for any decisions or actions resulting from the information contained within this map.

DATA SOURCE
QLD Government Open Data Source

ENGENY
egis GROUP

STRATEGIC MINERALS CORPORATION PTY LTD

Figure 29

Big Vein South Gold Project
0.1% AEP Flood Extents

Drg Ref.
BNE00504-0004-BVS-A5-01

S:\01_Projects\BNE\BNE00504 Strategic Minerals Corporation\BNE00504_0004 BVS DETSI IR Flooding\05 Design\QGIS\Workspaces\BNE00504_0004-WOR-001-A-BVS_Tuflow_Model.qgz

7.4 Impacts on Downstream Surface Water Users

As described in Section 2.7, the 618704 and 618703 water licences to take water for rural use are the nearest approved surface water authorisations downstream of the Project. The water licences are located on the Woolgar River approximately 60 km downstream of the Project site boundary (Figure 14). As discussed in Section 2.7, the 618704 and 618703 water licences can extract 5,500 ML/year and 6,500 ML/year, respectively.

The operation of the Project and its Woolgar River offtake is not predicted to have a significant impact on flows at the location of the water licences. There will be some minor loss of stream flows due to the surface water flow effects described in Section 7.3 however these are expected to be negligible due to the distance between the Project site and the magnitude of the additional natural catchment reporting to the licences' location.

On this basis, the Project is not expected to have any adverse impacts on the downstream surface water use at the two water licences' location, or any surface water users located further downstream.

Given the lack of any significant effects on downstream flows or surface water quality, the Project will not cause any material adverse impact to any other surface water users (recreational surface water users).

7.5 Impacts on Sensitive Environmental Features

The EAR Aquatic Ecology Report provides a detailed assessment of the impacts of the Project's surface water effects on aquatic habitats, flora and fauna.

7.6 Climate Change Effects on Project Impacts

The Queensland government has produced climate change predictions for the Gulf Region that are based on a high emission scenario called the representative concentration pathway (RCP) 8.5 scenario which provides predicted changes in terms of change from the baseline climate conditions. The baseline climate conditions are the average conditions that occurred during the period 1986 to 2005.

The predicted changes utilised in the modelling are provided in Table 14 and show that:

- Average annual summer and winter rainfall is predicted to decrease by 0.3% and 9.4% respectively by 2030.
- Average autumn and spring rainfall is predicted to increase by 1.3 and 5.4% respectively by 2030.

For context, it should also be noted that:

- The Paris Agreement on climate change came into force in 2016 and aims to hold the increase in the global average temperature to below 2°C above pre-industrial levels and pursue efforts to limit temperature increase to 1.5°C. An RCP of approximately 1.9 is required to limit temperature increases to 1.5°C. Hence, the high emission scenario discussed above is conservative.
- The Project has a limited operating life of approximately 11 years. Longer term climate changes are therefore not relevant to the Project operations.
- The Project surface water assessments are based on climate data from 1/1/1889 to 1/1/2022. Hence, the data used to inform the surface water assessments already includes a proportion of the predicted changes discussed above.

The effects of the predicted climate changes on the proposed WMS will be a potential minor reduction in the long-term accumulated rainfall runoff within the system, but an increase in short-term storm events. Given the nature of the WMS (i.e. it is based on total containment of mine water) changing rainfall patterns are could potentially affect the operation of the system. However, the proponent will be required to adaptively manage the effects of these changes throughout the life of the Project through regular updates to the Water Management Plan.

As discussed in Section 4.4, the guideline *Structures which are dams or levees constructed as part of environmentally relevant activities* (Qld Gov, 2025) requires that a levee is constructed to prevent the ingress of flood water into open cut mining areas during flood events up to the 1:1,000 AEP. The open cut pits are located well outside the 1:1,000 AEP flood extents associated with watercourses (Figure 29), and at least 8 m above the flood level. Hence, the open cut mine layout has a high factor of safety in relation to flood Figure 29

inundation during the 1 in 1,000 AEP flood events. Any change in the magnitude or frequency of 1 in 1,000 AEP flood events during the operating life of the mine (due to high or low emission scenarios) is likely to be within this factor of safety.

The site drainage system has been designed with capacity to convey rainfall generated by large storm events. However, extreme storm events will still exceed this design capacity under current climate conditions. The Erosion and Sediment Control Plan will include a program for monitoring and upgrading the erosion and sediment control measures to ensure that they continue to operate effectively and in accordance with the EA conditions. These measures will be sufficient to manage any effects on the site drainage system due to changes in the frequency of extreme rainfall events over the life of the Project.

Overall, the site drainage arrangements and the conservatism in the flood modelling assumptions ensure that any increase in extreme rainfall events as a result of climate change is not likely to give rise to any significant additional environmental impacts.

7.7 Cumulative Impacts

There are no existing or approved resource Projects in the vicinity of the Project site or in the Stawell River catchment that could potentially contribute to cumulative surface water impacts with the Project.

The closest approved mining Project is the Saint Elmo Vanadium Mine located approximately 180 km south-west of the Project site. As mentioned in Section 2.7, the Saint Elmo Vanadium Mine is located on the boundary of the Flinders River sub basin and Cloncurry River sub basin. The St Elmo Vanadium Mine is located beyond the predicted extent of the Project's effects on surface water and there is no potential for the Project to contribute to cumulative impacts with the Saint Elmo Vanadium Mine.

8 SURFACE WATER MONITORING PROGRAM

The site water monitoring program will comprise:

- A WMS monitoring program, and
- A dam monitoring program.

The site water monitoring program components are described in Sections 8.1 and 8.2.

As explained in Section 4.3.5, the mine water management system modelled in this report has been designed to operate as a nil discharge system. However, SMC will update the water balance model, prior to the commencement of mining operations, including controlled releases in accordance with the EA controlled release conditions. The EA controlled release conditions will include limits on controlled release water quality and flow rates to ensure the protection of the receiving environment. The EA conditions will include controlled release monitoring requirements to ensure compliance with the EA release limits can be demonstrated.

The proponent will also establish a REMP for the Project. The REMP is a specific EA surface water management measure and is not part of the routine surface water monitoring program. Section 9.3 provides an outline of the REMP.

8.1 Site Water Monitoring Program

The purpose of the WMS monitoring program is to:

- Comply with the EA monitoring requirements for water storages and regulated structures.
- Monitor the WMS storage capacity and stored water inventory.
- Confirm the site water demands and water supply volumes, and
- Inform future updates to the water balance that enable the ongoing assessment of water supply reliability and refinement of water management strategies.

