Permit

Environmental Protection Act 1994

Environmental authority EPML00753513

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPML00753513

Environmental authority takes effect on 24 August 2021

Environmental authority holder(s)

Name(s)	Registered address
Austral Resources Operations Pty Ltd	HopgoodGanim Lawyers Waterfont Place Level 8/1 Eagle Street BRISBANE CITY, QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 09: A mining activity involving drilling, costeaning, pitting or carrying out geological surveys causing significant disturbance	ML5426, ML5435, ML5446, ML5447, ML5448, ML5474, ML5476, ML5478, ML90168, ML90169, ML90170, ML90178, ML90179, ML90184, ML90233
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	
Ancillary 56 - Regulated Waste Storage Receiving and storing regulated waste	
Schedule 3 17: Mining copper ore	
Ancillary 15 - Fuel burning Using fuel burning	

ABN 46 640 294 485

Environmentally relevant activity/activities	Location(s)
equipment that is capable of burning at least 500kg of fuel in an hour	
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-ii) more than 100 but not more than 1500EP otherwise	
Ancillary 33 - Crushing, milling, grinding or screening Crushing, grinding, milling or screening more than 5000t of material in a year	
Ancillary 30 - Metal smelting and refining 1: Processing in a year (d) more than 10,000t of metals or metalloids	

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.
An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.
A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days) that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term ‘duty to notify’.

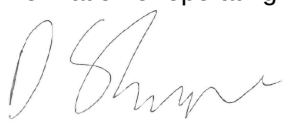
Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.
If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.



Dean Sharpe
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

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Date issued: 24 August 2021

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Schedule A – General

A1 This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority holder is silent on a matter, the lack of a condition or silence does not authorise environmental harm.

A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule K – Figure K1(a) - Lady Annie Mine Area Layout, Figure K1(b) - Mount Kelly Infrastructure and Mine Area Layout and Figure K1(c) - Anthill Mine Area Layout and Schedule A – Table 1 (Authorised Mining Activities).

Schedule A – Table 1 (Authorised Mining Activities)

Mine Domain	Mine Feature Name	Tenure	Map Reference (GDA94, MGA, Zone 54)		Maximum area of disturbance (ha) for mine feature	Maximum area of disturbance (ha) allowing for nested and/or collocated features and/or combined disturbance areas
			Easting	Northing		
Infrastructure lease						
Infrastructure	Linear Infrastructure Corridor - Water pipeline, Power line, track	ML90178	304340	7814528	38.1	38.1
Lady Annie area						
Pits	Lady Annie Pit	ML90179	295418	7812234	46.8	61.2
	Lady Brenda East Pit	ML90179	295014	7811779	14.4	
	Lady Brenda West Pit	ML90179	294699	7811941		
Waste rock dumps, overburden dumps, spoil piles and stockpiles	Lady Annie North Waste Rock Dump	ML90179	295408	7812696	13.5	13.5
	Lady Annie Run-of-mine (ROM) Pad	ML90179	295321	7811757	15	15
	Lady Annie Go Line and Crib	ML90179	295266	7811491		
	Lady Annie Topsoil Stockpile	ML90179	294469	7811574	1	1
	Lady Annie South Waste Rock Dump	ML90179	294554	7811230	62.3	62.3
Water storage and management	Lady Annie Sediment Dam 1 (LASED01)	ML90179	294898	7811072	0.6	0.6
	Lady Annie Sediment Dam 2 (LASED02)	ML90179	295118	7811282	0.2	0.2
	Lady Annie (ROM) Sediment Dam 3 (LASED03)	ML90179	295595	7811862	1.4	1.4
		ML90179	295565	7811794		
	Lady Annie Sediment Dam 4 (LASED04)	ML90179	295842	7812624	0.2	0.2
	Lady Annie Sediment Dam 5 (LASED05)	ML90179	294581	7811631	2.6	2.6
	Lady Annie Turkey Nest Dams	ML90179	295762	7812030	0.6	0.6
	Lady Annie North Clean Water diversion	ML90179	295753	7812853	0.5	0.5
Infrastructure	Lady Annie Buildings/Sheds and Tank	ML90179	295389	7812509	0.3	0.3

	Lady Annie Buildings/Sheds	ML90179	295286	7811487		
	Lady Annie Roads (miscellaneous)	ML90179	unspecified (various)		6.9	6.9
	Lady Annie Tracks (miscellaneous)	ML90179	unspecified (various)		11.4	11.4
	Lady Annie Cleared areas (miscellaneous)	ML90179	unspecified (various)		3.5	3.5
Exploration	Lady Annie and Lady Brenda Drill Pads	ML90179	unspecified (various)		11	11
Mount Kelly area						
PIts	Mount Clarke East Pit	ML5435, ML5446, ML5447, ML5448, ML5476, ML5478, ML90168, ML90170	305174	7799836	75.6	75.6
	Mount Clarke West Pit		305553	7799515		
	Flying Horse Pit		305325	7799193		
Waste rock dumps, overburden dumps, spoil piles and stockpiles	Process Area Topsoil Stockpile	ML90169	301560	7798119	5.1	5.1
	Process Area Topsoil Stockpile	ML90169	301833	7798028	0.9	0.9
	Process Area Topsoil Stockpile	ML90169	302027	7797180	2.5	2.5
	Process Area Topsoil Stockpile	ML90169	302434	7798609	0.9	0.9
	Process Area Topsoil Stockpile	ML90169	302663	7798561	1.4	1.4
	Process Area Topsoil Stockpile	ML90169	302648	7798372	1.3	1.3
	Process Area Topsoil Stockpile	ML90169	302854	7797477	0.5	0.5
	Process Area Bulk Fill Stockpile	ML90169	302039	7797356	5.6	5.6
	Process area Bulk Fill Stockpile	ML90169	302019	7797041	2.2	2.2
	Mount Clarke Run-of-Mine (ROM)	ML90169	302780	7798844	6.2	6.2
	Low grade Ore Run-of-Mine (ROM)	ML90170	303241	7799182	1.4	1.4
	Mount Clarke Run-of-Mine (ROM); Historic - not active	ML90170	303938	7799537	1.1	1.1
	Mount Clarke topsoil stockpile	ML5476	304636	7800415	3	3
	Mount Clarke North Waste Rock Dump and Low grade stockpile	ML5476, ML90170	305547	7800149	49.7	49.7
	Flying Horse Waste Rock Dump and Low Grade Stockpile	ML90170	305060	7798857	26.3	26.3
	Flying Horse Run-of-Mine (ROM)	ML90170	304694	7799208	5	5
Heap Leach Pad (HLP)	Stage 3 Heap Leach Pad	ML90169	302380	7798250	61.8	61.8
	Stage 1/2 Heap Leach Pad	ML90169	302358	7797522		

Water storage and management	W-Drain (Stage 3 Heap Leach Pad) and bund	ML90169	302178	7798379	33	33
	Stage 3 Process Ponds (PLS2, ILS2)	ML90169	302058	7798253		
	W-Drain - Stage1/2 Heap Leach Pad and bund	ML90169	302178	7797162		
	Stage 1/2 Process Ponds (PLSa, PLSb, ILS1, RAFF1a, RAFF1b)	ML90169	302016	7797569		
	Stage 3 Process Pond overflow channel	ML90169	301987	7798018		
	Raw Water Pond 1	ML90169	301822	7797864		
	Raw Water Pond 2	ML90169	301650	7797938		
	Storm Water Pond 1	ML90169	301743	7797678		
	Storm Water Pond 2	ML90169	301750	7797397		
	Eastern Stormwater Basin - Catch 1	ML90169	302604	7797544	0.3	0.3
	Eastern Stormwater Basin - Catch 1A	ML90169	302609	7798413	0.3	0.3
	Process Area Clean Water Diversion	ML90169	unspecified (linear)		11	11
	Mount Kelly (ROM) Sediment Dam 2 (MKSED02)	ML90170	302870	7799079	2.5	2.5
	Mount Kelly (Crusher) Sediment Dam 3 (MKSED03)	ML90170	303178	7798819	1	1
	Mount Kelly (Workshop) Sediment Dam 4 (MKSED04)	ML90170	303265	7798355	0.1	0.1
	Sewage Evaporation Ponds	ML90170	303690	7797494	1.3	1.3
	Village Road Turkey Nest Dam	ML90170	303500	7797684	0.2	0.2
	Mount Clarke Turkey Nest Dam (west)	ML5476	304770	7799714	0.5	0.5
	Mount Clarke (Flying Horse) Sediment Dam (MKSED01)	ML5476, ML90170	305335	7800426	1	1
		ML5476, ML90171	305998	7800383		
	Mount Clarke Turkey Nest Dam (east)	ML5447, ML90170	305722	7799662	0.2	0.2
	Mount Kelly Sediment Dam (MKSED05)	ML90170	306047	7798737	0.7	0.7
Infrastructure areas	Processing Plant area	ML90169	301943	7797682	2.3	2.3
	Switchyard - substation area	ML90169	302085	7797689	0.1	0.1
	Water Treatment Plant	ML90169	301869	7797863	0.1	0.1
	Communication Tower	ML90169	301910	7797821	1.7	1.7
	Administration (Admin) area	ML90169	301953	7797822		

	Workshop and stores area	ML90169	302029	7797821		
	Processing Laydown area	ML90169	302086	7797974	7.9	7.9
	BIS, Steelcon workshop and laydown area	ML90169	302508	7798940	2.5	2.5
	Emergency Response Training (ERT) area	ML90169	302870	7799079	1.3	1.3
	Crusher and acid storage area	ML90169, ML90170	302975	7798697	2.9	2.9
	Ore conveyor	ML90169	302765	7798500	2.8	2.8
	Acid pipeline	ML90169, ML90170	unspecified (linear)		0.52	0.52
	Heavy Vehicle workshop, fuel and laydown area	ML90170	303134	7798460	5.1	5.1
	Mine Camp / Village	ML90170	305210	7796900	4.6	4.6
	Sewage Treatment Plant (STP)	ML90170	304430	7797245	0.1	0.1
	General Waste Facility 2	ML90170	303360	7797697	0.6	0.6
	General Waste Facility 3	ML90170	303347	7797806	1.6	1.6
	Core Yard	ML90170	303642	7797811	2.6	2.6
	Explosives plant (detonator compound)	ML90170	303554	7800195	0.5	0.5
	Explosives plant (batching compound)	ML90170	303976	7800128	0.4	0.4
	Laydown yard (Mt Clarke)	ML5476	304740	7799806	2.2	2.2
	Mount Kelly Roads (miscellaneous)	ML5435, ML5446, ML5447, ML5476, ML90169, ML90170	unspecified (various)		72.6	72.6
	Mount Kelly Tracks (miscellaneous)	ML5446, ML5447, ML5448, ML5476, ML5478, ML90169, ML90170	unspecified (various)		30.4	30.4
	Mount Kelly Cleared areas (miscellaneous)	ML5476, ML90169, ML90170	unspecified (various)		6.6	6.6
Exploration	Mount Kelly Drill Pads (miscellaneous)	ML5476, ML90169, ML90170	unspecified (various)		16.6	16.6
Infrastructure areas	McLeod Hill Tracks (miscellaneous)	ML5426, ML5475	unspecified (various)		4.3	4.3
	McLeod Hill Cleared Area	ML5476	306343	7793399	0.5	0.5

Exploration	McLeod Hill Drill Pads	ML5474	unspecified (various)		0.2	0.2
Anthill area						
PIts	Anthill East Pit	ML 90233	303641	7759075	28	28
	Anthill West Pit	ML 90233	302966	7759090	13.4	13.4
Waste rock dumps, overburden dumps, spoil piles and stockpiles	Anthill Waste Rock Dump (AHWRD)	ML 90233	303269	7759756	54.9	54.9
	Anthill Run-of-mine (AHROM)	ML 90233	To be located within AHWRD footprint area		3	
	Contractors Area	ML 90233	To be located within AHWRD footprint area		1.5	
	Topsoil stockpile	ML 90233	303671	7759743	1.4	9.6
	Topsoil stockpile	ML 90233	303576	7759588	2.2	
	Topsoil stockpile	ML 90233	303511	7759366	3.5	
	Topsoil stockpile	ML 90233	303157	7759350	2.5	
Watercourse diversion and bund/levee structures	Johnson Creek Diversion [1]	ML 90233	304089	7758681	8.5	12
	Johnson Creek Diversion Eastern Bund	ML 90233	304291	7758948	1	
	Johnson Creek Diversion Upstream Levee	ML 90233	304100	7759310	1.5	
	Johnson Creek Diversion Downstream Levee	ML 90233	303510	7758729	1	
Water storage and management	Anthill West Mine Dam (AHWMD / Turkey's Nest)	ML 90233	303296	7759260	1.4	1.4
	Anthill West Sediment Dam 1 (AH SED01)	ML 90233	303050	7759890	0.5	0.5
	Anthill West Sediment Dam 2 (AH SED02)	ML 90233	303063	7759286	0.3	0.3
	Clean / Dirty Water Drains (C1, C1 DS, S1, S2, S3, S4, S5, S6)	ML 90233	linear (various)		5	5
Infrastructure areas	Anthill Office	ML 90233	304383	7759751	0.5	0.5
	Anthill Access Road	ML 90233	Linear (various)		7	7

[1] A water licence (reference 623710) is issued, subject to conditions, on 18/03/2021 by the Department of Regional Development, Manufacturing and Water under the *Water Act 2000* for the authorised activity of interfering with the flow of water in Johnson Creek by changing the course of flow on or adjoining land described as Lot 2 on SP162421 and Mining Lease (ML) 90233 and for the authorised purpose of diverting the flow of water.

A3 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must:

a) comply with the amended or changed standard, policy or guideline within 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in Schedule I – Regulated Dams, the time specified in that

schedule;
b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Maintenance of Measures, Plant and Equipment

A4 The holder of this environmental authority must:

a) Install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
b) Maintain such measures, plant and equipment in proper condition;
c) Operate such measures, plant and equipment in a proper and efficient manner.
d) Ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

Monitoring

A5 Except where specified otherwise in another condition of this environmental authority, all monitoring records and reports required by this environmental authority must be kept for a period of not less than 5 years.

Financial Assurance

A6 The activity must not be carried out until the environmental authority holder has given financial assurance to the administering authority as security for compliance with this environmental authority and any costs or expenses, or likely costs and expenses, mentioned in section 298 of the Environmental Protection Act 1994.

