Permit

Environmental Protection Act 1994

Environmental authority EPML00967013

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

Environmental authority number: EPML00967013

Environmental authority takes effect on 30 May 2025.

The anniversary date of this environmental authority is 25 January each year.

Environmental authority holder

Name(s)	Registered address
Gulf Alumina Pty Ltd	Level 4, 135 Wickham Terrace, Spring Hill, Brisbane, QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 11: Mining bauxite. Schedule 3 20: Clay pit mining, dimension stone mining or mining gemstones (including the material from which gemstones are extracted) (c) more than 1,000,000t in a year. 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 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour. Ancillary 33 - Crushing, milling, grinding or screening Crushing, grinding, milling or screening more than 5000t of material in a year. Ancillary 49 - Boat maintenance or repair Operating, on a commercial basis, a boat maintenance or repair facility for maintaining or repairing hulls, superstructure	ML6025, ML40069, ML40082

Environmentally relevant activity/activities	Location(s)
or mechanical components of boats or seaplanes. Ancillary 60 - Waste disposal 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) (a) less than 50,000t Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme.	ML6025, ML40069, ML40082

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 land give written notice to the administering authority if they become aware of the following:

- the presence of, or happening of an event involving, a hazardous contaminant on the land that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours); or
- if the land is contaminated land – a change in the condition of the land that is causing, or is reasonably likely to cause, serious or material environmental harm (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 land (notice must be given within 20 business days).

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 *Planning Act 2016* 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.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

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.

	30 May 2025
Signature	Date

Forough Ghasemi
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Minerals Business Centre
PO Box 7230, Cairns QLD 4870
Phone: (07) 4222 5352
Email: ESCairns@des.qld.gov.au

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)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access State controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Conditions of environmental authority

- Schedule A – General
- Schedule B – Air
- Schedule C – Waste
- Schedule D – Noise
- Schedule E – Water
- Schedule F – Groundwater
- Schedule G – Land and rehabilitation
- Schedule H – Coastal Structures
- Schedule I – Regulated structures
- Schedule J – Definitions
- Schedule K – Maps and plans

Schedule A: General	
Condition number	**Condition**
A1	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A2	In carrying out the mining activities the environmental authority holder must comply with **Table A1 - Authorised Mining Activities and Locations** and the following plans provided in Schedule K – Maps and plans: • Schedule A - Figure 1 - Skardon River Project Infrastructure Layout - Mine Area • Schedule A - Figure 2 - Skardon River Authorised Kaolin Mine Footprint • Schedule A - Figure 3 - Skardon River Port Infrastructure Area • Schedule A - Figure 4 - Skardon River Wharf Infrastructure Area • Schedule A - Figure 5 - Landfill, Bioremediation Pad and Groundwater Monitoring Bores • Schedule A - Figure 6 - Skardon River Mine Camp, Sewage Treatment Plant, Effluent Irrigation, and Storage Areas.
A3	The environmental authority holder must: a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; and b) maintain such measures, plant and equipment in a proper and efficient condition; and c) operate such measures, plant and equipment in a proper and efficient manner; and 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	
A4	Except where specified in another condition of this environmental authority, all monitoring data, records, reports, sampling results and plans required by this environmental authority must be kept for a period of at least five (5) years.
A5	When requested by the administering authority, copies of any item identified in condition A4 must be provided to the administering authority's nominated office within 10 business days, or an alternative timeframe agreed between the administering authority and the environmental authority holder.

Table A1 - Authorised Mining Activities and Locations

Mine Domain	Mine Feature Name	Tenure Type and Number	Location (MGA94 - Zone 54)		Maximum disturbance area (ha)
			Easting	Northing	
Port Infrastructure	Port Infrastructure Area	ML40069	616524.137	8699943.218	11.9
	Barge Loading Facility (BLF)	ML40069	616645.353	8700137.236	Included in port area
	Materials Offloading Facility (MOF)	ML40069	616766.939	8699951.399	Included in port area
	Workshop and Store	ML40069	616654.374	8699943.457	0.7
	Product Stockpiles	ML40069	616483.982	8700101.572	6.4
Airstrip	Existing Airstrip	ML6025	610082.703	8687983.85	84
	New Airstrip	ML6025	610006.463	8687775.185	n/a
Kaolin Wet plant	Kaolin overburden piles	ML6025	610317.75	8687150.12	4.4
	Kaolin Product Stockpile	ML6025	610471.127	8687156.308	5.5