The proposed WMS monitoring program includes:

- Daily monitoring of rainfall and evaporation at an on-site weather station.
- Routine (monthly) monitoring all water storage levels (which can be determined via remote-sensing technology, routine LiDAR capture) and stored water volumes.
- Routine water quality monitoring (at least quarterly) for key water storages modelled in the site water balance model. Water quality monitoring is required for at least the following parameters however the full list of parameters in Table 3 is recommended to be monitored:
  - pH.
  - Electrical Conductivity.
  - Total Suspended Solids.
  - Turbidity.
  - Key metals as outlined in Table 3.
- An annual survey of the Project water storage capacity, prior to the onset of the wet season; and
- Monthly monitoring of all Project water demands.

8.2 Dam Monitoring Program

A dam monitoring program will be established and maintained throughout the operating life of the mine to maintain the structural integrity of the dams that form part of the WMS and ensure that there are no significant risks of adverse effects on downstream surface waters. The dam monitoring program will address the EA requirements for regulated dams and will include:

- Regular inspections and annual survey of the dam embankments and inundation areas.
- Regular inspection of the dam spillways.

- Annual engineering inspection of the regulated dam embankments and spillways, and
- Surface water monitoring in accordance with the surface water monitoring program, including the stored water volume and level.

If the monitoring program identifies structural issues, SMC will action the repair/remediation of these issues including detailed engineering assessments where required. This monitoring process ensures the early identification of any potential safety and environmental risks associated with the operation of the dams.

9 MANAGEMENT MEASURES

The following sections provide an overview of the environmental management plans relevant to the management of surface water impacts from the Project. These management plans are standard EA requirements and will be prepared by SMC prior to commencement of the Project.

9.1 Water Management Plan

The EA will include a condition that requires the development and implementation of a Water Management Plan.

SMC will prepare a Water Management Plan that addresses the following standard requirements:

- Provide for effective management of actual and potential environmental impacts resulting from water management associated with the mining activities carried out under the EA, and
- Be developed in accordance with relevant guidelines and include:
  - A study of the source of contaminants.
  - A water balance model for the site.
  - A WMS for the site.
  - Measures to manage and prevent saline drainage.
  - Measures to manage and prevent acid rock drainage.
  - Contingency procedures for emergencies, and
  - A program for monitoring and review of the effectiveness of the Water Management Plan.

The Water Management Plan will be reviewed and updated annually prior to the onset of the wet season to ensure that it continues to operate effectively.

The annual Water Management Plan reviews will involve:

- Inspection of the water management infrastructure and potential sources of contaminants.
- Review of surface water monitoring results.
- Site water balance modelling updates, as necessary, and
- Review and update of management measures and contingency procedures, as necessary.

9.2 Erosion and Sediment Control Plan

SMC will develop and implement an Erosion and Sediment Control Plan for all stages of the Project.

The Erosion and Sediment Control Plan will address the management of erosion and sedimentation within the Project site.

The Erosion and Sediment Control Plan will be prepared in accordance with the principles of the BPESC guideline and a tiered approach to the control of erosion and sediment, including (in order of priority): controlling erosion through soil management, controlling erosion through drainage management, and controlling sedimentation.

The following soil management strategies will be implemented (where practical) to control erosion:

- A ground disturbance permit process will be utilised for all ground disturbance and includes consideration of the potential for disturbance to cause erosion and sediment issues prior to disturbance commencing.
- Vegetation clearing will be conducted progressively so that the minimum area necessary for construction and operations is cleared at any time.
- Earthmoving plant operators will be trained and/or supervised to ensure that ground disturbance is conducted in accordance with erosion and sediment control requirements.
- Earthworks batters will be constructed to stable slopes and re-vegetated soon after construction.

- Earthworks areas will be landscaped and re-vegetated as soon as possible after construction is completed, and
- Disturbed mining areas will be progressively rehabilitated once they become available.

The overarching drainage strategies to control erosion are as follows:

- Drainage will be diverted around disturbed areas, where practical, to prevent erosion.
- Erosion protection will be installed where necessary to limit erosion of disturbed areas, and
- Slope drainage controls will be installed where necessary to limit slope lengths and runoff velocities from disturbed areas.

The sedimentation management strategy involves the installation of sediment controls downstream of disturbed areas to collect suspended sediment prior to stormwater drainage from the site. Proposed sediment controls include:

- Sediment traps and sumps, and
- Settling ponds and sediment dams.

Section 4.4.11 provides additional details of the specific strategies that will be implemented for key Project areas and activities in order to control erosion and sedimentation.

The Erosion and Sediment Control Plan will include a program for regular maintenance of all erosion and sediment controls to ensure their continued proper functioning.

9.3 Receiving Environment Monitoring Program

The Water Management Plan will be operated in parallel with a REMP.

The proponent will develop and implement a REMP in accordance with the EA conditions to monitor, identify and describe any adverse impacts to downstream surface water quality, flows and associated environmental values due to mining activities.

The REMP will address the following standard EA requirements:

- Assess the condition of receiving waters within the REMP area, including background water quality characteristics based on accurate and reliable monitoring data that takes into consideration temporal variation (e.g. seasonality).
- Be designed to facilitate assessment against water quality objectives for the relevant environmental values that need to be protected.
- Include monitoring from background reference sites (e.g. upstream or background sites) and sites located downstream of the Project site.
- Specify the frequency and timing of sampling required in order to reliably assess ambient conditions and to provide sufficient data to derive site specific background reference values in accordance with the *Queensland Water Quality Guidelines* (DERM, 2009). These site-specific reference values can then be used to update the interim guideline values.
- Include monitoring and assessment of relevant parameters in surface waters and, where appropriate, sediments and macroinvertebrates.
- Describe sampling and analysis methods and quality assurance and control, and
- Incorporate stream flow and hydrological information in the interpretations of water quality and biological data.

The REMP findings will be reviewed and reported annually by an appropriately qualified person and made available to DETSI upon request. The annual REMP report will specifically:

- Include all monitoring results collected from the REMP.
- Provide analysis and interpretation of the monitoring results.
- Provide an assessment of:
  - Background reference water quality.
  - Downstream water quality.
  - Compliance with relevant water quality objectives, and
  - The suitability of the current discharge criteria to protect downstream environmental values.

The annual REMP report will also include recommended actions and timeframes to ensure actual and potential environmental impacts are effectively managed, and identification of any amendments required to the REMP.

10 CONCLUSIONS

10.1 Baseline Surface Water Setting

The Project is located adjacent to the Woolgar River in the Flinders River Basin in a remote location, which at times has been difficult to access particularly during the wet season for collection of baseline surface water quality data. The surface water receiving environment is characterised by highly ephemeral and episodic streamflow resulting from the strongly seasonal rainfall distribution. The EPP Water does not currently declare environmental values or WQOs for the Flinders River Basin or any of its sub-catchments. Based on a review of the Project site surface water characteristics and surface water users, the following environmental values have been nominated as relevant to the Project:

- Aquatic ecosystems (for protection of slightly disturbed waters).
- Agriculture (including stock watering).
- Recreational use.