A7 The amount of the financial assurance must be reviewed by the holder of this environmental authority when a plan of operations is amended or replaced or the authority is amended.

Risk Management

A8 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009) or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, by 3 months from the date this environmental authority takes effect.

Notification of Emergencies, Incidents and Exceptions

A9 Unless there is a reasonable excuse, the holder of this environmental authority must notify the administering authority by telephone or written notification as soon as practicable but within twenty-four (24) hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.

A10 The notification in condition A9 must include, but not be limited to, the following:

a) The environmental authority number and name of the holder;
b) The name and telephone number of the designated contact person;
c) The location of the emergency or incident;
d) The date and time of the incident;
e) The time the holder of the environmental authority became aware of the incident;
f) The estimated quantity and type of substances involved in the incident;
g) The actual or potential cause of the incident;
h) A description of the nature and effects of the incident including environmental risks, any risks to public health or live stock;
i) Any sampling conducted or proposed, relevant to the emergency or incident;
j) Immediate actions taken to prevent or mitigate any further environmental harm caused by the

release;
k) What notification of persons who may be affected by the event has occurred/is being undertaken.

A11 Within ten (10) business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following:

a) results and interpretation of any samples taken and analysed;
b) outcomes of any actions taken at the time to prevent or minimise unlawful environmental harm;
c) proposed action to prevent a recurrence of the emergency or incident.

Complaints & Community

A12 The holder of this environmental authority must record all environmental complaints received about the mining activities including the following details:

a) name, address and contact number of the complainant;
b) time and date of complaint;
c) reasons for the complaint;
d) investigations undertaken;
e) conclusions formed;
f) actions taken to resolve the complaint;
g) any abatement measures implemented; and,
h) person responsible for resolving the complaint.

A13 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within ten (10) business days of completion of the investigation, or no later than ten (10) business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third Party Auditing

A14 The holder of this environmental authority must:

a) Obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority at regular intervals, not exceeding three (3) yearly intervals from 2012; and,
b) Provide each report to the administering authority within ninety (90) days of its completion.

Investigation

A15 If monitoring results indicate an exceedance of any quality objectives specified in a condition of this environmental authority, the holder of this environmental authority must notify the administering authority in accordance with Condition A9 and:

a) Complete an investigation to identify the potential cause of the exceedance;
b) If the investigation demonstrates that the exceedance is not attributable to the mining activities, then no further action is required; or
c) If the cause of the exceedance is inconclusive or attributable to the mining activities, provide a written report to the administering authority within three (3) months of the date of receiving the monitoring results showing an exceedance, outlining:
    i. All pertinent details of the investigation carried out; and,
    ii. Action taken or planned to minimise environmental harm.

Exploration

A16 All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the most recent version of the Code of Environmental Compliance for Exploration and Mineral Development Projects (the Code). Where there is a discrepancy between the Code and this environmental authority, the conditions of this environmental authority apply.

Definitions

A17 Words and phrases used throughout this environmental authority are defined in Schedule J – Definitions. Where a definition for a term used in this environmental authority is sought and the term is not defined within this environmental authority, the definitions in the Environmental Protection Act 1994, its Regulations and Environmental Protection Policies must be used.

END OF CONDITIONS FOR SCHEDULE A

Schedule B - Air

General

B1 The release of noxious or offensive odour or any other airborne contaminant resulting from the mining activities must not cause environmental harm at any sensitive place or commercial place.

B2 The holder of this environmental authority must ensure that vehicles used for transporting bulk materials from the mining tenements, leave the site with appropriate load preparation to prevent the spillage and / or loss of particulate matter and / or windblown dust during transport.

Dust and Particulate Matter Monitoring

B3 When requested by the administering authority or as a result of a complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer), dust and particulate monitoring must be undertaken, and the results thereof notified to the administering authority within ten (10) business days following receipt of monitoring results. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place.

B4 The mining activities have not caused an exceedance of the following limits:

a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with AS 3580.10.1 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited Matter – Gravimetric method of 1991.
b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a 24 hour averaging time, when monitored in accordance with the most recent version of Australian Standard AS3580.9.6 Determination of suspended particulate matter – PM (sub) 10 high volume sampler with size-selective inlet – Gravimetric method.
c) A concentration of particulate matter suspended in the atmosphere of 90, micrograms per cubic metre averaged over one year, when monitored in accordance with AS/NZS3580.9.3:2003 Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method.

Meteorological Monitoring

B5 The holder of this environmental authority must establish and maintain a permanent meteorological station to continuously measure and record wind speed, wind direction, temperature, daily rainfall volume and rainfall intensity.

END OF CONDITIONS FOR SCHEDULE B

Schedule C – Waste Management

Waste Disposal

C1 Regulated waste other than authorised under condition C2 must be removed from the site to a facility that is lawfully able to accept the waste under the *Environmental Protection Act 1994*.

C2 The only waste that can be disposed of on site is waste generated on site and is limited to:

a) Waste rock;

b) Spent heap leach material;

c) General waste including construction and demolition waste, green waste, putrescible, medical waste and domestic wastes.

d) Tyres/Conveyor Belt

C3 General waste must only be disposed of into the waste disposal trench facility as shown on Schedule K, Figure K2 – Waste Management.

C4 Unless otherwise permitted by the conditions of this Environmental Authority, waste must not be burnt or taken off site and burnt by the holder of this environmental authority.

C5 The holder of this environmental authority may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.

Tyre Storage and Disposal

C6 Tyres stored awaiting disposal or transport for take-back and recycling or waste-to-energy options – must be stockpiled in volumes less than 3m in height and 200m2 and at least 10m from any other tyre storage area.

C7 Fire Prevention measures must be implemented including the removal of all combustible materials, including grass and vegetation, within a 10m radius of any tyre storage area.

C8 Subject to demonstrating to the administering authority that no other use higher in the waste management hierarchy can be practicably implemented, waste tyres generated from mining activities may be disposed of on site in non acid forming waste rock dumps or underground stopes.

Waste Rock Management

C9 A waste rock and spoil disposal plan should be developed and include, where relevant, at least:

a) effective characterisation of the waste rock and spoil to predict under the proposed placement and disposal strategy the quality of runoff and seepage generated concerning potentially environmentally significant effects including salinity, acidity, alkalinity and dissolved metals, metalloids and non-metallic inorganic substances;

b) a program of progressive sampling and characterisation to identify dispersive and non-dispersive spoil and the salinity, acid and alkali producing potential and metal concentrations of waste rock;

c) a materials balance and disposal plan demonstrating how potentially acid forming and acid forming waste rock will be selectively placed and/or encapsulated to minimise the potential generation of acid mine drainage;

d) where relevant, a sampling program to verify encapsulation and/or placement of potentially acid-forming and acid-forming waste rock;

e) how often the performance of the plan will be assessed;

f) the indicators or other criteria on which the performance of the plan will be assessed;

g) rehabilitation strategy;

h) monitoring or rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.

C10 All waste rock characterised as having acid forming potential must be returned to the open pit at end of mine life or be encapsulated in a suitably designed waste rock dump approved by the administering authority.

END OF CONDITIONS FOR SCHEDULE C

Schedule D - Noise and Vibration

General

D1 Noise, airblast overpressure or ground vibration peak particle velocity from any mining activity must not cause environmental harm at any sensitive place.

D2 In the event of a complaint made to the administering authority (which is neither frivolous or vexatious) about noise generated in carrying out the licensed activity and the noise is considered by the administering authority to be unreasonable noise, the holder of this environmental authority must take action to ensure that it is no longer an unreasonable noise.

Noise Limits

D3 The environmental authority holder is taken not to be in contravention of condition D1 if the mining activities do not cause the criteria in Table D1 – Noise Limits to be exceeded at a sensitive place.

Table D1 – Noise Limits, Sensitive Place

Noise Level (d(b)A measured as:	Monday to Saturday			Sundays and Public Holidays		
	7am~6pm	6pm~10pm	10pm~7am	9am~6pm	6pm~10pm	10pm~9am
LAeq, adj, 15 mins	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
LA1, adj, 15 mins	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Notes:
a) CV: Critical Value, AV: Adjustment Value
b) To calculate noise limits;
   If bg ≤ (CV-AV): Noise limit = bg + AV
   If (CV-AV) < bg ≤ CV: Noise limit = CV
   If bg > CV: Noise limit = bg+0
c) In the event that measured bg (LA90,adj, 15 mins) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level.
d) Bg = background noise level (LA90, adj, 15 mins) measured over 3 – 5 days at the nearest sensitive receptor.
e) If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the process outlined in the 'Planning for Noise Control' guideline.

D4 When requested by the administering authority, noise monitoring and recording must be undertaken within a timeframe nominated by the administering authority to investigate any complaint of environmental nuisance at any sensitive place or commercial place and the results must be provided to the administering authority within fourteen (14) days following receipt of monitoring results.

Airblast Overpressure Nuisance

D5 The environmental authority holder is taken not to be in contravention of condition D1 if the mining activities do not cause the criteria in Table D2 – Blasting Noise Limits to be exceeded at a sensitive place.

Table D2 – Blasting Noise Limits, Sensitive Place

Blasting Noise Limits	6 am to 8 pm	8 pm to 6 am
Airblast Overpressure	115 dB (linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (linear) Peak at anytime.	No blasting
Ground Vibration Peak Particle Velocity	5mm/sec peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time.	No blasting

END OF CONDITIONS FOR SCHEDULE D

Schedule E – Groundwater

Groundwater

E1 The holder of this environmental authority must not release contaminants to groundwater.

E2 Groundwater quality and level must be monitored at the locations and frequencies specified in Table E1 – Groundwater Monitoring Locations and Frequency and identified in Schedule K, Figure K3 – Groundwater Monitoring Points for all parameters listed in Table E2 – Groundwater Quality Contaminant Triggers and Limits.

Table E1 – Groundwater Monitoring Locations and Frequency

Monitoring[1] Point	Map Reference (GDA94, MGA, Zone 54)		Surface RL[3] (m)	Monitoring Frequency
	Easting	Northing		
Compliance Bores				
Process Plant				
GWPP005M	302726	7798659	358.51	Quarterly
GWPP016M	301563	7798286	355.9	Quarterly
GWPP027P	302141	7798046	353.53	Quarterly
GWPP030M	301886	7798036	353.93	Quarterly
GWPP035M	301241	7797757	351.02	Quarterly
GWPP045M	302036	7797695	353.09	Quarterly
GWPP066M	301874	7797497	352.13	Quarterly
GWPP076M	301566	7797366	350.99	Quarterly
GWPP080M	301856	7797192	352.192	Quarterly
GWPP085M	302125	7797102	352.48	Quarterly
GWPP091M	301626	7797070	351.95	Quarterly
GWPP100M	302343	7793828	354.75	Quarterly
Lady Annie Pit Area				
GWLA204M	295241	7815752	330.262	Quarterly
GWLA212M	294889	7812261	342.210	Quarterly
GWLA220M	295219	7811351	324.181	Quarterly
Mt Clarke				
GWMC302M	304205	7800499	336.06	Quarterly
GWMC308M	304759	7799629	333.48	Quarterly
GWMC310M	304330	7799521	344.46	Quarterly
Anthill				
GWAN018M	303226	7759224	343.489	Quarterly
GWAN039M	303177	7758351	338.924	Quarterly
GWAN049M	302780	7758997	345.072	Quarterly
GWAN050M [4]	304042	7758831	345.024	Quarterly
GWAN051M	303770	7759585	347.495	Quarterly
Reference Bores [2]				
GWPP055M	303211	7797569	357.92	Quarterly
GWPP105M	302832	7796815	356.09	Quarterly
GWLA214M	296045	7812209	327.24	Quarterly
GWLA218M	294531	7811870	324.92	Quarterly
GWMC316P	307348	7798355	289.918	Quarterly
GWAN002M	305541	7761675	354.45	Quarterly
GWAN004M	303508	7760546	350.128	Quarterly
GWAN008M	301543	7760381	352.795	Quarterly
GWAN044M	300233	7758052	332.5	Quarterly
GWAN048M	306515	7757476	361.689	Quarterly
GWMH410P	306346	7793628	339.658	Quarterly
GWCH001P	301030	7780487	343.92	Quarterly

[1] Monitoring is not required where a bore has been removed as a direct result of the mining activity.
[2] Reference sites must:

(a) be from the same bio-geographic and climatic region; and
(b) have similar geology, soil types and topography; and
(c) not be so close to the test sites that any disturbance at the test site also results in a change at the reference site
Note: Anthill sites may be used as reference data prior to commencement of construction.

[3] RL measurement to be taken from top of bore casing – AHD.

[4] GWAN050M must be fully screened and installed to a depth that would enable identification of any potential seepage/leakage from the Johnson Creek Diversion towards the Anthill East Pit.

E3 Results of monitoring of groundwater from compliance bores identified in Table E1 – Groundwater Monitoring Locations and Frequency, must not exceed any of the contaminant limits defined in Table E2 – Groundwater Quality Contaminant Triggers and Limits.

Table E2 – Groundwater Quality Contaminant Triggers and Limits

Quality Characteristic[4]	Unit	Groundwater Quality Objectives	
		Trigger Level[1] (for metal based on filtered samples)	**Contaminant Limit[1]** (for metals based on total metal concentrations)
Electrical conductivity	µs/cm	500 (Gulf catchment)[4]/200 (Lake Eyre catchment)[4] or 80th percentile of reference data, whichever is higher	1000 or 95% of reference, whichever is lower.
pH (pH Unit)	pH unit	6 or 20th percentile of reference site, whichever is lower 7.5[2] or 80th percentile of reference data, whichever is higher	5.0 (minimum) 9.0 (maximum)
Level and chloride		For interpretative purposes only	
Sulphate (SO_4^{2-})	mg/l	80th percentile of reference	1000[3] or 95% of reference, whichever is lower
Fluoride	mg/l	80th percentile of reference	2[3] or 95% of reference, whichever is lower
Aluminium	mg/l	0.055[2] or 80th percentile of reference, whichever is higher	5[3] or 95% of reference, whichever is lower
Arsenic	mg/l	0.013[2] or 80th percentile of reference, whichever is higher	0.5[3] or 95% of reference, whichever is lower
Cadmium	mg/l	0.0002[2] or 80th percentile of reference, whichever is higher	0.01[3] or 95% of reference, whichever is lower
Chromium	mg/l	0.001[2] or 80th percentile of reference, whichever is higher	1[3] or 95% of reference, whichever is lower
Cobalt	mg/l	0.0014[2] or 80th percentile of reference, whichever is higher	1[3] or 95% of reference, whichever is lower
Copper	mg/l	0.0014[2] or 80th percentile of reference, whichever is higher	1[3] or 95% of reference, whichever is lower
Lead	mg/l	0.0034[2] or 80th percentile of reference, whichever is higher	0.1[3] or 95% of reference, whichever is lower
Manganese	mg/l	1.9[2] or 80th percentile of reference, whichever is higher	95% of reference
Molybdenum	mg/l	0.034[2] or 80th percentile of reference, whichever is higher	0.15[3] or 95% of reference, whichever is lower
Nickel	mg/l	0.011[2] or 80th percentile of reference, whichever is higher	1[3] or 95% of reference, whichever is lower
Selenium	mg/l	0.005[2] or 80th percentile of reference, whichever is higher	0.02[3] or 95% of reference, whichever is lower
Uranium	mg/l	0.0005[2] or 80th percentile of reference, whichever is higher	0.2[3] or 95% of reference, whichever is lower
Zinc	mg/l	0.008[2] or 80th percentile of reference, whichever is higher	20[3] or 95% of reference, whichever is lower

[1] All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger. Contaminant limits apply for metal/metalloids if total results exceed limits.