Mine Domain	Mine Feature Name	Tenure Type and Number	Location (MGA94 - Zone 54)		Maximum disturbance area (ha)
			Easting	Northing	
	Claystone Overburden Piles	ML6025	610173.431	8686813.521	5.1
	Fluvial Overburden Pile	ML6025	609773.06	8686592.545	2.7
	Sand Waste	ML6025	610527.87	8687138.65	1.1
	Wet Plant General Infrastructure	ML6025	610639.12	8687152.11	6.2
Waste	Landfill 1	ML40069	616081	8699621	1
	Historic Waste Holding Area	ML40069	616294.432	8699994.787	0.85
	Landfill 3 (old Landfill)	ML40082	616285.26	8699988.38	0
Water storages	Port Sediment Pond 1	ML40069	616703.459	8699762.239	1.23
	Port Sediment Pond 2	ML40069	616572.547	8700180.529	1.2
	Claystone Pit	ML6025	609971.591	8686611.917	3.45
	Water pit	ML6025	609861.816	8686435.114	2.32
	Fluvial Pit	ML6025	609554.827	8686609.013	2.7
	Wet Plant Settlement Pond	ML6025	610314.78	8687145.33	0.63
	Wet Plant Sediment Dam	ML6025	610149.44	8687152.956	3.07
	Wet Plant Containment Dam	ML6025	610141.239	8687006.228	1.13
Bauxite Mine Pits	Skardon South Mining Area	ML40082	614894.769	8694064.365	528.24
	Namaleta North Mining Area	ML6025	609201.854	8687864.013	432.17
	Namaleta South Mining Area	ML6025	608190.998	8685696.054	267.9
Roads	Haul Road	ML40069	615079.319	8696188.374	75.5
	Pit 5 Road	ML40082	613280.11	8689675.98	1.88
Topsoil stockpiles	Alongside Haul road	ML40069	615079.319	8696188.374	14.6
Borrow Pits	Haul Road Borrow Pits	ML40069	various locations within orebody or road corridor	various locations within orebody or road corridor	22.3
Mine Camp and support infrastructure	Accommodation Camp	ML40082	612976.158	8689862.426	9.75
	Wet Weather Effluent Storage	ML40082 ML6025	612892.668	8689986.997	0.75
	Sewage Treatment Plant	ML6025	612961.764	8689972.768	0.1
	Irrigation Area (including composting and bioremediation area)	ML6025	612964.789304	8690035.24014	2

A6	When requested by the administering authority, the environmental authority holder must undertake monitoring within the specified timeframe to investigate any potential incident of environmental harm or a complaint reported in accordance with condition A14 and the results must be provided to the administering authority within 10 business days of the completion of monitoring the subject of the request.
A7	The following information must be recorded in relation to all monitoring required under the conditions of this environmental authority: a) the date and time at which the sample was taken; b) the location or monitoring point at which the sample was taken; c) the results of all monitoring and details of any exceedances of the conditions of this

	environmental authority. d) Any other pertinent details of relevance to interpreting the sampling results (i.e., stream flow, wind conditions or any unusual observations such as odour or colouration).
A8	Where monitoring is a requirement of this environmental authority, ensure that a competent person(s) conducts all monitoring.
Chemicals and flammable or combustible liquids	
A9	Spillage of all chemicals, waste oils and flammable and combustible liquids must be contained within an on-site containment system and controlled in a manner that prevents environmental harm.
A10	All piping and infrastructure associated with the loading and unloading of petroleum and diesel products must be designed, constructed and maintained in accordance with the latest edition of AS1940—The storage and handling of flammable and combustible liquids.
A11	All waste materials, explosives, hazardous chemicals, corrosive substances, toxic substances, gases and dangerous goods must be stored and handled in accordance with the current Australian standard. Where no relevant Australian Standard exists, all materials must be stored within an effective on-site containment system that prevents contamination of land or waters.
Risk management	
A12	By 1 April 2017, the holder of this environmental authority must develop and implement a risk management system for mining activities which complies with the content requirement of the Standard Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management.
Notification of emergencies, incidents and exceptions	
A13	The environmental authority holder must notify the administering authority within: a) 24 hours of becoming aware of any incident or event which does or may contravene a condition of this environmental authority; or b) 5 days where the contravention relates to a groundwater contaminant limit specified in **Table F2 – Groundwater contaminant limits and monitoring frequency**. c) 24 hours of becoming aware of any monitoring result that does not meet the limit specified in **Table E2 - Contaminated water release limits and monitoring frequency** and **Table E4 – Receiving water contaminant limits.** Notification to the administering authority must be provided to the administering authority's Pollution Hotline on 1300 130 372 and PollutionHotline@des.qld.gov.au.
Complaints	
A14	The environmental authority holder must notify the administering authority when a complaint is lodged and record all complaints received about the mining activities including: a) name, address and contact number for 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.
Third-party reporting	
A15	The environmental authority holder must: a) within one year of the commencement of this environmental authority, obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority; b) obtain further such reports at regular intervals, not exceeding three-yearly intervals, from the completion of the report referred to above; and c) provide each report to the administering authority within 90 days of its completion.
A16	The environmental authority holder must implement any findings arising from the audit (unless