Interim guideline values have been proposed for the Project, based the QWQG framework and based on the latest Australian and New Zealand Guidelines for Fresh and Marine Water Quality guideline values.

10.2 Project Mine Water Management System

The conceptual design of the Project water management system has been developed in line with current management practice for mine water management. Assessment of the Project indicates that the proposed mine WMS meets the objectives and considerations outlined within Section 4.1. In summary:

- Clean stormwater runoff originating from undisturbed clean catchments will, wherever practical and achievable, be passively diverted around mine-affected areas using diversions, catchment drains and bunds.
- Potentially mine affected stormwater runoff will be collected at source and conveyed to the MWD.
- Volumes of MAW stored onsite are minimised through their preferential re-use wherever possible.
- Collection and containment of MAW has been optimised to ensure that there is no discharge of MAW (based on historical and predicted future climate conditions).
- A preliminary CCA has been completed for all proposed Project water management structures and where relevant regulated structures have been conceptually designed to meet the applicable performance criteria provided by the DETSI *Manual for assessing consequence categories and hydraulic performance of structures* (Qld Gov, 2025).
- A preliminary assessment indicates that no Project dams will be referrable under the Water Supply Act. The largest dam proposed for the Project - the Raw Water Dam - will not meet any of the criteria for impact assessment and as such is not considered referrable.
- Reliance on an external raw water source has been minimised through the preferential re-use of MAW for Project water demands for which it is suitable (process demand and dust suppression).
- Makeup raw water supply will primarily be provided by surface water extraction from the Woolgar River. SMC has commenced the Queensland Government process for securing a water licence.
- Final void water balance modelling indicates that the residual voids (BVS and BV1 and 2) are not expected to overflow to the receiving environment.

10.3 Impacts and Management Measures

- The Project mine water management system has been designed to operate as a nil discharge system. However, SMC will update the mine water balance modelling as part of the development of the Mine Water Management Plan, prior to the commencement of mining activities, including the controlled release of any excess water. Controlled release EA conditions will be included to ensure the releases do not cause environmental harm to the receiving environment.

- Erosion and sedimentation will be managed through appropriate selection of controls. With the application of appropriate controls on runoff from disturbed areas and areas at increased risk of erosion, it is expected that the Project will not result in any significant change in turbidity or suspended sediment levels in local surface waters.
- The Project infrastructure will largely remain outside of the 1:1,000 AEP Woolgar River flood extent. Accordingly, the Project is not expected to materially impact the existing flooding regime of the Woolgar River at or downstream of the Project site.
- Interception of runoff from mine affected catchments by the mine WMS or final landform is not expected to have a material impact on stream flow in the Woolgar River downstream of the Project location or downstream catchment yield.
- The proposed raw water abstraction is unlikely to result in any material impacts to downstream flows in the Woolgar River.
- There are no predicted impacts on downstream surface water users or sensitive environmental features.
- There are no existing or approved resource Projects in the vicinity of the Project site that could potentially contribute to cumulative surface water impacts with the Project.

Key monitoring and management measures that the Project will undertake to minimise potential impacts include:

- Develop and implement a Water Management Plan and Erosion and Sediment Control Plan.
- Implement site surface water monitoring program and REMP for receiving environment monitoring.
- Dam monitoring and inspection regime for maintenance of the WMS.

11 REFERENCES

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APPENDIX A:
BASELINE FLOODING REPORT

ENGENY

STRATEGIC MINERALS CORPORATION PTY LTD

Baseline Flood Assessment

Big Vein South Gold Project

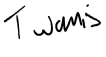
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6 JULY 2026

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1. INTRODUCTION

This report documents baseline flood modelling of the Woolgar River undertaken by Engeny Australia Pty Ltd for the Big Vein South Gold Project (the Project). The Project is a greenfield open cut gold mine in North Queensland (refer Figure 1.1) and is planned to be developed by Strategic Minerals Corporation Pty Ltd (SMC).

The Woolgar River is located along the northern boundary of the Project and is the only watercourse in the vicinity of the Project. A number of smaller drainage features flow through the Project area towards the Woolgar River.

This report is a flood plain model report that defines the extent of baseline Woolgar River flooding within the Project area, including delineation of the flood plain, relevant to the Project area, in accordance with Section 3.4 of the Department of Environment, Tourism, Science and Innovation (DETSI) *Statutory Guideline – Progressive rehabilitation and closure plans* (ESR2019/4964) (PRCP Guideline) and the DETSI *Information Sheet – Voids in Flood Plains* (ESR/2019/4966).

Table 1.1 indicates how the requirements of the PRCP Guideline for a flood plain model report have been addressed in this report. Some of the Guideline requirements are addressed directly in Table 1.1.

TABLE 1.1: PRCP GUIDELINE REQUIREMENTS FOR A FLOOD PLAIN MODEL REPORT

PRCP Guideline Requirement	How Guideline Requirement Has Been Addressed	Section of Report
Details of the data used to develop the model in accordance with section 4.13.3. of the ARR.	The data used to develop the flood models is detailed in Sections 3.2 and 3.3. The flood modelling has been performed in accordance with the latest ARR Guidelines.	Sections 3.2 and 3.3
Identification of all artificial features proposed or present within the tenure boundary.	Artificial features proposed within the tenure boundary are identified in Section 2.1. Artificial features have not been included in the flood plain modelling in accordance with the Voids in Flood Plains Information Sheet.	Section 2.1
Identification of all watercourses within the immediate catchment with the Strahler method of stream ordering applied.	Watercourses and stream ordering in the vicinity of the Project area are identified in Section 2.2.	Section 2.2
Identification of any approved permanent watercourse diversions within the tenure boundaries and the relevant approval of the diversion.	The Project does not involve any approved watercourse diversions. A drainage feature diversion around the BVS Pit is proposed but this drainage feature is not a relevant watercourse.	This table.
Consideration of how groundwater may impact the flood plain extent.	The Woolgar River is an ephemeral watercourse with groundwater-driven baseflows only persisting for short periods and at low flow rates following significant stream flow periods. For this reason, groundwater does not impact the flood plain extent within the Project Area.	Section 3.2.1
A hydrologic model.	The flood plain modelling of the Woolgar River has utilised a RORB hydrologic model.	Section 3.2.1
A hydraulic model.	The flood plain modelling of the Woolgar River has utilised a TUFLOW two-dimensional hydraulic model.	Section 3.3
Model assumptions and limitations.	Flood modelling assumptions and limitations are described in Sections 3.2, 3.3 and 3.4.	Sections 3.2, 3.3 and 3.4.
Model calibration and sensitivity analysis.	There is no historical flooding information in the vicinity of the Project area that would allow the flood models to be directly calibrated. The hydrology model has been validated against downstream stream flow gauging data for the Woolgar River and flood estimation methods for ungauged catchments. The outcomes of this assessment of whether any of the Project voids are located in flood plains is not sensitive to any modelling assumptions or parameters. For this reason, no modelling sensitivity analysis has been undertaken.	Sections 3.2, 3.3 and 3.4.
Spatial data outlining the extent of the flood plain.	Spatial data outlining the extent of the 0.1% AEP flood plain is provided in Figure 3.2 and Figure 3.3.	Section 3.4