[2] ANZECC/ARMCANZ (2000) trigger values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.

[3] Contaminant limits based on ANZECC/ARMCANZ (2000) livestock drinking water guidelines.

[4] Electrical Conductivity (EC) values based on Queensland Water Quality Guideline (2009) Appendix G, Table G.1, 75th percentile for Gulf and Lake Eyre.

Note: (1) In any given sampling event, where the contaminant limit is exceeded and the reference site also exceeds the contaminant limit, the value of the reference data applies.

(2) The quality characteristics required to be monitored as per Table E2 - Groundwater Contaminant and Trigger Limits can be reviewed once the results of 2 years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table E2 - Groundwater Contaminant and Trigger Limits by amendment.

Exceedance investigation

E4 If quality characteristics of groundwater from compliance bores identified in Table E1 - Groundwater monitoring locations and frequency exceed any of the trigger levels stated in Table E2 - Groundwater quality contaminant triggers and limits, the holder of this environmental authority must compare the compliance monitoring bore results to the reference bore results and complete an investigation in accordance with the ANZECC and ARMCANZ 2000.

Bore construction and maintenance and decommissioning.

E5 The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Groundwater Monitoring Program

E6 A Groundwater Monitoring Program must be developed and documented by an appropriately qualified person and implemented by 31 August 2022.

E7 A copy of the Groundwater Plan Monitoring Program must be provided to the administering authority on implementation and when otherwise requested by the administering authority.

E8 The Groundwater Plan Monitoring Program must be periodically reviewed, at least once every three years, by an appropriately qualified person to assess the adequacy of the monitoring program to identify groundwater influences or impacts and to identify any required revisions to the groundwater monitoring network.

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Water

Contaminant Release

F1 Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.

F2 The release of contaminants to waters must:

a) only occur during flow events in the receiving waters;
b) only occur from a release point specified in Table F1 – Release Points and identified in Schedule K, Figure K4 – Contaminant Release Points; and,
c) be monitored at the release point and frequency specified in Table F1 – Release Points for each parameter specified in Table F2 – Release Quality Objectives.

Table F1 – Release Points

Release Point	Map Reference (GDA94, MGA, Zone 54)		Contaminant Source	Receiving Waters Description	Monitoring Frequency
	Easting	Northing			
Stormwater pond	301650	7797400	Process ponds/plant	Saga Creek Headwaters	1 sample must be taken within 12 hours of a release event [1] commencing and for release events with duration of greater than 24 hours, samples must be taken daily for 1 week and once a week thereafter until the release event ceases.
Mt Clarke Sediment Dam	306068	7800385	Waste rock dump	Unnamed tributary of Reedy Creek	
ROM Sediment Dam	295640	7811829	Ore stockpile	Unnamed tributary of Reedy Creek	
Crusher Sediment Dam	303239	7798875	Crushed ore stockpile and conveyor system	Unnamed tributary of Reedy Creek	
Lady Annie Sediment Dam 1	294941	7811108	Waste rock dump	Unnamed tributary of Reedy Creek	
Lady Annie Sediment Dam 2	295161	7811311	Waste rock dump	Unnamed tributary of Reedy Creek	
LA ROM Sediment Dam	295640	781129	Ore stockpile	Unnamed tributary of Reedy Creek	
Workshop Sediment Dam	303280	7798408	Vehicle maintenance	Unnamed tributary of Reedy Creek	
Flying Horse Sediment Dam	306085	7798762	Waste rock dump	Unnamed tributary of Reedy Creek	
Anthill Mine Water Dam (AHMWD / Turkey's Nest)	303292	7759249	Pit and ROM	Johnson Creek	
Anthill Sediment Dam 1 (AHSED01)	303019	7759891	Waste rock dump	Johnson Creek	
Anthill Sediment Dam 2 (AHSED02)	303031	7759287	Waste rock dump	Johnson Creek	

[1] Release event is a release of water from a release point specified in Table F1 (Release Points).

Table F2 – Release Quality Objectives

Parameter[1]	Release Quality Objectives (mg/L unless otherwise specified)
pH (pH units)	6.0 or 20th percentile of reference site concentration[4], whichever is lower. 7.5 or 80th percentile of reference site concentration[4], whichever is higher.
EC (µS/cm)	500[5] x 20[2] (for Gulf catchment)/200[5] x 20[2] (for Lake Eyre catchment) or 20 x 80th percentile of reference site concentration[4] whichever is higher
Dissolved oxygen	For interpretative purposes only
Sulphate	20 x 80th percentile of reference site concentration[4]
Fluoride	20 x 80th percentile of reference site concentration[4]
Major cations	For interpretative purposes only
Major anions	
Aluminium	0.055 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Arsenic[3]	0.013 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Cadmium	0.0002 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Chromium[3]	0.0001 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Cobalt	0.0014 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Copper	0.0014 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Lead	0.0034 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Manganese	1.9 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Molybdenum	0.034 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Nickel	0.011 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Selenium	0.005 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Uranium	0.0005 x 20[2] or 20 x 80th percentile of reference site concentration[4]
Zinc	0.008 x 20[2] or 20 x 80th percentile of reference site concentration[4] whichever is higher
Total Hardness	For interpretative purposes only
Total petroleum hydrocarbons	No detectable film or odour

[1] For water quality objectives parameters, all metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels.

[2] Twenty (20) times ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 (high reliability trigger values) and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.

[3] Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the RQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element.

[4] Reference site concentration determined from reference points specified in Table F3 – Receiving Water Monitoring Locations.

[5] Electrical Conductivity (EC) values based on Queensland Water Quality Guideline (2009) Appendix G, Table G.1, 75th percentile for Gulf and Lake Eyre.

Note: (1) The quality characteristics required to be monitored as per Table F2 – Release Quality Objectives can be reviewed once the results of 2 years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table F2 – Release Quality Objectives by amendment.

F3 At the time of release from the authorised release point specified in Table F1 - Release Points the modelled water flow volume in the respective receiving water must be at least twenty (20) times the volume at which respective contaminated waters are released.

F4 Release quality objectives for water contaminated by mining activities when monitored at the location and frequency defined in Table F1 – Release Points must not exceed the release quality objectives defined in Table F2 – Release Quality Objectives.

Notification of Release Event

F5 The holder of this environmental authority must notify the administering authority as soon as practicable of a release event (no later than twenty four (24) hours of having commenced releasing mine affected water to the receiving environment). Notification must include the submission of written verification to the administering authority of the following information:

a) release commencement date/time;

b) expected release cessation date/time;

c) release point/s;

d) release volume (estimated);

e) receiving water/s including the natural flow rate; and

f) any details (including available data) regarding likely impacts on the receiving water(s).

F6 The holder of this environmental authority must notify the administering authority as soon as practicable, (nominally within twenty-four (24) hours after cessation of a release) of the cessation of a release notified under Condition F4 and within fourteen (14) days or another nominated time agreed to by the administering authority provide the following information in writing:

a) release cessation date/time;

b) natural flow volume in receiving water;

c) volume of water released;

d) details regarding the compliance of the release with the conditions of Agency Interest: Water of this environmental authority (i.e. contamination limits, natural flow, discharge volume);

e) all in-situ water quality monitoring results; and

f) any other matters pertinent to the water release event.

Receiving Environment Monitoring and Contaminant Trigger Levels

F7 The quality of the receiving waters and sediments must be monitored at the locations and frequency specified in Table F3 - Receiving Water Monitoring Locations and Frequency and depicted in Schedule K, Figure K5 – Surface Water and Sediments Monitoring Locations for each quality characteristic stated in Table F4 - Receiving Water Contaminant and Trigger Levels.

Table F3 – Receiving Water Monitoring Locations

Monitoring Point	Area	Map Reference (GDA94, MGA, Zone 54)		Monitoring Frequency
		Easting	Northing	
Reference Sites*				• For Waters: Event based sampling of release: 1 sample within 12 hours of a release event commencing and for release events with duration of greater than 24 hours, samples must be taken daily for 1 week and once a
USLA102	Lady Annie	295109	7812833	
USLA104	Lady Annie	295838	7812729	
USMC602	Mount Clarke	301301	7800376	
USMC706	Mount Clarke	305724	7797606	
USPP802	Process Plant	300602	7794099	
USPP804	Process Plant	301625	7795010	
USBU904	Buckley River	305715	7766953	
USAN104	Anthill (unnamed tributary of Johnson Creek)	306723	7756714	

USAN106	Anthill (Johnson Creek)	307237	7758161	week thereafter until the release event ceases. • For Sediments: Twice yearly (once at the end of the wet season and once at the end of the dry season
USAN108	Anthill (unnamed Johnson Creek Tributary)	303154	7760504	
Downstream Sites				
DSLA212	Lady Annie	295610	7810492	
DSLA308	Lady Annie	294047	7810331	
DSMC406	Mount Clarke	306168	7800544	
DSMC710	Mount Clarke	306480	7798546	
DSPP806	Process Plant	301384	7797445	
DSPP808	Process Plant	300297	7796205	
DSAN113	Anthill (Johnson Creek)	303053	7758288	
DSAN116	Anthill (unnamed tributary of Johnson Creek)	302437	7758491	
DSAN118	Anthill (Johnson Creek)	300818	7757790	

*Reference sites must:
a) be from the same bio-geographic and climatic region;
b) have similar geology, soil types and topography;
c) contain a range if habitats similar to those at the test sites;
d) be of a similar follow regime; and
e) not be so close to the test sites that any disturbances at the test site also results in a change at the reference site.

Table F4 – Receiving Waters Contaminant and Trigger Levels

Quality Characteristics	Unit	Contaminant Trigger Level[1]	Contaminant Limit[1]
Electrical conductivity (µs/cm)	µS/cm	500 (Gulf catchment)/200 (Lake Eyre)[3]	1000 or 95% of reference[5], whichever is lowest.
pH (pH Unit)	pH unit	6.0 (minimum) 7.5 (maximum)	5.0 (minimum) 9.0 (maximum)
Suspended Solids (mg/L)	mg/L	N/A	Same as reference data or 50mg/L, whichever is the highest
Hardness ($CaCO_3$)	mg/L	Interpretational purposes only	
Sulphate (SO_4^{2-})	mg/L	80th percentile of the reference	1000 (mg/L) or 95% of reference[5], whichever is lowest.
Aluminium	mg/L	0.055[2]	5 (mg/L) or 95% of reference[5], whichever is lowest.
Arsenic[4]	mg/L	0.013[2]	0.5 (mg/L) or 95% of reference[5], whichever is lowest.
Cadmium	mg/L	0.0002[2]	0.01 (mg/L) or 95% of reference[5], whichever is lowest.
Chromium[4]	mg/L	0.001[2]	0.5 (mg/L) or 95% of reference[5], whichever is lowest.
Cobalt	mg/L	0.0014[2]	1 (mg/L) or 95% of reference[5], whichever is lowest.
Copper	mg/L	0.0014[2]	1 (mg/L) or 95% of reference[5], whichever is lowest.
Fluoride	mg/L	80th percentile of the reference	2 (mg/L) or 95% of reference[5], whichever is lowest.
Lead	mg/L	0.0034[2]	0.1 (mg/L) or 95% of reference[5], whichever is lowest.

Manganese	mg/L	1.9[2]	95% of reference[5], whichever is lowest.
Molybdenum	mg/L	0.034[2]	0.15 (mg/L) or 95% of reference[5], whichever is lowest.
Nickel	mg/L	0.011[2]	0.2 (mg/L) or 95% of reference[5], whichever is lowest.
Selenium	mg/L	0.005[2]	0.02 (mg/L) or 95% of reference[5], whichever is lowest.
Uranium	mg/L	0.0005[2]	0.2 (mg/L) or 95% of reference[5], whichever is lowest.
Zinc	mg/L	0.008[2]	20 (mg/L) or 95% of reference[5], whichever is lowest.

[1] All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger. Contaminant limits apply for metal/metalloids if total results exceed limits.

[2] ANZECC/ARMCANZ (2000) values for aquatic ecosystems indicative of slightly-to-moderately disturbed tropical Australian upland river ecosystems Tables 3.3.4 and Table 3.4.1 (high reliability trigger values) and moderate or low reliability trigger values (Section 8.3) if no value available in Table 3.4.1.

[3] Electrical Conductivity (EC) values based on Queensland Water Quality Guidelines 2009, Appendix G, Table G.1, 75th percentile for Gulf and Lake Eyre.

[4] Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the contaminant release level is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element.

[5] Reference site concentration determined from reference points specified in Table F3 – Receiving Water Monitoring Locations.

Note: (1) During the same flow event, where the contaminant limit is exceeded and the reference data also exceeds the contaminant limit, the value of the reference data applies.

(2) The quality characteristics required to be monitored as per Table F4 – Receiving Water Contaminant and Trigger Levels can be reviewed once the results of 2 years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table F4 – Receiving Water Contaminant and Trigger Levels by amendment.

F8 The release of contaminants to receiving waters must not result in an exceedance of the contaminant limits stated in Table F4 – Receiving Water Contaminant and Trigger Levels for each quality characteristics at a downstream monitoring point identified in Table F3 – Receiving Water Monitoring Locations.