	the administering authority confirms in writing they are not required) and take necessary action to ensure compliance with the conditions of this environmental authority.
Meteorological monitoring	
A17	The environmental authority holder must establish and maintain an automatic weather station to measure and record wind speed, wind direction, temperature and rainfall.
Commitments	
A18	All commitments found in the Skardon River Bauxite Project - Appendix 1 – Commitments Register (Version 1.0 10.08.2016), must be implemented by the environmental authority holder. Any proposed changes to the commitments register must be provided to the administering authority and the register updated by agreement prior to implementation. *Note 1: If there is an inconsistency between a commitment and a condition of this environmental authority, the environmental authority condition prevails.* *Note 2: The commitment register can be updated by an agreed amendment, in accordance with section 215(1) of the Environmental Protection Act 1994.*
Progressive Rehabilitation and Closure Plan (PRCP)	
A19	Notwithstanding any other condition of this environmental authority, the holder must not cause mining disturbance unless and until such time as that disturbance has an associated rehabilitation outcome provided for in the relevant PRCP schedule.

END OF CONDITIONS FOR SCHEDULE A

Schedule B: Air	
Condition number	**Condition**
B1	Discharges of contaminants to air must be in accordance with **Tables B1 - Release points (air)** and **Table B2 - Contaminant limits (air).**

Table B1 - Release points (air)

Release point	**Description (power generation unit)**	**Locations**		**Source description**	**Minimum release height (m)**	**Minimum exit gas temperature (ºC)**	**Minimum efflux velocity (m/s)**
		Easting (GDA94 MGA z54)	Northing (GDA94 MGA z54)				
Port Area							
RP1	Unit 1a	616650	8700111	400kW (500kva)	4	325	10
RP2	Unit 1b			400kW (500kva)	4	325	10
RP3	Unit 1c			400kW (500kva)	4	325	10
RP4	Unit 2			480kW (600kva) – spare / redundancy	4	325	10
RP5	Unit 3			120kW (150kva) – wet season	4	325	10
Camp Area							
RP6	Unit 4a	612939	8689921	280kW (350kva)	4	325	10
RP7	Unit 4b			280kW (350kva)	4	325	10
RP8	Unit 5			280kW (350kva) – spare / redundancy	4	325	10

B2	By 1 September 2017, the environmental authority holder must design and implement an air quality monitoring program that can determine compliance with condition B1.

Table B2 - Contaminant limits (air)

Contaminant	Release point	Maximum Release limit (g/sec)	Minimum monitoring frequency
CO	RP1, RP2, RP3, RP5, RP6 and RP7	1	All release points must be monitored during commissioning of the generators[1] and only release points RP1, RP2, RP3, RP5, RP6 and RP7 must be monitored once every two years thereafter.
	RP4 and RP8	1	
NO_x	RP1, RP2, RP3, RP5, RP6 and RP7	3.5	
	RP4 and RP8	2	

Table B2 - Contaminant limits (air) notes:

1. Within 3 months of commencing operation of the generators listed in Table B1, the environmental authority holder must conduct air emission monitoring to demonstrate compliance with air emission limits listed in Table B2 – Contaminant limits (air).

B3	Dust and particulate matter emissions generated by mining activities must not exceed the following levels when measured at any sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method. 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, for no more than five exceedances recorded each year, when monitored in accordance with the most recent version of either: 1. Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} high volume sampler with size-selective inlet – Gravimetric method, or; 2. Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method. c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres ($PM_{2.5}$) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)2.5(/sub) low volume sampler—Gravimetric method. d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1 year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method.
Odour nuisance	
B4	The release of noxious or offensive odour(s) or any other airborne contaminant(s) resulting from the mining activity must not cause environmental harm at any sensitive or commercial place.