Figure 1.1: Project Location

2. BACKGROUND

2.1 Project Description

The Project involves the construction and operation of an open cut gold mine on a greenfield site in North Queensland. The Project site covers an area of approximately 2,281 ha and is located approximately 100 km north of Richmond and 380 km west of Townsville (Figure 1.1).

Open cut mining will be conducted using excavators and trucks. Gold ore will be processed on site to produce gold dore (solid bars containing gold alloy). The mine's peak production rate will be up to 1.95 million tonnes per annum (Mtpa) of run of mine (ROM) gold ore, yielding up to approximately 100,000 ounces of gold dore per annum. The mine life will be approximately 11 years.

The following mining and ore processing activities will be undertaken as part of the Project:

- Developing three open cut pits, as follows:
  - The main Big Vein South Pit (BVS Pit) located in the centre of the Project site (Figure 2.1). Waste rock from this pit will be hauled by truck and stored in the Central and Southern Waste Rock Dumps (WRDs).
  - Two small satellite pits, BV1 Pit and BV2 Pit, located in the northern part of the Project site (Figure 2.1). Waste rock from these pits will be stored in the Northern WRD.
- Transporting mined ore in haul trucks from the open cut pits to the ROM area ore stockpiles located near the mine processing facilities at the southern end of the project site (Figure 2.1).
- Processing ore from the BV1 and BV2 Pits in the first 2 years of mining using Heap Leach Pads and gold elution.
- Processing ore mined from the BVS Pit in an on-site Carbon In-Leach (CIL) Plant from Year 3 onwards. The heap leaching process will generate spent heap leach residues. These residues will be reprocessed in the CIL Plant over the life of the mine. The CIL Plant will generate wet tailings and dewatered tailings. Wet tailings will be pumped to a Tailings Storage Cell. Dewatered tailings will be stored with waste rock in the Central WRD.
- Transporting dore bars from the site via plane to a refinery.

The majority of the mine infrastructure will be located at the southern end of the project site (Figure 2.1). Key mine infrastructure will include ore processing facilities, workshop, warehouse, administration buildings, haul roads and access roads, vehicle servicing, refuelling and wash down facilities, fuel storage facilities, diesel and solar power station, water supply and water management infrastructure. Workforce accommodation and a private airstrip will also be located at the southern end of the Project site.

2.2 Existing Surface Drainage

The Project is located in the headwaters of the Woolgar River catchment within the Flinders River Basin. The Woolgar River is a major tributary of the Stawell River which drains into the Flinders River downstream of the township of Richmond.

The drainage features in the vicinity of the Project are shown in Figure 2.2. The Woolgar River flows in a south-westerly direction through the north-western corner of the Project Mining Lease (ML) area. A number of un-named drainage features are located within the northern and central parts of the Project area. These drainage features generally flow in a westerly direction towards the Woolgar River and originate from a natural ridgeline to the east of the mining lease area that divides the Woolgar River and Patience Creek catchments. The topography in the southern parts of the Project area is flatter than the northern and central areas and there are no mapped drainage features in this part of the project area.

The Woolgar River is a 6th order stream (according to the Strahler stream order classification system) at the project area with an upstream catchment area of approximately 1,079 km^2. The smaller drainage features (tributaries of the Woolgar River) within the Project area are mostly 1st and 2nd order streams; however, the primary drainage feature in the central part of the mining lease area (named as Drainage Feature 1 on Figure 2.2) becomes a 4th order stream at the confluence with Drainage Feature 3 at a location 400m upstream of the western Project area boundary prior to discharging into the Woolgar River (refer Figure 2.3).

A watercourse determination for the project area was performed by the Department of Natural Resources, Mines and Energy in 2020 and determined that the Woolgar River is a watercourse as defined in the *Water Act 2000,* while the smaller drainage features within the mining lease area are all drainage features (i.e. not watercourses).