F9 If quality characteristics of the receiving water at the downstream monitoring points exceed any of the trigger levels specified in Table 4 – Receiving Waters Contaminant Trigger Levels the holder of this environmental authority must compare the downstream results to the reference site results in the receiving waters and:

(a) where the downstream result is the same or a lower value than the reference site data for the quality characteristic during the same flow event, then no action is to be taken; or

(b) where the downstream results exceed the reference site complete an investigation in accordance with the ANZECC & ARMCANZ 2000 methodology, into the potential for environmental harm and provide a written report to the administering authority in the next annual return, outlining:

(i) details of the investigations carried out; and

(ii) actions taken to prevent environmental harm.

Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with F8 (b) of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.

Stream Sediments

F10 The release of contaminants to receiving waters must not result in an exceedance of the stated sediment quality objective for each parameter in Table F5 –Sediment Quality Objectives at a downstream monitoring point identified in Table F3 – Receiving Water Monitoring Locations.

Table F5 –Sediment Quality Objectives

Parameter	Sediment Quality Objective[1, 2] (mg/kg dry wt, unless otherwise specified)
Sulphate	3 x 80th percentile of reference site concentration[4]
Fluoride	3 x 80th percentile of reference site concentration[4]
Arsenic	70[3] or 3 x 80th percentile of reference site concentration[4] or whichever is higher
Cadmium	10[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Chromium	370[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Cobalt	3 x 80th percentile of reference site concentration[4]
Copper	270[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Lead	220[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Manganese	3 x 80th percentile of reference site concentration[4]
Molybdenum	3 x 80th percentile of reference site concentration[4]
Nickel	52[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Selenium	3 x 80th percentile of reference site concentration[4]
Uranium	3 x 80th percentile of reference site concentration[4]
Zinc	410[3] or 3 x 80th percentile of reference site concentration[4] whichever is higher
Particle size distribution	For interpretative purposes only

[1] All stream sediment sampling must be undertaken in accordance with AS 5667.12 *Guidance on Sampling of Bottom Sediments of 1998*.
[2] Sediment analysis must be either total particulate metals (TPM) or dilute acid extractable metals (AEM) concentrations on the <2 mm fraction.
[3] ANZECC (2000) Interim Sediment Quality Guidelines – ISQG – high values based on total sediments (dry weight).
[4] Reference site concentration determined from reference points specified in Table F3 – Receiving Water Monitoring Locations.

Note: (1) Where the 80th percentile of a sediment quality objective (SQO) is exceeded at a receiving water site and the reference site also exceeds this concentration during the release/flow event, the value of the reference site applies as the SQO for the duration of the event.
(2) The quality characteristics required to be monitored as per Table F5 – Sediment Quality Objectives can be reviewed once the results of 2 years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from Table F5 – Sediment Quality Objectives by amendment.

Receiving Environment Monitoring Program (REMP)

F10 A REMP must be developed and implemented by 1 June 2014 to monitor and record the effects of the release of contaminants on the receiving environment periodically and whilst contaminants are being discharged from the site, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. A copy of the REMP must be provided to the administering authority prior to its implementation and due consideration given to any comments made on the REMP by the administering authority.

For the purposes of the REMP, the receiving environment includes:

a) the waters of the Saga and Inca Creek and connected waterways within 20km downstream of the release, or further if an impact is detected beyond 20km; and,

b) the waters of Johnson Creek and connected waterways within 20km downstream of the release, or further if an impact is detected beyond 20km.

F11 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared and submitted in writing to the administrating authority by 1 October 2015, and thereafter every 12 months. This must include an assessment of background reference water quality,

the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

Annual Water Monitoring Reporting

F12 The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format:

a) The date on which the sample was taken;

b) The time at which the sample was taken;

c) The monitoring point at which the sample was taken;

d) The measured or estimated quantity of mine affected water released from all release points;

e) The release flow rate at the time of sampling for each release point;

f) The results of all monitoring and details of any exceedances of the conditions of this environmental authority;

g) Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.

Water Management Plan

F13 A Water Management Plan must be developed by an appropriately qualified person and implemented.

Stormwater, Sediment and Erosion Controls

F14 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.

F15 Stormwater, other than mine affected water, is permitted to be released to waters from:

a) erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition F14;

b) water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition F14, for the purpose of ensuring water does not become mine affected water.

Onsite Water Storages

F16 Water storages stated in Table F6 – Onsite Water Storage Monitoring must be monitored for the water quality characteristics specified in Table F7 – Onsite Water Storage Contaminant Limits at the monitoring locations and at the monitoring frequency specified in Table F6 – Onsite Water Storage Monitoring.

Table F6 – Onsite Water Storage Monitoring

Water Storage Description	Monitoring Location	Area	Map Reference (GDA94, MGA, Zone 54)		Frequency of Monitoring
			Easting (GDA 94)	Northing (GDA 94)	
Lady Annie Sediment Dam 1	DMLA208	Lady Annie	294897	7811077	Quarterly

Lady Annie Sediment Dam 2	DMLA206	Lady Annie	295119	7811290	Quarterly
LA ROM Sediment Dam	DMLA106	Lady Annie	295640	7811829	Quarterly
ROM Sediment Dam	DMMC506	Mount Clarke	302941	7799178	Quarterly
Crusher Sediment Dam	DMMC504	Mount Clarke	303239	7798875	Quarterly
Workshop Sediment Dam	DMMC502	Mount Clarke	303280	7798408	Quarterly
Mount Clarke Sediment Dam	DMMC404	Mount Clarke	306068	7800385	Quarterly
Flying Horse Sediment Dam	DMMC708	Mount Clarke	306085	7798762	Quarterly
Anthill Turkey's Nest	DMAN110	Anthill	303292	7759249	Quarterly
Anthill Sediment Dam 1	DMAN210	Anthill	303019	7759891	Quarterly
Anthill Sediment Dam 2	DMAN310	Anthill	303031	7759287	Quarterly

Table F7 – Onsite Water Storage Contaminant Limits

Parameter	Units	Contaminant Limit[1]
pH	pH unit	4.0 to 9.0[2]
EC	µS/cm	5970[3]
Sulphate	mg/l	1000[4]
Fluoride	mg/l	2[4]
Aluminium	mg/l	5[4]
Arsenic	mg/l	0.5[4]
Cadmium	mg/l	0.01[4]
Chromium	mg/l	1[4]
Cobalt	mg/l	1[4]
Copper	mg/l	1[4]
Lead	mg/l	0.1[4]
Molybdenum	mg/l	0.15[4]
Nickel	mg/l	1[4]
Selenium	mg/l	0.02
Uranium	mg/l	0.2[4]
Zinc	mg/l	20[4]

[1] Total measurements (unfiltered) must be taken and analysed.
[2] Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4-9."
[3] Page 4.3-4 of ANZECC & ARMCANZ (2000), EC (µS/cm) x 0.67 = TDS (mg/l), where no adverse effects on animals expected at TDS = 4000 defined in Table 4.3.1, Tolerances of livestock to total dissolved solids (salinity) in drinking water.
[4] Contaminant limit based on ANZECC & ARMCANZ (2000) stock water (low risk) quality guidelines.

F17 In the event that water storages defined in Table F6 – Onsite Water Storage Monitoring exceed the contaminant limits defined in Table F7 – Onsite Water Storage Contaminant Limits, the holder of the

environmental authority must implement measures, where practicable, to prevent access to waters by livestock and minimise access by fauna.

END OF CONDITIONS FOR SCHEDULE F

Schedule G – Sewage Treatment

G1 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in Table G1 – Treated Effluent Contaminant Release Limits to Land.

Table G1 – Treated Effluent Contaminant Release Limits to Land

Quality Characteristic	Unit	Release limit	Limit Range	Monitoring Frequency
pH	pH units	6.0 – 9.0	Range	Monthly
5 day Biochemical Oxygen Demand (BOD)1	mg/L	20	Maximum	
Total Suspended solids	mg/L	30	Maximum	
Nitrogen	mg/L	30	Maximum	
Phosphorus	mg/L	15	Maximum	
E-coli	Colonies per 100 millilitres	1,000	Maximum	

G2 Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations:

a) Within the nominated area(s) identified in Schedule K, Figure K6 – Sewage Treatment Plant and Effluent Disposal);

b) Other land for the purpose of dust suppression and/or fire fighting.

G3 The application of treated effluent to land must be carried out in a manner such that:

a) Vegetation is not damaged;

b) There is no surface ponding of effluent;

c) There is no run-off of effluent.

G4 If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.

G5 All sewage effluent released to land must be monitored at the frequency and for the parameters specified in Table G1 – Treated Effluent Contaminant Release Limits to Land.

G6 The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.

G7 When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store / lawfully dispose of effluent.

G8 A minimum area of 0.5ha of land, excluding any necessary buffer zones, may be utilised for the irrigation and / or beneficial reuse of treated sewage effluent.

G9 Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the Act whilst using the treated sewage effluent.

END OF CONDITIONS FOR SCHEDULE G

Schedule H – Land and Rehabilitation

H1 Land disturbed by mining must be rehabilitated in accordance with Table H1 Rehabilitation Requirements.

Table H1 – Rehabilitation Requirements

Mine Domain	Mine Feature Names	Rehabilitation Goal	Rehabilitation Objective	Indicators	Completion Criteria
Open Pit	Flying Horse Pit, Mount Clarke Pit, Lady Annie Pit, Anthill East Pit, Anthill West Pit	Safe	Site safe for human and animals	Engineered structures and signage to preclude humans and animals (e.g., safety bund wall and fencing)	Rehabilitation report: that all safety precautions have been taken in accordance with the relevant legislation.
		Non-polluting	Hazardous and contaminated material adequately managed.	Hazard assessment of material by suitably qualified person.	Rehabilitation report: appropriate hazard assessment and measures undertaken.
		Stable	Minimal probability of wall failure or rock falls that will cause significant environmental harm.	Geotechnical studies of final voids	Rehabilitation report: geotechnical studies to determine whether final landform is stable.
				Risk assessment of final landform	Rehabilitation report: appropriate risk assessment and control measures undertaken.
Waste Rock Dump	Flying Horse WRDs, Mount Clarke WRD, Mount Kelly WRD, Lady Annie WRD, Anthill WRD	Safe	Site safe for humans and animals	Safety assessment of final landform by suitably qualified person.	Rehabilitation report: certification structurally sound and safe
		Non-polluting	Hazardous and contaminated material adequately managed.	Engineers assessment of cover or final landform design	Engineer's certification in rehabilitation report that the waste disposal site has been securely covered to minimise release of seepage or contaminants to the receiving environment.
				Rehabilitation monitoring plan in place to monitor downstream surface/ground water	Rehabilitation report: monitoring data demonstrates the cover is functioning in minimising release of seepage or contaminants to the receiving environment.
		Stable	Minimal probability of subsidence or rock falls that will cause	Geotechnical studies of final landforms	Rehabilitation report: geotechnical studies to determine whether

			significant environmental harm		final landform is stable.
			Vegetation cover to minimise erosion	Vegetation assessment	Rehabilitation report: revegetation meets the limits with reference to analogue site or an acceptable standard.
		Self-sustaining	Soil properties that support desired land use	Soil monitoring program in place to ensure remaining soil is able to support post-mining land use	Rehabilitation report: all soil chemical, physical and biological properties are within acceptable limits that ensure soil is able to support post-mining land use.
			Self-sustaining natural vegetation and habitat established	Vegetation assessment	Rehabilitation report: Certification that key species are present, suitable diversity has been achieved and cover/density is adequate. Rehabilitation report: certification that the weed management plan has been successful.
Infrastructure, Roads & Exploration Areas	ROM Pad, stockpiles and loading areas, workshops, accommodation camp and facilities, STP, fuel storage area, crushing area, acid storage, process plant and associated buildings, concrete batch plant, power facility, explosives storage, internal access haul roads, tracks, office carpark, Anthill Office area	Safe	Site safe for humans and animals	Safety assessment of final landform by suitably qualified person	Rehabilitation report: Certification structurally sound and safe.
		Non-polluting	Hazardous and contaminated material adequately managed	Contaminated land assessment	Evidence of remediated landform in a contaminated land assessment report.
			Runoff and seepage of good quality water that is not likely to affect known environmental values	Rehabilitation monitoring plan in place to monitor downstream surface/groundwater	Rehabilitation report: monitoring data meets specified contaminant and trigger levels that ensure environmental values are not being compromised.
		Stable	Landform achieves appropriate erosion rates	Engineers assessment of design and construction of structures to control water flow	Rehabilitation report: Engineer certification that infrastructure sites (both remaining and decommissioned) have the required structures to control water flow and runoff.