END OF CONDITIONS FOR SCHEDULE B

Schedule C: Waste	
Condition number	**Condition**
C1	All waste generated as part of the mining activities must be disposed of in a lawful manner at an off-site facility, with the exception of: a) Treated sewage effluent, which must be released in accordance with all conditions of this environmental authority; and b) General waste, which can be disposed of in the landfill facilities identified in Table C1 – Location of approved landfills.

Table C1 - Location of approved landfills

Identification [a]	Easting (MGA94 zone 54)	Northing (MGA94 zone 54)	Description
Landfill 1	616081	8699621	Landfill approved within ML40069
Proposed Landfill	616037	8699629	
Landfill expansion area	616030	8699704	

Table C1 - Location of approved landfills notes:
a) Locations presented in Schedule K: Maps and Plans, Schedule A - Figure 5 - Landfill, Bioremediation Pad and Groundwater monitoring bores.

C2	Leachate or stormwater runoff that has been in contact with waste materials in the landfill, bioremediation pad or waste storage areas must not be used for the purposes of irrigation, dust suppression or release to the receiving environment.
Waste Management Plan	
C3	The environmental authority holder must develop and implement a Waste Management Plan (WMP).
Regulated and hazardous waste storage	
C4	Regulated waste, including tyres, awaiting removal may be temporarily stored on site awaiting removal provided it is stored to ensure there is minimal risk of causing fire or contamination to land or waters.
Storage of Tyres	
C5	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a 10m radius of a tyre storage area.
New proposed landfill and landfill expansion area	
C6	As of 21 December 2016, only construction and demolition waste from the demolition of the kaolin mine can be disposed of in Landfill 1.
C7	The proposed landfill and landfill expansion area must be designed and constructed by an appropriately qualified person.
C8	The proposed landfill and landfill expansion area must be constructed in accordance with the design required by condition C7.
C9	A landfill leachate collection system must be designed by an appropriately qualified person and installed and maintained by the environmental authority holder to: 1. collect leachate generated in the proposed landfill, landfill expansion areas and bioremediation pads; 2. direct the collected leachate out of the proposed landfill, landfill expansion area and bioremediation pads into an appropriate leachate storage facility; and

	3. prevent the release of leachate to the receiving environment.
C10	A landfill liner system must be installed and maintained to: 1. prevent release of contaminants, including leachate, to land and waters; 2. prevent the percolation of groundwater into the landfill; and 3. prevent subsurface migration of landfill gas from the landfill unit.
Bioremediation pads	
C11	The only wastes permitted to be processed by bioremediation are grease trap waste, biosolids, hydrocarbon contaminated soil and cardboard waste.
C12	All bioremediation must take place on the bioremediation pads identified in **Table C2 - Location of bioremediation pads**.

Table C2 - Location of bioremediation pads

Bioremediation Pad	Easting (MGA94 - zone 54)	Northing (MGA94 - zone 54)	Description
11[a]	610284	8687075	Previous wet plant area
21[b]	616156	8699830	Port area

Table C2 - location of bioremediation pads notes:
a) Locations presented in Schedule K: Maps and Plans, Schedule A - Figure 2 - Skardon River authorised Kaolin mine footprint
b) Locations presented in Schedule K: Maps and Plans, Schedule A - Figure 5 - Landfill, Bioremediation Pad and Groundwater monitoring bores.

C13	Soil conditioning activities must be conducted in accordance with the current Australian Standard and must not exceed 200 tonnes or more of compost or soil conditioners in a year.
C14	The locations where bioremediated materials are placed must be recorded.
Rehabilitation of landfills	
C15	When the deposition of waste to the landfill unit ceases, a final capping system for the landfill unit must be designed by an appropriately qualified person and installed by the environmental authority holder to minimise: 1. infiltration of water into the landfill unit; 2. water ponding on the surface; 3. percolation of groundwater into the landfill and 4. erosion of the final capping system.
C16	A landfill post-closure management plan must be designed and implemented by the environmental authority holder for a period of 10 years or until the administering authority determines that the landfill units are stable and that no release of waste materials, leachate, landfill gas or other contaminants that may cause environmental harm is likely. The landfill post-closure management plan must include measures to: 1. maintain the structural integrity and effectiveness of the final capping system; 2. maintain and operate the leachate collection system; 3. maintain the groundwater monitoring system and monitor the quality of groundwater in accordance with the conditions of this environmental authority; 4. maintain and operate the landfill gas monitoring system; and 5. maintain and operate the landfill gas collection system.