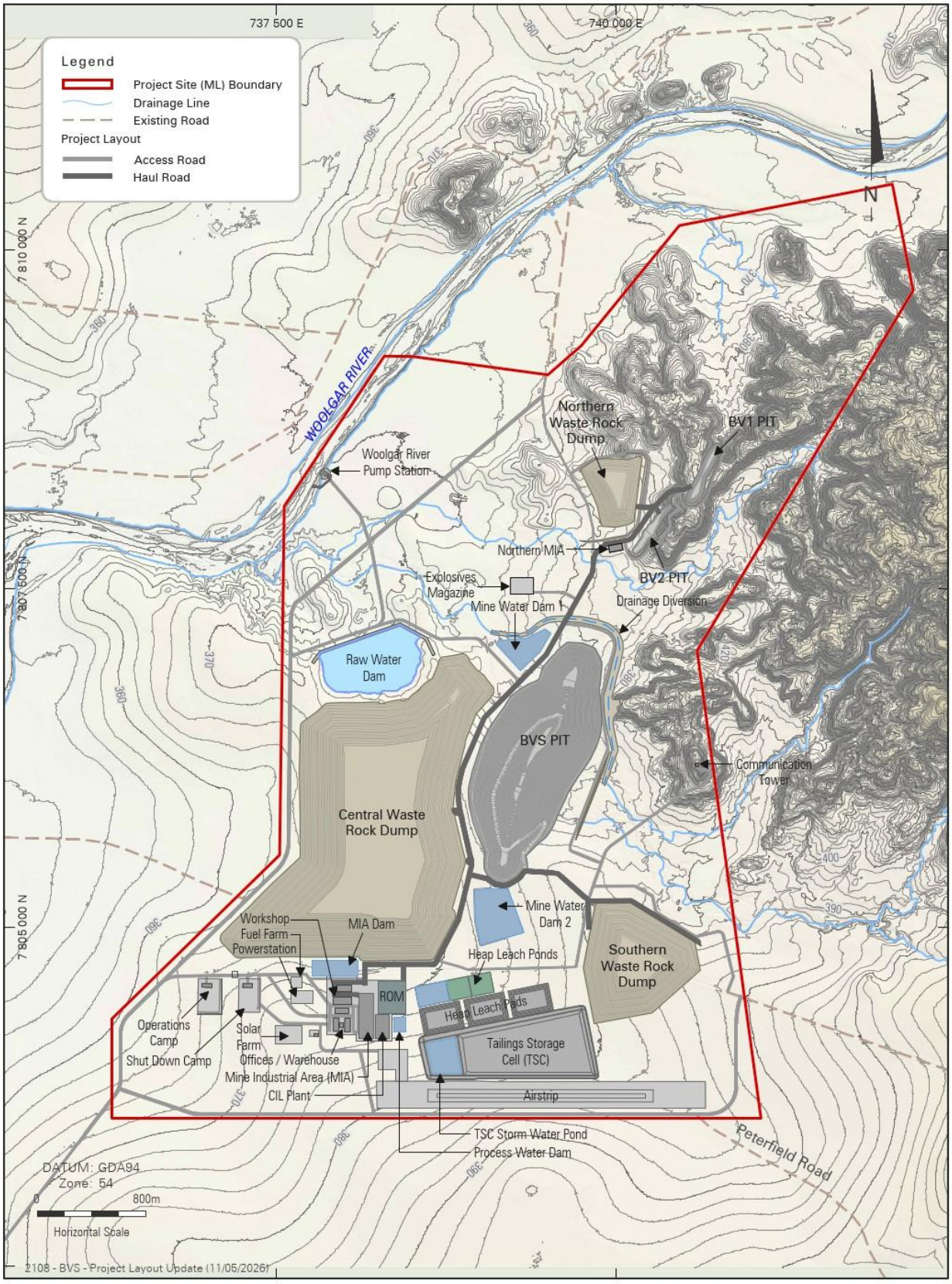


Figure 2.1: Project Layout

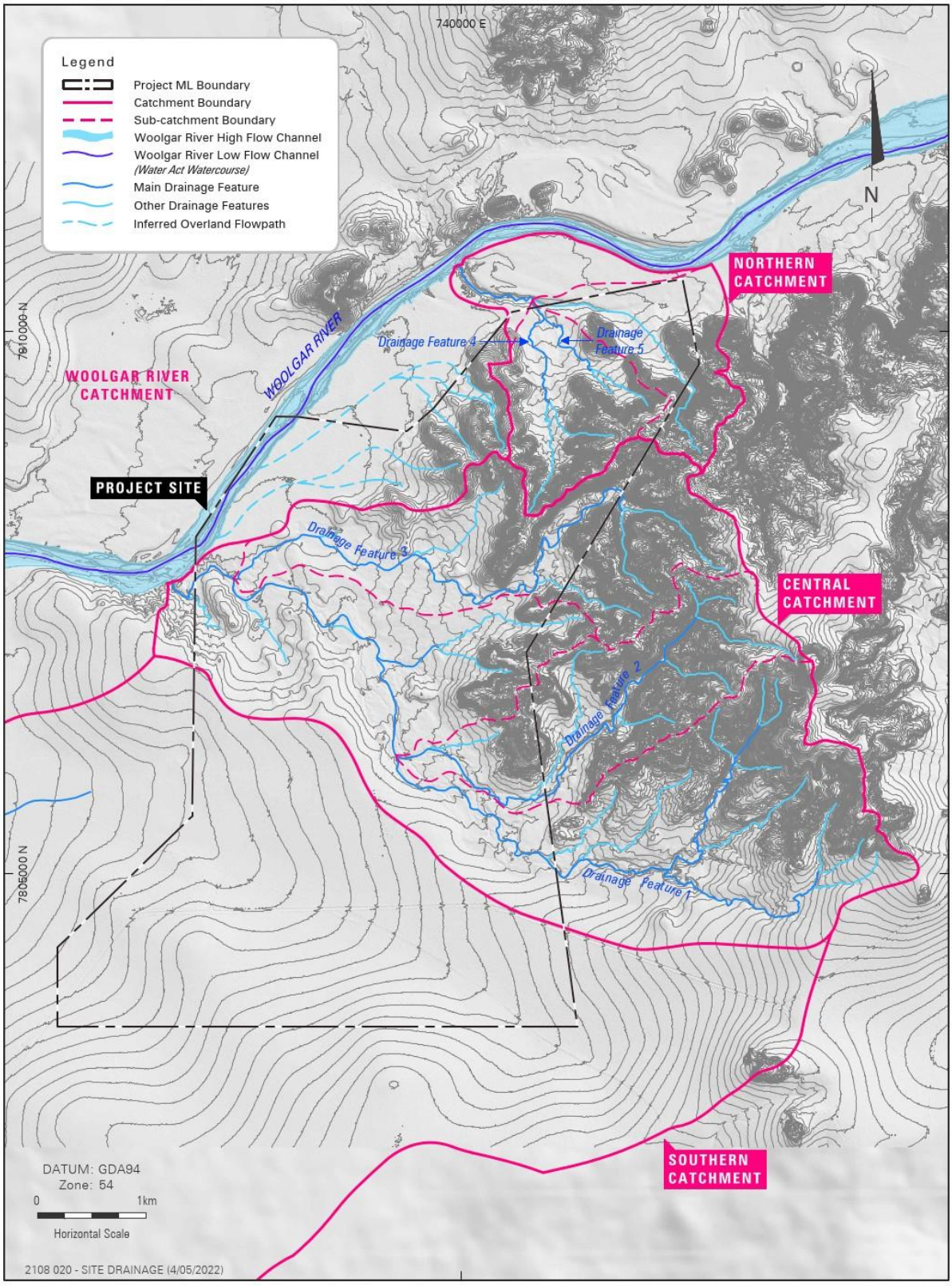


Figure 2.2: Site Drainage Plan

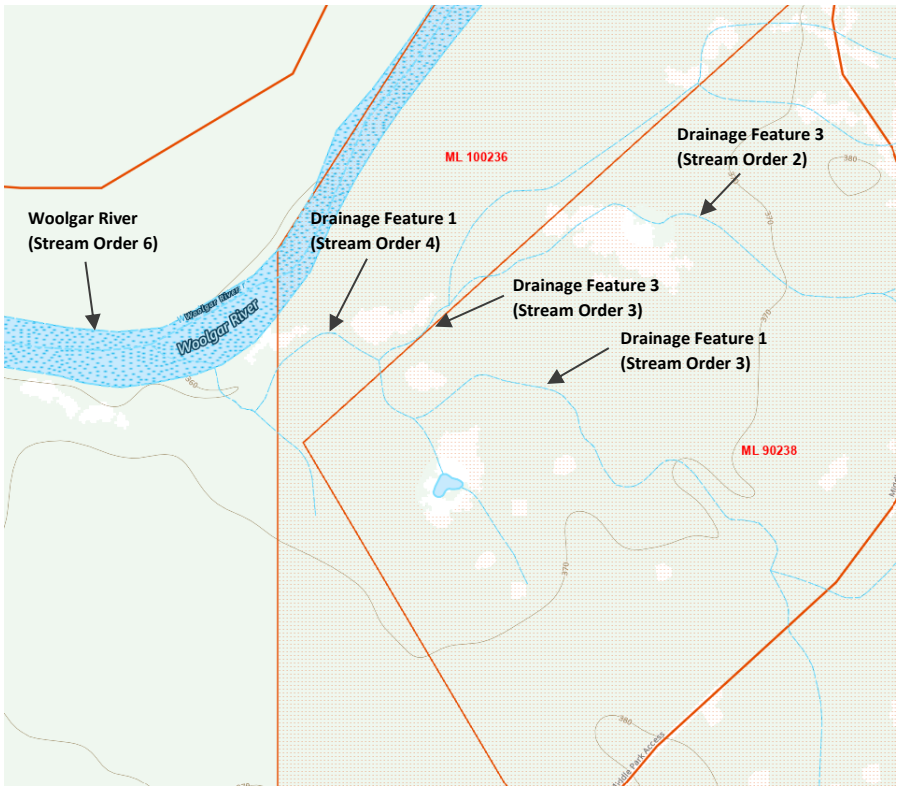


Figure 2.3: Section of Drainage Feature 1 that has a Stream Order of 4

3. BASELINE FLOOD MODELLING

3.1 Overview

Baseline (i.e. pre-mining) flood modelling was undertaken for the relevant watercourses (watercourses classified as stream order 4 or higher as specified in the DETSI Voids in Flood Plains Information Sheet) in the vicinity of the Project area. The baseline flood modelling was undertaken in accordance with the procedures described in the 2019 version of Australian Rainfall and Runoff: A Guide to Flood Estimation (ARR19) (Ball, et al., 2019). The assessment has also been guided by the DETSI PRCP Guideline and Voids in Flood Plains Information Sheet.

The relevant watercourses in the vicinity of the Project are the Woolgar River (stream order of 6) and the short reach of Drainage Feature 1 that has a stream order of 4 near the western Project area boundary. A flood modelling study of the drainage features that flow through the Project area (Engeny, 2026) identified that the flood plain extent for the short reach of Drainage Feature 1 that has a stream order of 4 is located entirely within the 0.1% AEP flood plain extent for the Woolgar River (refer Appendix A). For this reason, flood plain modelling for the short reach of Drainage Feature 1 that has a stream order of 4 is not included in this report since it is included within the Woolgar River flood plain extent.

Section 6 of the Voids in Flood Plains Information Sheet specifies that for a greenfield site, the flood plain modelling must be based on catchment data outside and inside the tenure prior to mining activities commencing, and that the impact of mining operations on the flood plain once commenced must not be included in the flood plain modelling. For this reason, no artificial features associated with the Project (e.g. pits, waste rock dumps, etc.) have been included in the flood plain modelling.

Baseline hydrology modelling of the Woolgar River was undertaken using the URBS rainfall runoff modelling software, while hydraulic modelling of the Woolgar River flood plain was undertaken using the TUFLOW two-dimensional hydraulic modelling software.

The baseline flood modelling was undertaken for the 0.1% (1 in 1,000) Annual Exceedance Probability (AEP) and Probable Maximum Flood (PMF) design flood events. The 0.1% AEP event is the relevant flood event for the delineation of flood plains specified in the DETSI Voids in Flood Plains Information Sheet. The 0.1% AEP flood event has a 0.1% probability of being exceeded in any year and would be expected to occur on average once in a 1,000 year period. The PMF is an upper limiting flood event