			Vegetation cover to minimise erosion	Vegetation assessment	Rehabilitation report: revegetation meets the limits with reference to analogue site or an acceptable standard.
		Self-sustaining	Soil properties that support desired land use	Soil monitoring program in place to ensure remaining soil is able to support post-mining land use.	Rehabilitation report: all soil chemical, physical and biological properties are within acceptable limits that ensure soil is able to support post-mining land use.
			Self-sustaining natural vegetation and habitat established	Vegetation assessment	Rehabilitation report: Certification that key species are present, suitable diversity has been achieved and cover/density is adequate. Rehabilitation report: certification that the weed management plan has been successful.
Dams	Process water ponds, stormwater ponds, sediment dams, Raffinate ponds, ILS pond, PLS ponds, Anthill Water Mine Dam (AHWMD / Turkey's Nest), Anthill Sediment Dam 1 (AHSED01), Anthill Sediment Dam 2 (AHSED02).	Safe	Site safe for humans and animals	Safety assessment of final landform by suitably qualified person. Safety barriers and signage	Rehabilitation report: Certification structurally sound and safe, all precautions implemented.
		Non-polluting	Dams to remain on closure will not contribute contaminants to the environment.	Rehabilitation monitoring plan in place to monitor water in the dam and downstream surface/groundwater	Rehabilitation report: closure monitoring (water quality) is compliant with established and applicable limits.
		Stable	Minimal probability or subsidence that will cause significant environmental harm	Geotechnical studies of final landforms	Rehabilitation report: geotechnical studies to determine whether final landform is stable.
				Risk assessment of final landform	Rehabilitation report: appropriate risk assessment and control measures have been undertaken.
	Sump and STP irrigation area	Non-polluting	Rehabilitated sump will not contribute contaminants to the environment	Rehabilitation monitoring plan in place to monitor downstream surface/groundwater	Rehabilitation report: monitoring data meets specified contaminant and trigger levels.
		Stable	Vegetation cover to	Vegetation assessment	Rehabilitation report: revegetation

			minimise erosion		meets the limits with reference to analogue site or an acceptable standard.
		Self-sustaining	For sump to be rehabilitated, soil properties that support desired land use	Soil monitoring program in place to ensure remaining soil is able to support post-mining land use	Rehabilitation report: all soil chemical, physical and biological properties are within acceptable limits that ensure soil is able to support post-mining land use.
	Stormwater drains/diversions	Non-polluting	Discharge will be of good quality water that is not likely to affect known environmental values	Rehabilitation monitoring plan in place to monitor downstream surface water	Rehabilitation report: monitoring data meets specified contaminant and trigger levels that ensure environmental values are not being compromised.
		Stable	Minimal probability or subsidence that will cause significant environmental harm	Geotechnical studies of final landforms	Rehabilitation report: geotechnical studies to determine whether final landform is stable.
		Self-sustaining	Establish safe and stable drains with a low risk of environmental harm	Water quality established by monitoring or modelling validated by monitoring structural report on integrity of structure.	Rehabilitation report: that the structures meet water quality guidelines, Engineers certificate of structure.
			Self-sustaining natural vegetation and habitat established	Vegetation assessment	Rehabilitation report: certification that key species are present, suitable diversity has been achieved and cover/density is adequate. Certification that the weed management plan has been successful.
Johnson Creek Diversion [1]	Johnson Creek Diversion Eastern Bund, Johnson Creek Diversion Upstream Levee, Johnson Creek Diversion Downstream Levee.	Safe	TBA	TBA	TBA
		Non-polluting	TBA	TBA	TBA
		Stable	TBA	TBA	TBA
		Self-sustaining	TBA	TBA	TBA

[1] Note: TBA (to be advised) details are outstanding and are required to be identified by the holder for inclusion.

H2 Rehabilitation must commence progressively in accordance with the Plan of Operations.

Contaminated Lands

H3 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for a notifiable activity or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.

H4 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of the report to ensure that the land is suitable for its final land use under condition H1.

Heap Leach Pads

H5 The environmental authority holder must install and maintain a leak detection system for all heap leach pads.

H6 Contaminants must not be released outside or under the lined area of the heap leach pads.

Heap Leach Operational Plan

H7 The environmental authority holder must develop and implement a Heap Leach Operational Plan.

Chemicals and Flammable or Combustible Liquids

H8 All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, flammable or combustible liquids and dangerous goods must be stored and handled in accordance with the current, relevant Australian Standard where such is applicable.

H9 Notwithstanding the requirements of any Australian Standard, any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land.

H10 Where no relevant Australian Standard is available, the following must be applied:

a) Storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110% of a single storage tank or 100% of the largest storage tank plus 10% of the second largest storage tank in multiple storage areas; and

b) Drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25% of the maximum design storage volume within the bund.

H11 All containment systems must be designed to minimise rainfall collection within the system.

Impacts to Prescribed Environmental Matters

H12 Significant residual impacts to prescribed environmental matters other than if the impacts were authorised by an existing authority issued before the commencement of the Environmental Offsets Act 2014, are not authorised under this environmental authority or the *Environmental Offsets Act 2014* unless the impact(s) is specified in Table H2 - Significant residual impacts to prescribed environmental matters.

Table H2 - Significant residual impacts to prescribed environmental matters

Prescribed environmental matter	Location of impact	Maximum extent of impact
Regulated vegetation		
Regional ecosystems (not within an urban area) within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map – 1.3.4 (*Acacia cambagei* low open woodland to woodland on alluvium)	ML90233	0.1 ha
Regional ecosystems (not within an urban area) within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map – 1.3.7 (*Eucalyptus camaldulensis* woodland on channels and levees (south))	ML90233	2.1 ha
Regional ecosystems (not within an urban area) within the defined distance from the defining banks of a relevant watercourse on the vegetation management watercourse map – 1.3.13 (*Eucalyptus leucophylla* woodland on terraces and minor drainage lines)	ML90233	8.2 ha
Protected wildlife habitat		
Habitat for an animal that is endangered wildlife –Carpentarian grasswren (*Amytornis dorotheae*)	ML90233	136.3 ha

H13 Records demonstrating that each impact to a prescribed environmental matter not listed in Table H2 - Significant residual impacts to prescribed environmental matters did not, or is not likely to, result in a significant residual impact to that matter must be:

a) completed by an appropriately qualified person; and

b) kept for the life of the environmental authority.

H14 An environmental offset made in accordance with the *Environmental Offsets Act 2014* and Queensland Environmental Offsets Policy, as amended from time to time, must be undertaken for the maximum extent of impact to each prescribed environmental matter authorised in Table H2 - Significant residual impacts to prescribed environmental matters, unless a lesser extent of the impact has been approved in accordance with condition H15.

Non-staged impacts

H15 Prior to the commencement of any impacts to a prescribed environmental matter for which an environmental offset is required by condition H14, a report completed by an appropriately qualified person that contains an analysis of the estimated maximum extent of impact to each prescribed environmental matter must be provided to the administering authority.

H16 The report required by condition H15 must be approved by the administering authority before the notice of election, if applicable, is given to the administering authority.

H17 The notice of election for the environmental offset required by condition H16, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of the significant residual impacts for which the environmental offset is required.

END OF CONDITIONS FOR SCHEDULE H

Schedule I –Dam and Levee structures

Assessment of consequence category

I1 The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) at the following times:

a) prior to the design and construction of the structure, if it is not an existing structure; or

b) prior to any change in its purpose or the nature of its stored contents.

I2 A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.

I3 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

Design and construction of a regulated structure

I4 Conditions I5 to I9 inclusive do not apply to existing structures.

I5 All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

I6 Construction of a regulated structure is prohibited unless:

a) the holder has submitted a consequence category assessment report and certification to the administering authority; and
b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.

I7 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933), and must be recorded in the Register of Regulated Structures.

I8 Regulated structures must:

a) be designed and constructed in compliance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933);
b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
i) floodwaters from entering the regulated dam from any watercourse or drainage line; and
ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
c) Where a regulated dam is associated with a failure to contain – seepage, have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

I9 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure

b) construction of the regulated structure is in accordance with the design plan.

Notification of affected persons

I10 All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure:

a) for existing structures that are regulated structures, within 10 business days of this condition taking effect;
b) prior to the operation of the new regulated structure; and
c) if the emergency action plan is amended, within 5 business days of it being amended.

Operation of a regulated structure

I11 Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following:

a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition I6;
b) a set of 'as constructed' drawings and specifications;
c) certification of the 'as constructed drawings and specifications' in accordance with condition I9;
d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan;
e) the requirements of this authority relating to the construction of the regulated structure have been met;
f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and
g) there is a current operational plan for the regulated structure.

I12 For existing structures that are regulated structures:

a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and
b) there must be a current operational plan for the existing structures.

I13 Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.

Mandatory reporting level

I14 Conditions I15 to I18 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

I15 The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

I16 The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

I17 The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

I18 The holder must record any changes to the MRL in the Register of Regulated Structures.

Design storage allowance

I19 The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.

I20 By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).

I21 The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.

I22 The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Annual inspection report

I23 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

I24 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.

I25 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

I26 The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority:

a) The recommendations section of the annual inspection report; and
b) If applicable, any actions being taken in response to those recommendations; and
c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.

Transfer arrangements

I27 The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.

Register of Regulated Structures

I28 A Register of Regulated Structures must be established and maintained by the holder for each regulated structure.

I29 The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.

I30 The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition (I11) and (I12) has been achieved.

I31 The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.

I32 All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.

I33 The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.

Transitional arrangements

I34 All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.

I35 All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in Schedule I - Table 1 (Transitional hydraulic performance requirements for existing structures), depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.

Schedule I – Table 1 (Transitional hydraulic performance requirements for existing structures)

Transition period required for existing structures to achieve the requirements of the Manual for Assessing Consequence Categories and Hydraulic Performance of Dams			
Compliance with criteria	High consequence	Significant consequence	Low consequence
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years.
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	No transitional conditions apply. Review consequence assessment every 7 years.
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases.	Review consequence assessment every 7 years.
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing).	Within 5 years or as per compliance requirements (e.g. TEP timing).	Review consequence assessment every 5 years.
Regulated levee designed to prevent the ingress of clean flood water <100% compliant	Within 5 years unless otherwise agreed with the administering authority.		

I36 Schedule I - Table 1 (Transitional hydraulic performance requirements for existing structures) ceases to apply for a structure once any of the following events has occurred:

a) it has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; or
b) it has been decommissioned; or

c) it has been certified as no longer being assessed as a regulated structure.

I37 Certification of the transitional assessment required by I34 and I35 (as applicable) must be provided to the administering authority within 6 months of amendment of the authority adopting this schedule.

Hydraulic performance of regulated structures

I38 Regulated dams must meet the hydraulic performance criteria specified in Schedule I - Table 2 (Hydraulic performance criteria for regulated dam structures).

Schedule I - Table 2 (Hydraulic performance criteria for regulated dam structures)

Name of dam	Consequence category	Hydraulic performance criteria		
		Design Storage Allowance (DSA) [1]	Spillway Capacity Critical Design Storm [2]	Mandatory Reporting Level (MRL) [3]
Storm water Pond 1	High	1 in 100 AEP, 2 months wet season plus other inputs for the 2 months wet season	1 in 1000 AEP	1 in 100 AEP
Storm water Pond 2	High			
PLS1a	High			
PLS1b	High			
PLS2	High			
ILS1	High			
ILS2	High			
RAFF1a	High			
RAFF1b	High			

[1] The design storage allowance on 1 November of each year for any dam containing hazardous waste constructed within the operational land must be equivalent to the run-off from a 1:100 AEP 2 month wet season plus process inputs for the equivalent wet season. Process inputs refers to hazardous mineral process waste and any water, which is being disposed of in the storage facility.
[2] The critical design storm has a duration that produces the peak discharge for the catchment.
[3] The mandatory reporting level refers to the volume below the spillway crest.

I39 Regulated levees must meet the hydraulic design criteria specified in Schedule E - Table 3 (Hydraulic performance criteria for regulated levee structures).

Schedule E - Table 3 (Hydraulic design criteria for regulated levee structures)

Name of dam	Consequence category	Design criteria - flood level for embankment crest levels [1]
Johnson Creek Upstream Levee	High [2]	1: 1000 AEP
Johnson Creek Downstream Levee	High [2]	1: 1000 AEP

[1] Note: crest level should include a suitably designed freeboard.
[2] Consequence category assessment in Tonkin & Taylor Pty Ltd (2020) report titled '*Anthill Copper Project – Flood Protection Levee Design'* (June 2020, 1013475.R01.v1, version 1); Certification by David Glover (RPEQ 14163).

END OF CONDITIONS FOR SCHEDULE I

Schedule J - Definitions

Words and phrases used throughout this environmental authority are defined below. Where a definition for a term used in this environmental authority is not provided within this environmental authority, but is provided in the EP Act 1994 or subordinate legislation, the definition in the EP Act or subordinate legislation must be used.

'acid rock drainage' means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions, when geological strata is disturbed and exposed to oxygen and moisture.

'AEP' means Annual Exceedance Probability.

'affected person' is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

'airblast overpressure' means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).

'annual exceedance probability' or **'AEP'** the probability that at least one event in excess of a particular magnitude will occur in any given year.

'**annual inspection report**' means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

a) against recommendations contained in previous annual inspections reports;

b) against recognised dam safety deficiency indicators;

c) for changes in circumstances potentially leading to a change in consequence category;

d) for conformance with the conditions of this authority;

e) for conformance with the 'as constructed' drawings;

f) (f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);

g) for evidence of conformance with the current operational plan.

'appropriately qualified person' means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

'**assessed**' or '**assessment**' by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

a) exactly what has been assessed and the precise nature of that determination;

b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.'

'**associated works**' in relation to a dam, means:

a) operations of any kind and all things constructed, erected or installed for that dam; and

b) any land used for those operations.

'authority' means environmental authority (mining activities) under the *Environmental Protection Act 1994*.
'background', with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

'blasting' means the use of explosive materials to fracture:

a) rock, coal and other minerals for later recovery; or

b) structural components or other items to facilitate removal from a site or for reuse.

'**certification**' means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

'certifying', **'certify'** or **'certified'** have a corresponding meaning as 'certification'

'chemical' means:

a) an agricultural chemical product or veterinary chemical product within the meaning of the Agricultural and *Veterinary Chemicals Code Act 1994* (Commonwealth); or

b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or

c) a lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997;

d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or

e) any substance used as, or intended for use as:

   i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product; or

   ii) a surface active agent, including, for example, soap or related detergent; or

   iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or

   iv) a fertiliser for agricultural, horticultural or garden use; or

   v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or

   vi) manufacture of plastic or synthetic rubber.

'commercial place' means a workplace used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.

'consequence' in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

'consequence category' means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).

'construction' or **'constructed'** in relation to a regulated structure includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.

'contaminants' means:

a) For compliance with Schedule E of this environmental authority, the parameters identified in Table E2 – Groundwater Contaminant and Trigger limits;

b) For compliance with Schedule F of this environmental authority, the parameters identified in Table F4 – Receiving Water and Sediment Quality Objective; or

c) For any other issue not covered by (a) and (b), a substance generated by the mining activities as defined under the *Environmental Protection Act 1994* and subordinate legislation.

'dam' means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

'dam crest volume' means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

'design plan' is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

'design storage allowance' or **'DSA'** means an available volume, estimated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

'designer' for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

'development approval' means a development approval under the *Planning Act 2016* (or under the repealed *Sustainable Planning Act 2009* or *Integrated Planning Act 1997*) in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

'disturbance' of land includes:

a) compacting, removing, covering, exposing or stockpiling of earth;

b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;

c) carrying out mining within a watercourse, waterway, wetland or lake;

d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;

e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased; or

f) releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance':

a) areas off lease (e.g. roads or tracks which provide access to the mining lease);

b) areas previously disturbed which have achieved the rehabilitation outcomes;

c) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);

d) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner.

e) disturbance that pre-existed the grant of the tenure.

'EC' means electrical conductivity.

'effluent' means treated waste water released from sewage treatment plants.