that represents the largest flood event that could feasibly occur at a given location. In theory, the PMF event has a 0% exceedance probability (i.e. it can't be exceeded) but in practice the exceedance probability of the PMF event is related to the accuracy of the design rainfalls (Probable Maximum Precipitation) for the PMF event. The Australia Rainfall and Runoff publication (Ball, et al., 2019) identifies the AEP of the PMF event as approximately 1:1,000,000 to 1:10,000,000 (i.e. close to 0% annual exceedance probability).

The baseline flood modelling for the Woolgar River was undertaken for the "Current and near term (2021 to 2040) – SSP3-7.0" climate scenario in accordance with Australian Rainfall and Runoff Version 4.2. This climate scenario factors in historical climate change during the period of historical rainfall records and expected future climate change over the period 2021 to 2040. The current/near-term horizon is appropriate for the delineation of flood plains for mining voids since it is the pre-mining flood plain that needs to be delineated.

The Shared Socioeconomic Pathway (SSP) SSP3-7.0 represents a high future greenhouse gas emissions scenario as indicated in Table 3.1 and is a conservative climate change scenario to use for a flood assessment since design rainfall intensities are expected to increase with increasing greenhouse gas emissions and corresponding global warming. An assessment of the emissions scenarios by Hausfather and Peters (2020) described the SSP5–8.5 scenario as highly unlikely, SSP3–7.0 as unlikely, and SSP2–4.5 as likely.

TABLE 3.1: SHARED SOCIOECONOMIC PATHWAYS IN THE IPCC SIXTH ASSESSMENT REPORT (IPCC, 2021)

SSP	Scenario Description	Estimated changes in global surface temperature relative to 1850–1900		
		Near term (2021-2040)	Mid-term (2041– 2060)	Long term (2081– 2100)
SSP1-1.9	Very low GHG emissions: CO_2 emissions cut to net zero around 2050	1.5°C	1.6°C	1.4°C
SSP1-2.6	Low GHG emissions: CO_2 emissions cut to net zero around 2075	1.5°C	1.7°C	1.8°C
SSP2-4.5	Intermediate GHG emissions: CO_2 emissions around current levels until 2050, then falling but not reaching net zero by 2100	1.5°C	2.0°C	2.7°C
SSP3-7.0	High GHG emissions: CO_2 emissions double by 2100	1.5°C	2.1°C	3.6°C
SSP5-8.5	Very high GHG emissions: CO_2 emissions triple by 2075	1.6°C	2.4°C	4.4°C

3.2 Hydrology Modelling

3.2.1 Hydrology Model Development

Hydrologic modelling for the Woolgar River catchment was undertaken using the URBS rainfall runoff modelling software. The Woolgar River catchment upstream of the project area was sub-divided into 80 sub-catchment areas based on the 1 second SRTM Derived Digital Elevation Model. The Woolgar River URBS model sub-catchment layout is shown in Figure 3.1. The total catchment area of the Woolgar River is 1,079 km^2 at the Project location.