'hazard category' means a category, either low significant or high, into which a dam is assessed as a result of the application of tables and other criteria in 'Manual for Assessing Hazard Categories and Hydraulic Performance of Dams'.

'hazardous waste' means any substance, whether liquid, solid or gaseous, derived by or resulting from, the processing of minerals that tends to destroy life or impair or endanger health.

'holder' means:

(a) where this document is an environmental authority, any person who is the holder of, or is acting under, that environmental authority; or

(b) where this document is a development approval, any person who is the registered operator for that development approval.

'hydraulic performance' means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in *the Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

'infrastructure' means water storage dams, levees,, roads and tracks, buildings and other structures built for the purpose of the mining activity.

'land' in the 'land schedule' of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

'land use' means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

'levee' means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

'low consequence dam' means any dam that is not a high or significant consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

'm' means metres.

'mg/l' means milligram per litre.

'mandatory reporting level' or **'MRL'** means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) published by the administering authority.

'Manual' means the *Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933) published by the administering authority, as amended from time to time.

'mine affected water':

a) means the following types of water:

i) pit water, tailings dam water, processing plant water;

ii) ii) water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;

iii) rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;

iv) groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;

v) groundwater from the mine's dewatering activities;

vi) a mix of mine affected water (under any of paragraphs i)-v) and other water.

b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:

i) land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or

ii) land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:

a. areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;

b. evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or

iii) both.

'measures' includes any measures to prevent or minimise environmental impacts of the mining activity such as bunds, silt fences, diversion drains, capping, and containment systems.

'modification' or **'modifying'** (see definition of 'construction')

'natural flow' means the flow of water through waters caused by nature.

'non-polluting' means having no adverse impacts upon the receiving environment.

'offensive' means causing reasonable offence or displeasure; is disagreeable to the sense; disgusting, nauseous or repulsive, other than trivial harm.

'operational plan' includes:

(a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA);

(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

'peak particle velocity (ppv)' means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

'progressive rehabilitation' means rehabilitation (defined below) undertaken progressively or a staged approach to rehabilitation as mining operations are ongoing.

'receiving environment' means all groundwater, surface water, land, and sediments that are not disturbed areas authorised by this environmental authority.

'receiving waters' means the waters into which this environmental authority authorises releases of mine affected water.

'reference site' (or analogue site) may reflect the original location, adjacent area or another area where rehabilitation success has been completed for a similar biodiversity. Details of the reference site may be as photographs, computer generated images and vegetation models etc.

'Register of Regulated Structures' includes:

(a) Date of entry in the register;

(b) Name of the structure, its purpose and intended/actual contents;

(c) The consequence category of the dam as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/193315);

(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

(f) For the regulated dam, other than in relation to any levees –

i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

iii. Dam crest volume (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

vi. Storage rating table of stored volume versus level (metres AHD);

vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD);

viii. Mandatory reporting level (metres AHD);

(g) The design plan title and reference relevant to the dam;

(h) The date construction was certified as compliant with the design plan;

(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

(j) Details of the composition and construction of any liner;

(k) The system for the detection of any leakage through the floor and sides of the dam;

(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

'regulated structure' means any structure in the significant or high consequence category as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/193315) published by the administering authority. A regulated structure does not include:

- a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- a flare pit.

'rehabilitation' the process of reshaping and revegetating land to restore it to a stable landform

'release event' means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

'RL' means reduced level, relative to mean sea level as distinct from depths to water.

'residual drilling material' means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

'self-sustaining' means an area of land which has been rehabilitated and has maintained the required acceptance criteria without human intervention for a period nominated by the administering authority.

'sensitive place' means:

a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

b) a motel, hotel or hostel; or

c) an educational institution; or

d) a medical centre or hospital; or

e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or

f) a public park or gardens.

Note: The definition of 'sensitive place' and 'commercial place' is based on Schedule 1 of EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library & educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under Nature Conservation Act 1992 as a critical habitat or an area of major interest, marine park under Marine Parks Act 2004, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

'spillway' means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.

'stable' means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.
'structure' means dam or levee.

'suitably qualified and experienced person' in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 2002, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

'system design plan' means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

'the Act' means the *Environmental Protection Act 1994*.

'µS/cm' means micro Siemens per centimetre.

'void' means any constructed, open excavation in the ground.

'water quality' means the chemical, physical and biological condition of water.

'water release event' means release of any waters that are or maybe contaminated by the mining activity.

'water year' means the 12-month period from 1 July to 30 June.

'watercourse' has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

1) a river, creek or stream in which water flows permanently or intermittently—

(a) in a natural channel, whether artificially improved or not; or

(b) in an artificial channel that has changed the course of the watercourse.

2) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

'waters' includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

'wet season' means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF CONDITIONS FOR SCHEDULE J

Schedule K - Maps / Plans

Figure K1(a) – Lady Annie Mine Area Layout

Figure K1(b) – Mount Kelly Infrastructure and Mine Area Layout

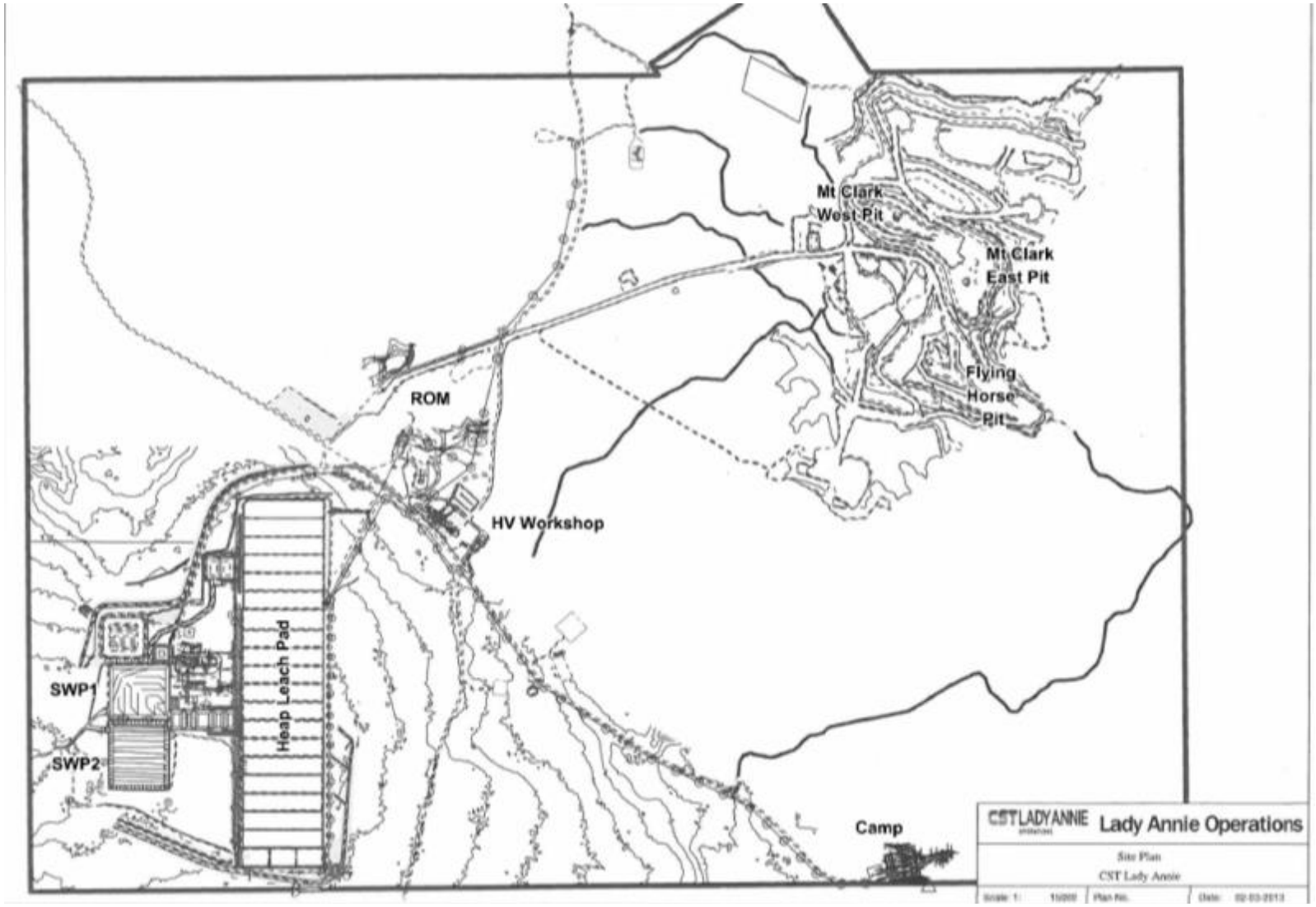


Figure K1(c) – Anthill Mine Area Layout

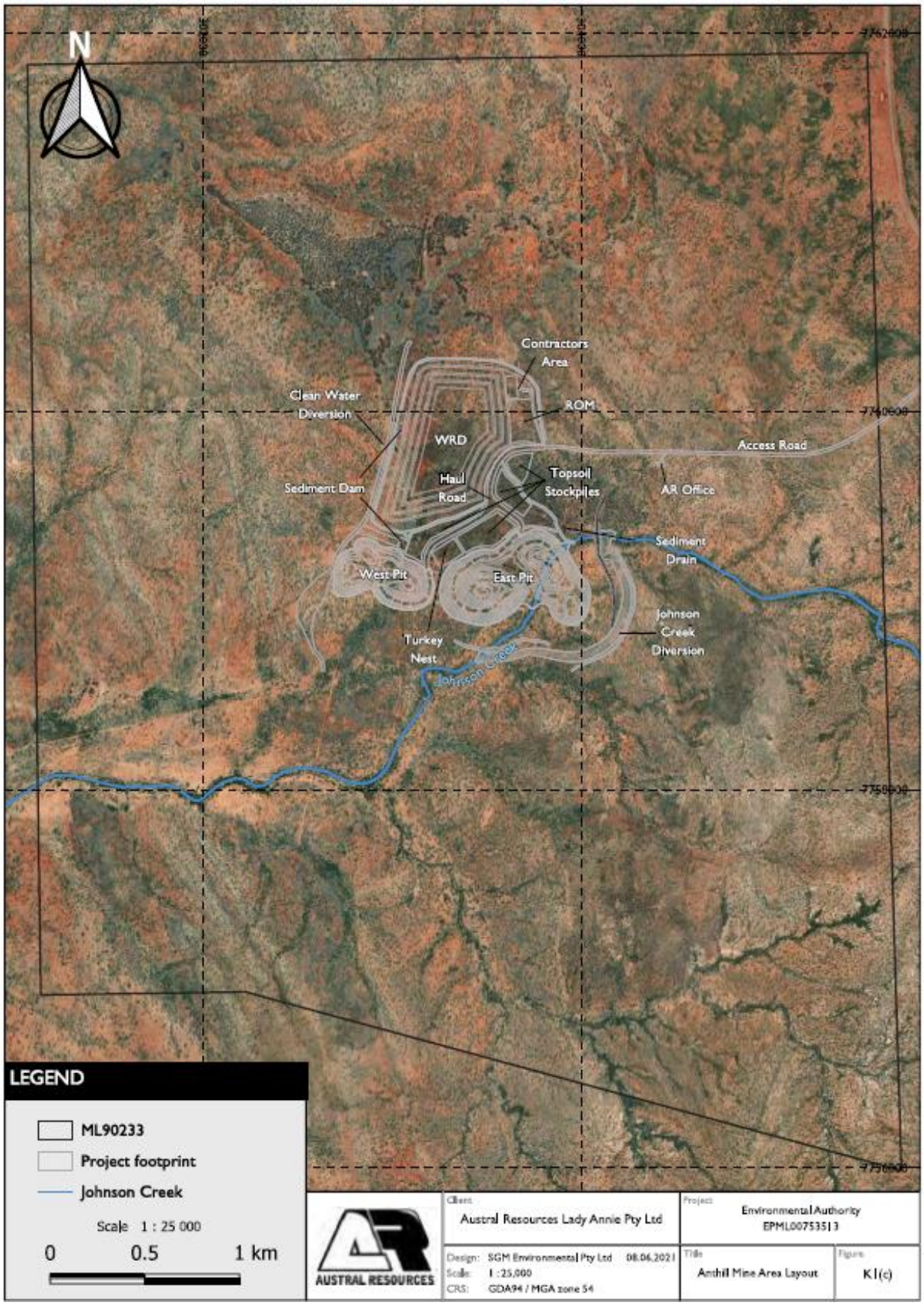


Figure K2 – Waste Management

Figure K3(a) – Groundwater Monitoring Points – Lady Annie Mine

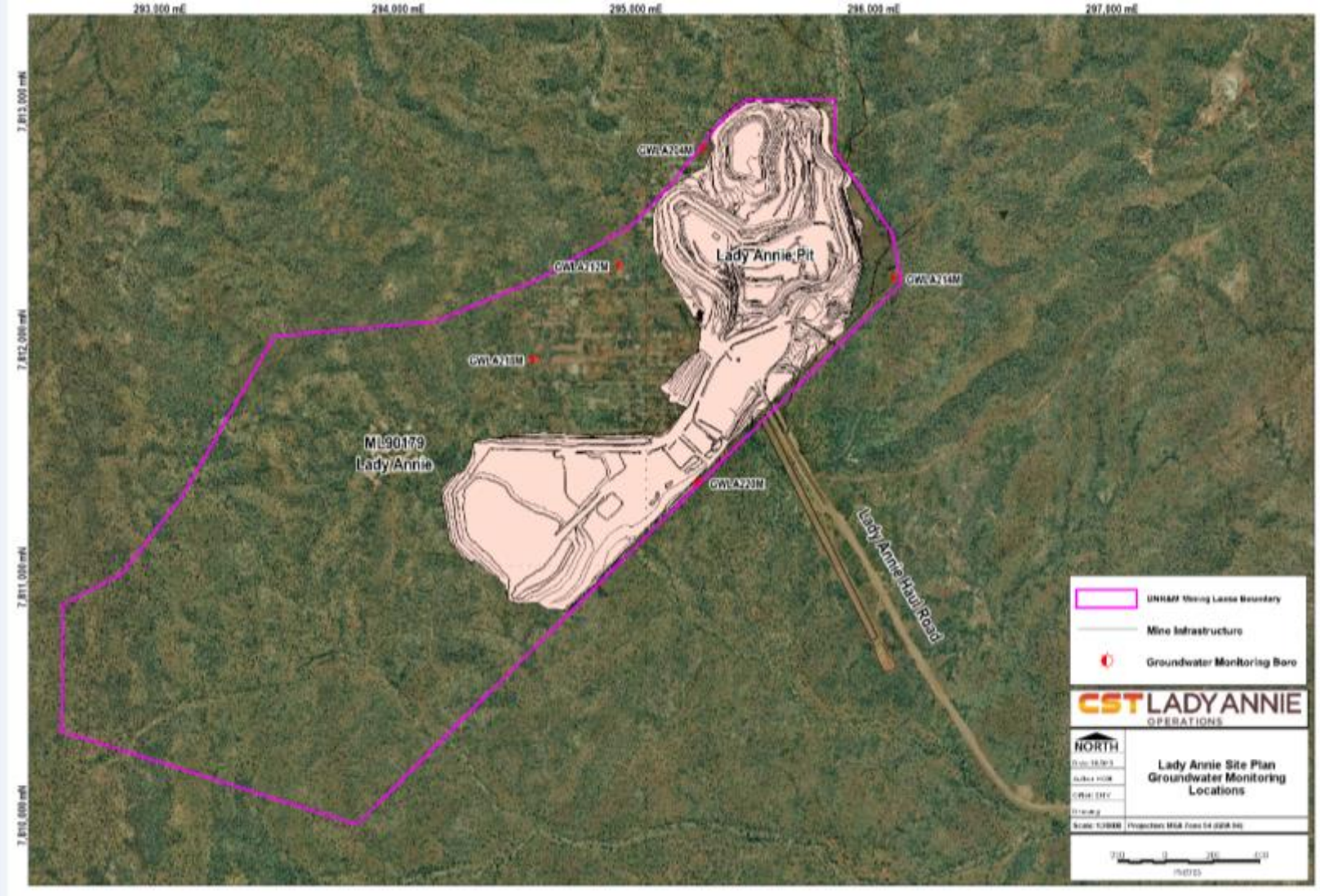


Figure K3(b) – Groundwater Monitoring Points – Mt Kelly Min

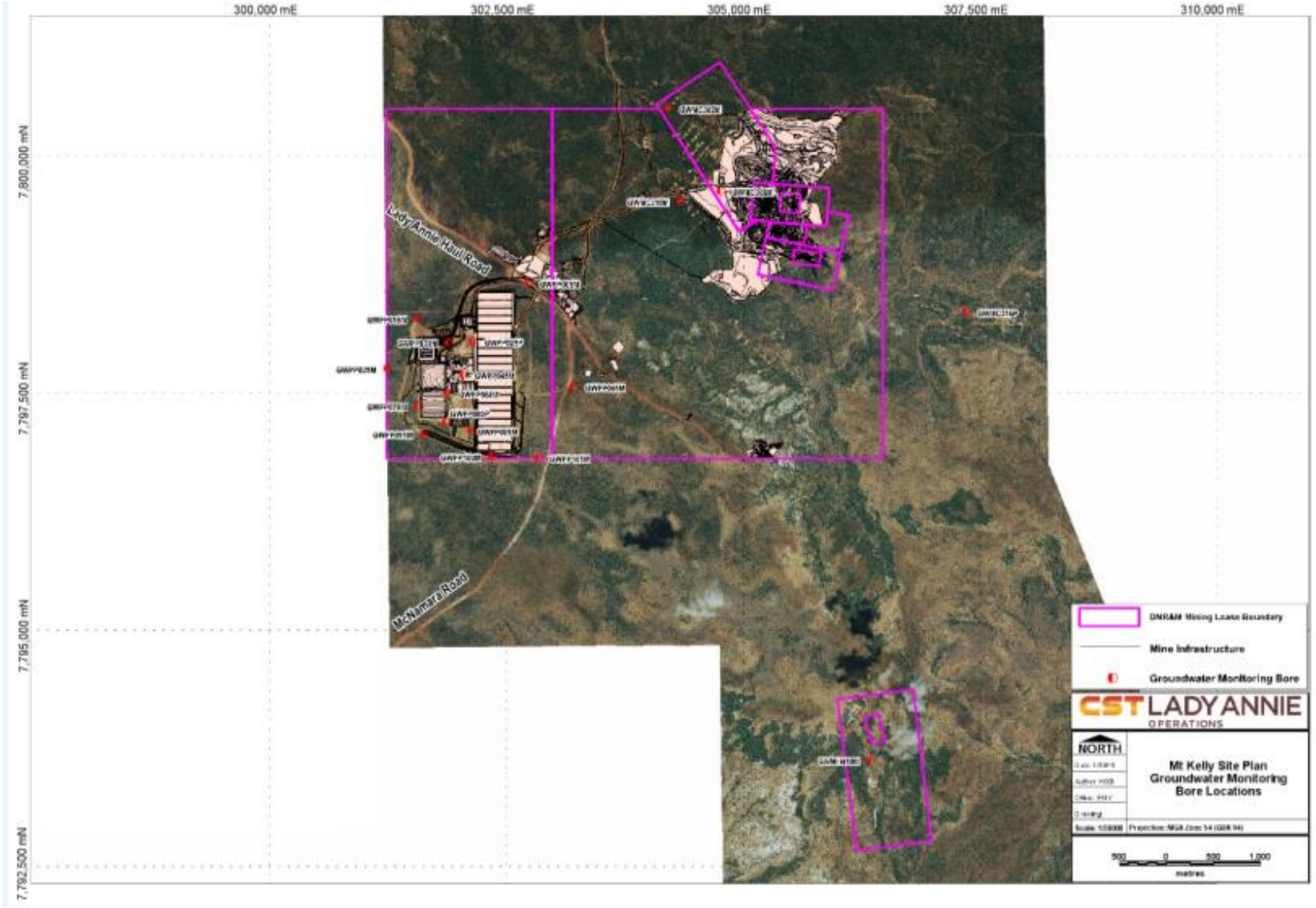


Figure K3(c) – Groundwater Monitoring Points – Anthill Mine

Figure K4(a) – Contaminant Release Points – Lady Annie Mine

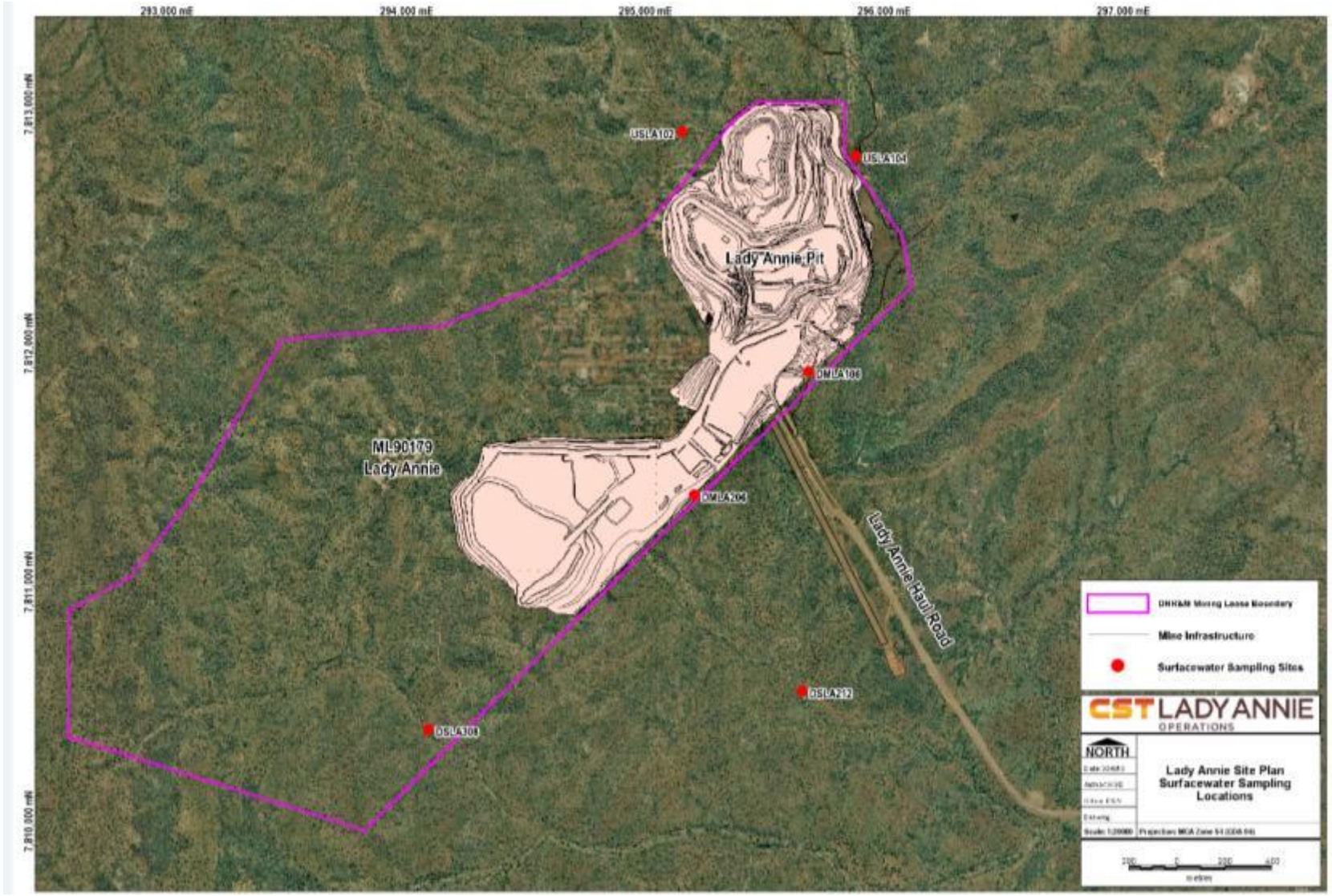


Figure K4(b) – Contaminant Release Points – Mt Kelly Mine

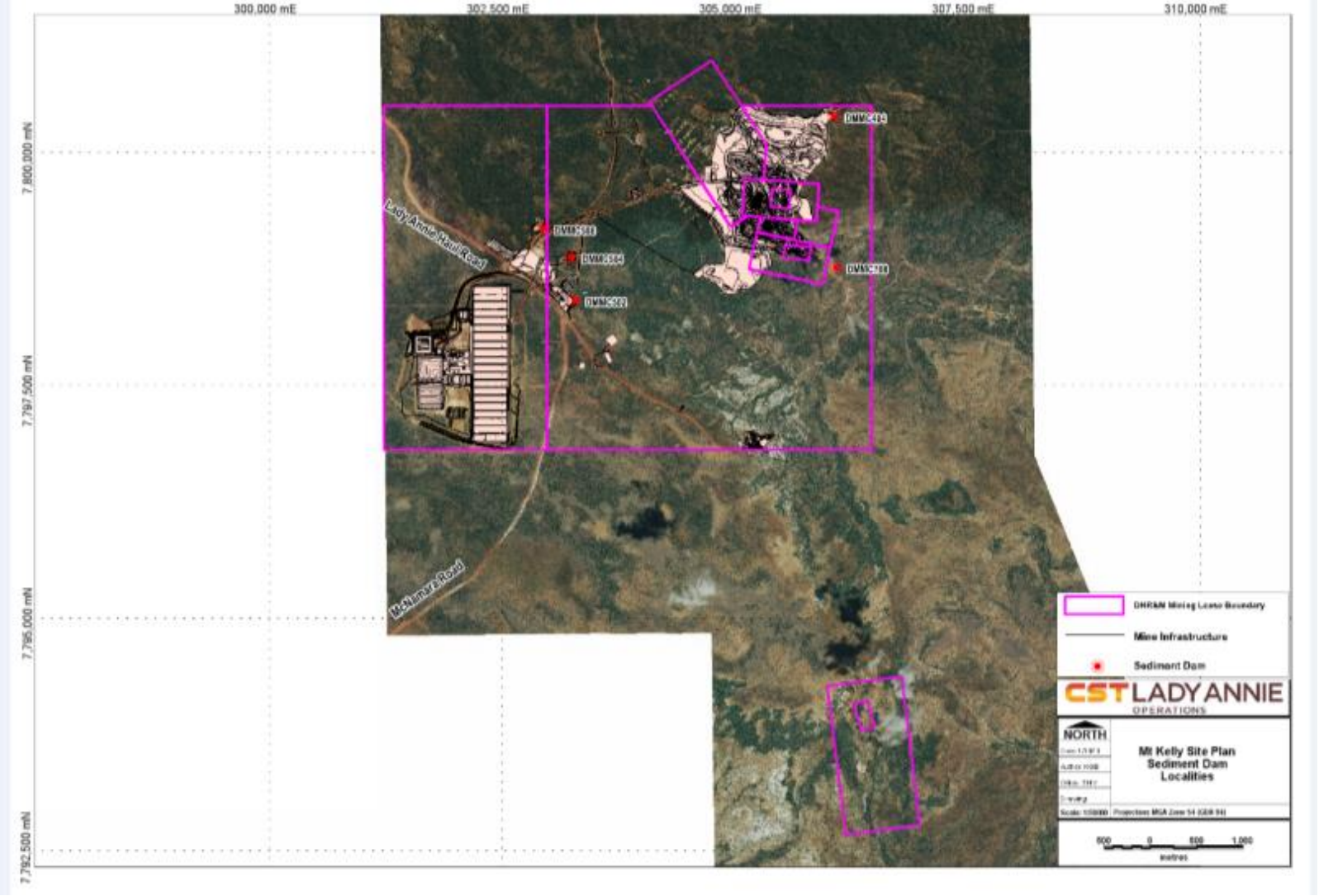


Figure K4(c) – Contaminant Release Points – Anthill Mine

Figure K5(a) – Surface Water and Sediments Monitoring Locations – Lady Annie Mine