The Basic version of URBS was utilised for the hydrologic modelling of the Woolgar River catchment with the following model parameters:

- Catchment lag parameter of 0.798 (based on the regional relationship for Queensland for RORB model k_c value in ARR19).
- Routing exponent of 0.8.

Design rainfall data for the Woolgar River catchment was obtained from the following sources:

- 1% and 0.1% AEP design events: Bureau of Meteorology Intensity-Frequency-Duration (IFD) data (http://www.bom.gov.au/water/designRainfalls/revised-ifd/):
- Probable Maximum Precipitation (PMP) rainfall for PMF event: Short duration PMP rainfalls from the Generalised Short Duration Method, GSDM (Bureau of Meteorology, 2003a) and long duration PMP rainfalls from the Revised Generalised Tropical Storm Method, GTSMR (Bureau of Meteorology, 2003b).
- Design rainfall intensities for the 0.1% AEP and PMF events were adjusted to represent the "Current and near term (2021 to 2040) – SSP3-7.0" climate scenario in accordance with Australian Rainfall and Runoff Version 4.2. The climate change uplift factors for the design rainfalls ranged from 18% for 1 hour duration storms to 10% for storm duration of 18 hours and longer. Climate change adjustment factors were not applied to the 1% AEP design rainfalls since this event AEP was used only for model validation purposes (i.e. to validate the hydrology model against flood estimation methods that exclude climate change influences).

Design storm rainfall losses and temporal patterns were obtained from the ARR19 Data Hub (https://data.arr-software.org/). Design storm rainfall losses were as follows:

- 1% and 0.1% AEP events: Initial loss 22 mm, continuing loss 7 mm/hr.
- PMF event: Initial loss 0 mm, continuing loss 1 mm/hr.

Areal reduction factors (ARFs) were applied to the design rainfalls based on the catchment area of the Woolgar River at the Project (1,079 km^2). The ARFs were obtained from the ARR19 Data Hub (https://data.arr-software.org/).

The Woolgar River is an ephemeral watercourse with groundwater-driven baseflows only persisting for short periods and at low flow rates (orders of magnitude lower than the peak flood flows) following significant stream flow periods as demonstrated by the stream flow gauging data for the closed stream gauging station on the Woolgar River at Patience Creek (Station Number 915009A). For this reason, groundwater does not impact the flood plain extent within the Project Area and the minor baseflow contributions to stream flow during large flood events have been neglected in the flood plain modelling.

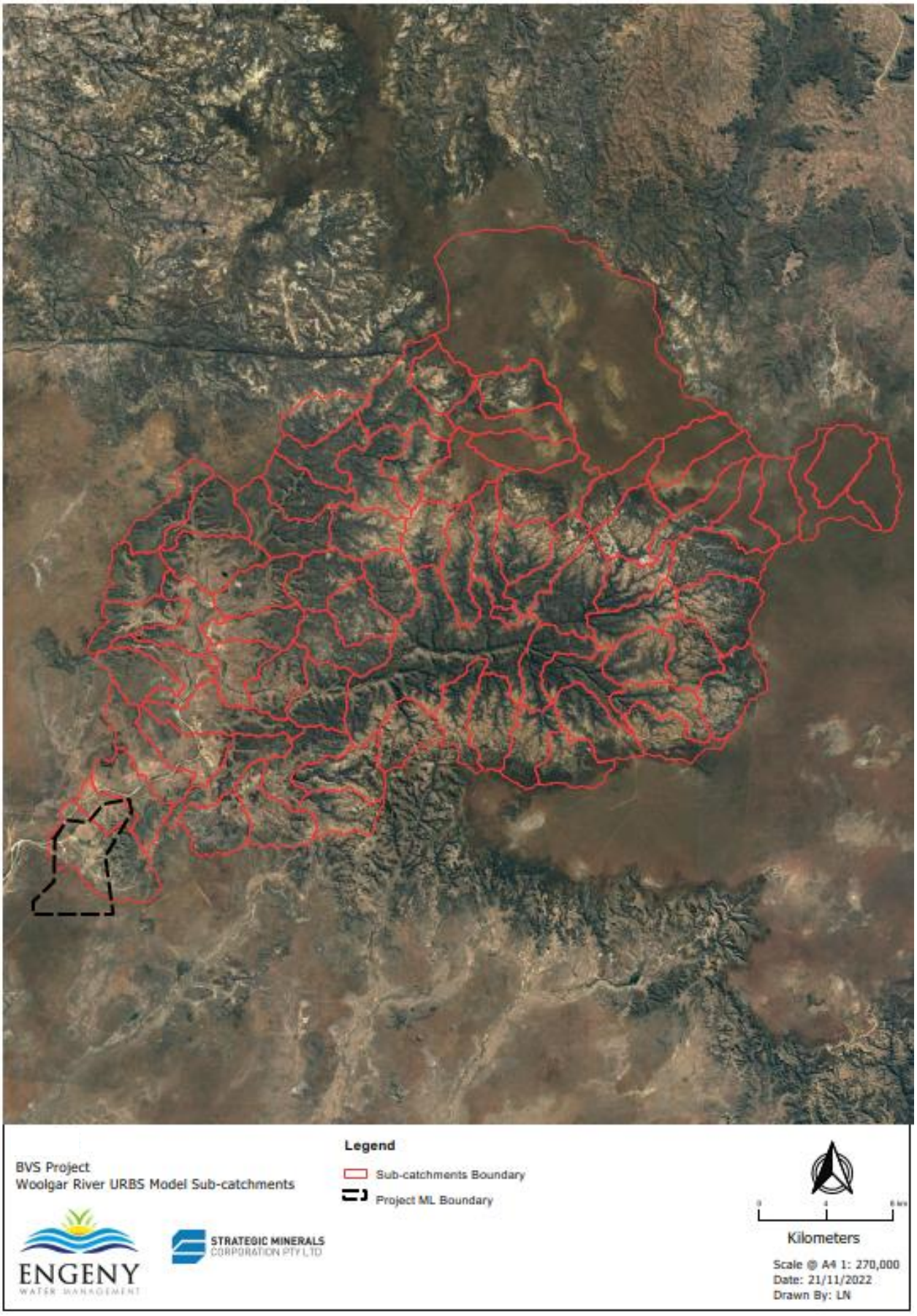


Figure 3.1: Woolgar River URBS Model Sub-catchments

3.2.2 Hydrology Model Validation

The URBS hydrology model for the Woolgar River catchment was validated by comparing the predicted 1% AEP peak flows (no climate change adjustment) in the Woolgar River at the Project location against the following flood estimation methods:

- Flood frequency analysis (FFA) for the period of record for the closed stream gauging station on the Woolgar River at Patience Creek (Station Number 915009A) with a scaling factor to reflect the larger catchment area of the gauging station (3,391 km^2) compared to the Project location (1,079 km^2).
- Regional Flood Frequency Estimation (RFFE) model as specified in Australian Rainfall and Runoff – flood estimation model for ungauged catchments in Australia.
- Quantile Regression Technique (QRT) – flood estimation model for ungauged catchments in Queensland developed by the Queensland Department of Transport and Main Roads.