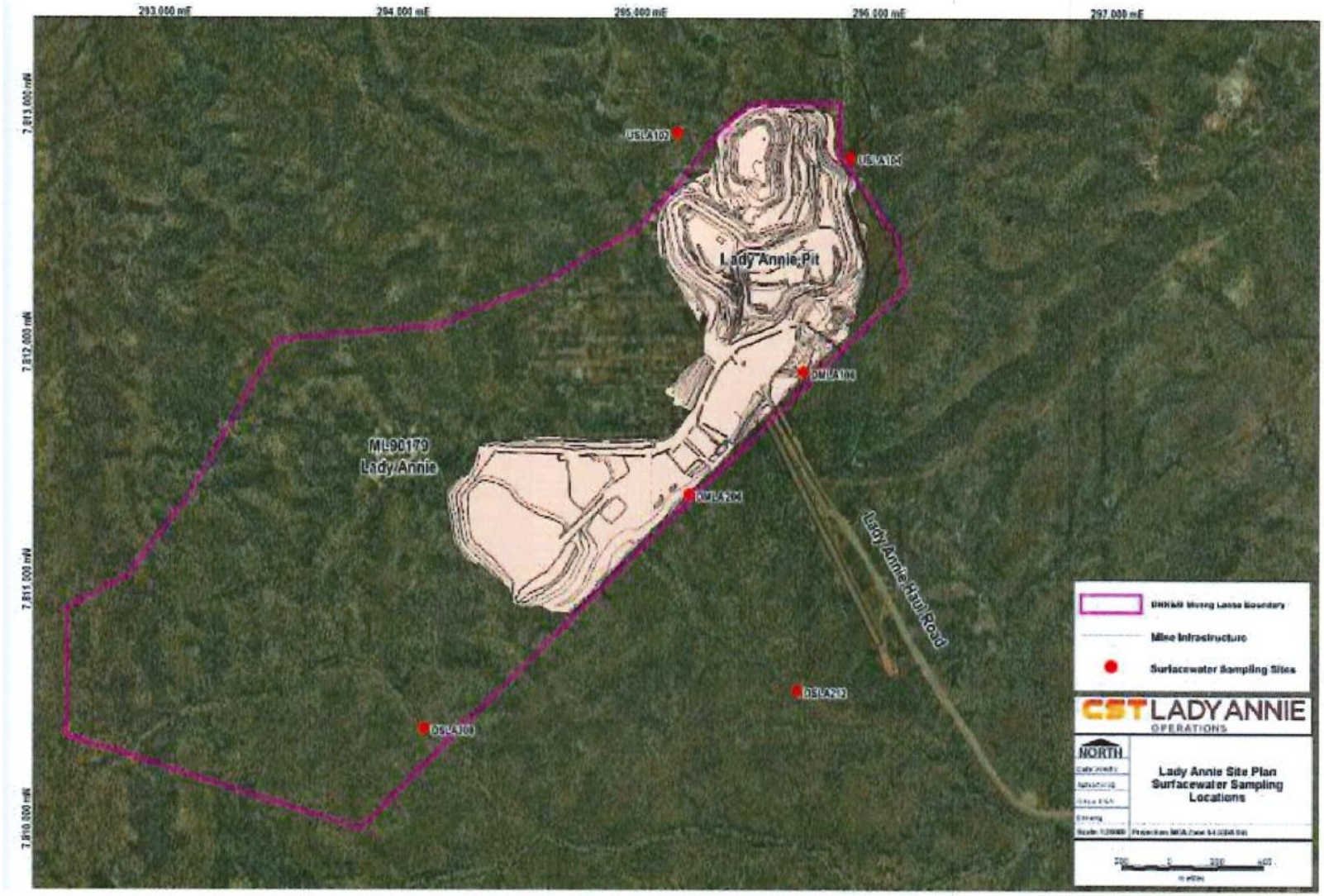


Figure K5(b) – Surface Water and Sediments Monitoring Locations – Mt Kelly Mine

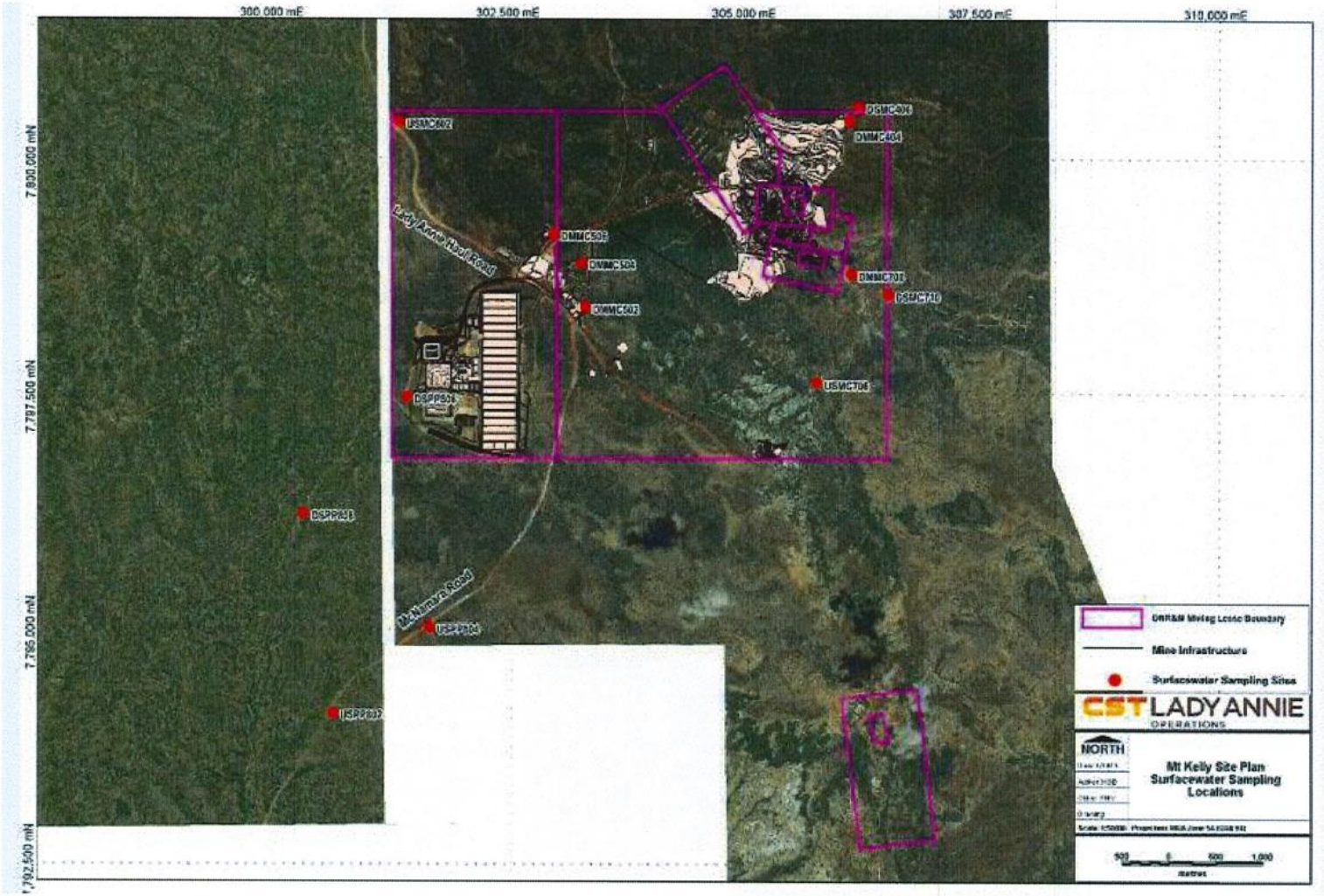


Figure K5(c) – Surface Water and Sediments Monitoring Locations – Anthill Mine

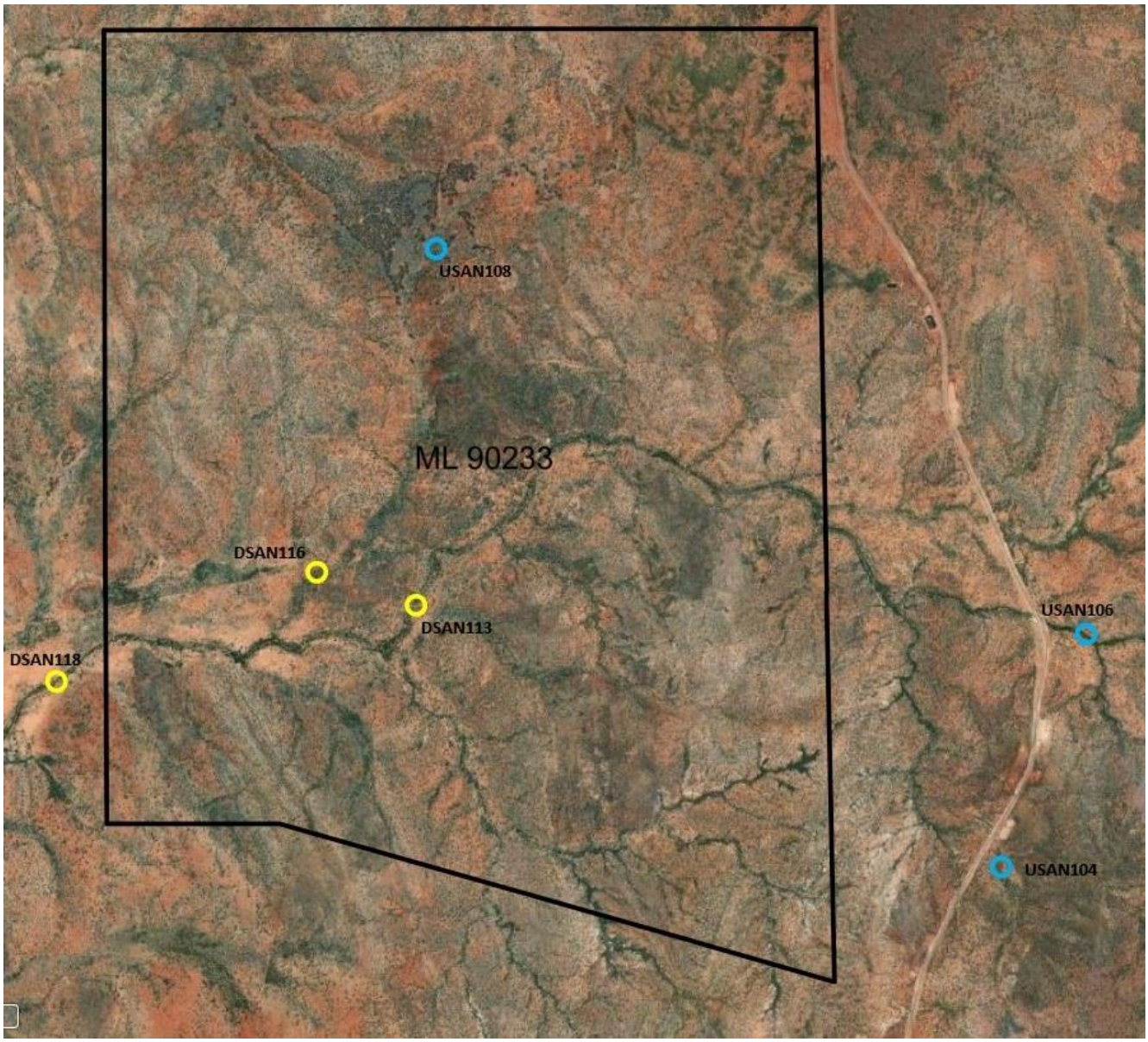
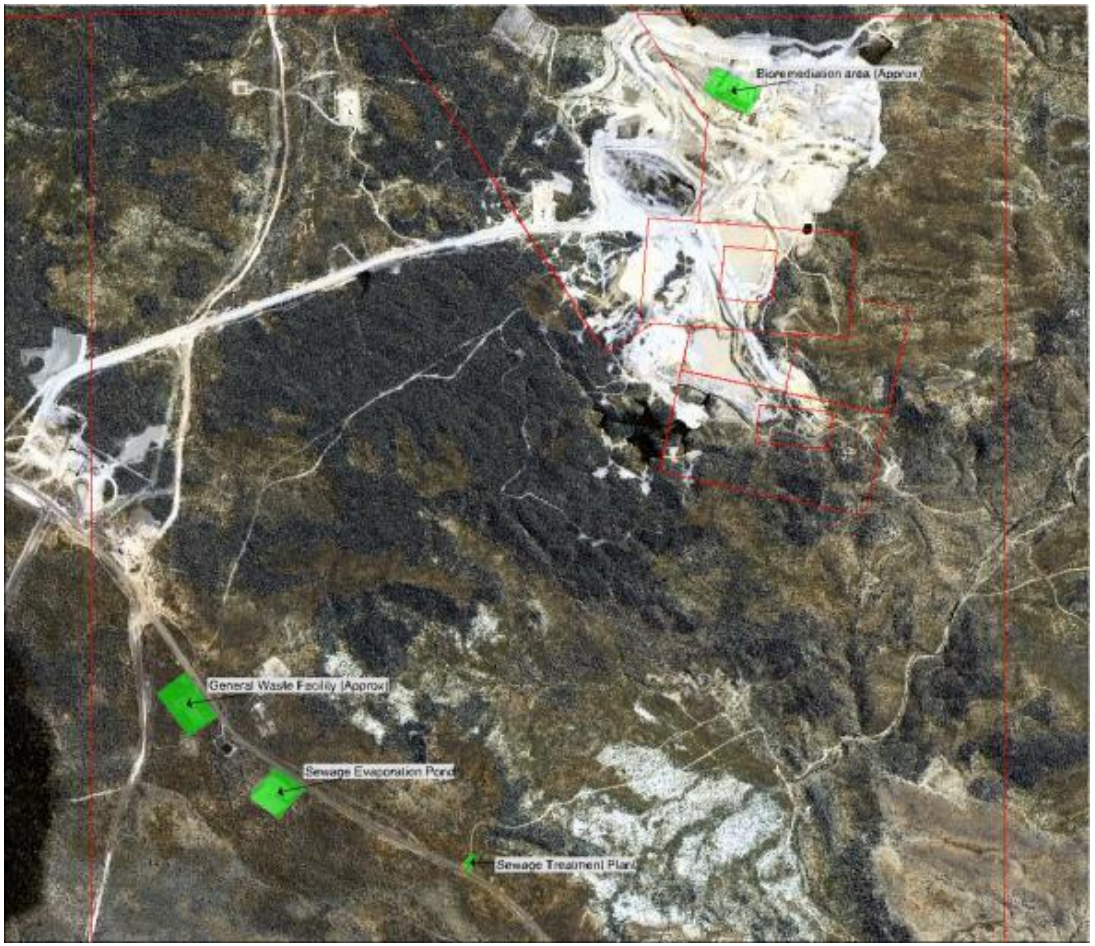


Figure K6 – STP and Effluent Disposal



END OF CONDITIONS FOR SCHEDULE K

END OF ENVIRONMENTAL AUTHORITY