The comparison of the URBS model peak flow for the 1% AEP flood event (no climate change adjustment) to the alternative flood estimation methods is detailed in Table 3.2. The 1% AEP peak flow predicted by the URBS model compares well with the alternative flood estimation methods.

TABLE 3.2: URBS MODEL VALIDATION FOR 1% AEP FLOOD EVENT

Peak Flow (m^3/s) – URBS Model	Peak Flow (m^3/s) – Scaled FFA	Peak Flow (m^3/s) – RFFE	Peak Flow (m^3/s) – QRT
1,818	1,546	1,780	2,195

3.2.3 Hydrology Model Results

The 0.1% AEP and PMF event peak flows for the Woolgar River at the Project location predicted by the URBS hydrology model for the Current and near term (2021 to 2040) climate scenario are detailed in Table 3.3

TABLE 3.3: WOOLGAR RIVER PEAK FLOWS FOR 0.1% AEP AND PMF EVENTS

Flood Event	Critical Storm Duration (hours)	Peak Flow (m^3/s)
0.1% AEP	12	4,220
PMF	12	26,500

3.3 Hydraulic Modelling

Hydraulic modelling of the existing (i.e. pre-mining) Woolgar River flood plain in the vicinity of the project was undertaken using the TUFLOW two-dimensional hydraulic modelling software.

Key details of the hydraulic modelling of the Woolgar River flood plain are as follows:

- The hydraulic model extended approximately 5 km upstream and downstream of the mining lease area.
- A two-dimensional modelling approach was used with a cell size of 10 m which is small enough to adequately represent the geometry of the low flow channel of the Woolgar River.
- Model bathymetry was obtained from a LiDAR aerial survey of the project area in 2017. The 1 second SRTM Derived Digital Elevation Model (Gallant et al., 2011) was used to represent the bathymetry of the Woolgar River floodplain downstream of the mining lease area where no LiDAR survey data was available. In accordance with the DETSI Voids in Flood Plains Information Sheet, no artificial features associated with the Project (e.g. pits, waste rock dumps, etc.) have been included in the model bathymetry.
- The following Manning's roughness values (n) were assigned based on site inspections and inspection of aerial imagery:
  - Woolgar River flow channel: n = 0.04.
  - Woolgar River flood plain: n = 0.06.
- The 0.1% AEP and PMF flood events were simulated (Current and near term (2021 to 2040) – SSP3-7.0 climate scenario).

- Flood inflow hydrographs for the critical duration rainfall event for each design flood event AEP were obtained from the URBS hydrologic model. Flood inflow hydrographs were applied at the following locations in the TUFLOW model:
  - Woolgar River at the upstream model boundary.
  - Sandy Creek (tributary of the Woolgar River) at the upstream model boundary.
  - Local catchment inflows to the Woolgar River at several locations within the model domain.
- A normal depth boundary condition was assumed for the downstream model boundary.
- There are no historical flood records available for the Project area that would allow the hydraulic model to be validated or calibrated.

3.4 Baseline Flood Mapping

Baseline (pre-mining) flood mapping was prepared for the Woolgar River based on the hydraulic modelling results and comprises:

- Peak flood levels for 0.1% AEP flood event (Figure 3.2).
- Peak flood depths for 0.1% AEP flood event (Figure 3.3).
- Peak flood levels for PMF event (Figure 3.4).
- Peak flood depths for PMF event (Figure 3.5).

The baseline flood mapping indicates that three proposed open cut pits (BVS Pit, BV1 Pit and BV2 Pit) will be located well outside of the baseline (pre-mining) flood plains of the Woolgar River for the 0.1% AEP and PMF flood events. The 0.1% AEP peak flood level in the Woolgar River is 7 m lower than the lowest existing ground elevation within the footprint of the BVS Pit, with larger elevation differences to the BV1 and BV2 Pits.

The flood models utilised for this assessment are not calibrated as a result of the lack of historical flooding information for the Project area; however, the hydrology model has been validated using regional stream flow gauging data and flood estimation methods for ungauged catchments. The outcomes of this assessment of whether any of the Project voids are located in flood plains is not sensitive to any modelling assumptions or parameters. For this reason, no modelling sensitivity analysis has been undertaken.

Woolgar River

BV1

BV2

BVS Pit

Legend

Pit Extent

ML Boundary

Tuflow Model Boundary

Flood Level (m AHD)

<356

356-361

361-366

366-371

371-376

376-381

>381

ENGENY

egis GROUP

STRATEGIC MINERALS CORPORATION PTY LTD

0 1,900 3,800

Scale in metres (1:77,000 @ A3)

Map Projection: Tranverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Vertical Datum: Australia Height Datum
Grid: Map Grid of Australia, Zone 54

DATE	29/5/2026
DRAWN	SS
JOB NO.	BNE00504_0004

STRATEGIC MINERALS CORPORATION

Big Vein South Gold Project
Regional Flood Assessment

1:1000 AEP Flood Level

A3 | Figure 3.2 | 1

Woolgar River

BV1

BV2

BVS Pit

Legend

Pit Extent

ML Boundary

Tuflow Model Boundary

Flood Depth (m)

0 - 0.3

0.3 - 0.6

0.6 - 1.0

1.0 - 1.5

1.5 - 2.0

2.0 - 3.0

3.0 - 5.0

>5

ENGENY

egis GROUP

STRATEGIC MINERALS CORPORATION PTY LTD

0 1,900 3,800

Scale in metres (1:77,000 @ A3)

Map Projection: Tranverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Vertical Datum: Australia Height Datum
Grid: Map Grid of Australia, Zone 54

DATE	12/6/2026
DRAWN	SS
JOB NO.	BNE00504_0004

STRATEGIC MINERALS CORPORATION

Big Vein South Gold Project
Regional Flood Assessment

1:1000 AEP Flood Depth

A3 | Figure 3.3 | 1