END OF CONDITIONS FOR SCHEDULE C

Schedule D : Noise	
Condition number	**Condition**
D1	The environmental authority holder must ensure that noise generated by the mining activities does not cause the criteria in Table D1 – Noise limits to be exceeded at a sensitive place or commercial place.

Table D1 – Noise limits

Sensitive place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to 10pm**	**10pm to 7am**	**9am to 6pm**	**6pm to 10pm**	**10pm to 9am**
$L_{Aeq, adj, 15 mins}$	CV = 50 AV = 5	CV = 45 AV = 5	CV = 40 AV = 0	CV = 45 AV = 5	CV = 40 AV = 5	CV = 35 AV = 0
$L_{A1, adj, 15 mins}$	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5
Commercial place						
Noise level dB(A) measured as:	**Monday to Saturday**			**Sundays and public holidays**		
	7am to 6pm	**6pm to10pm**	**10pm to7am**	**7am to 6pm**	**6pm to 10pm**	**10pm to 7am**
$L_{Aeq, adj, 15 mins}$	CV = 55 AV = 10	CV = 50 AV = 10	CV = 45 AV = 5	CV = 50 AV = 10	CV = 45 AV = 10	CV = 40 AV = 5

Table D1 – Noise limits notes:

1. CV = Critical Value
2. AV = Adjustment Value
3. To calculate noise limits in Table D1:
   If bg ≤ (CV – AV): Noise limit = bg + AV
   If (CV – AV) < bg ≤ CV: Noise limit = CV If bg > CV: Noise limit = bg + 0
4. In the event that measured bg ($L_{A90, adj, 15 mins}$) is less than 30 dB(A), then 30 dB(A) can be substituted for the measured background level
5. bg = background noise level ($L_{A90, adj, 15 mins}$) measured over 3-5 days at the nearest sensitive receptor
6. If the project is unable to meet the noise limits as calculated above alternative limits may be calculated using the processes outlined in the "Planning for Noise Control" guideline.

Monitoring and reporting	
D2	When requested by the administering authority noise monitoring and recording must include the following descriptor characteristics and matters: a) $L_{Aeq, adj, 15 mins}$; b) $L_{A1, adj, 15 mins}$; c) background noise $L_{A90, adj, 15 mins}$, measured over 3-5 days at the nearest sensitive receptor. d) the level and frequency of occurrence of impulsive or tonal noise and any adjustment and penalties to statistical levels; e) atmospheric conditions including temperature, relative humidity and wind speed and directions; f) effects due to any extraneous factors such as traffic noise; g) location, date and time of monitoring; and h) if the complaint concerns low frequency noise, Max LpLIN,T and one third octave band measurements in dB(LIN) for centre frequencies in the 10 – 200 Hz range.
D3	If monitoring indicates an exceedance of the limits in Table D1 - Noise Limits, then the environmental authority holder must: a) address the exceedance, and b) immediately implement noise abatement measure so that emissions of noise from the activity do not result in further environmental harm.

D4	The method of measurement and reporting of noise level must comply with the latest edition of the administering authorities Noise Measurement Manual.

END OF CONDITIONS FOR SCHEDULE D

Schedule E: Water	
Condition number	**Condition**
Release of contaminants to waters	
E1	Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters, except as permitted under the conditions of this environmental authority.
E2	By 1 December 2018, site specific limits for all quality characteristics listed in Table E2 - Contaminated water release limits and monitoring frequency and Table E4 – Receiving water contaminant limits (with the exception of, oil or grease) must be calculated in accordance with the minimum data requirements and be provided to the administering authority. Note 1: The raw data must be provided with the calculated site specific trigger values.
E3	The release of contaminants to waters must only occur from the release points specified in Table E1 – Contaminated water release points, sources and receiving waters.
E4	The release of contaminants to waters in accordance with condition E3 must only occur during the wet season and/or periods of natural flow.
E5	The release of contaminants to waters in accordance with condition E3 must comply with all the requirements specified in Table E2 - Contaminated water release limits and monitoring frequency when measured at the monitoring points specified in Table E1 - Contaminated water release points.

Table E1 - Contaminated water release points

Release point (RP)	Easting (MGA94 - Z54)	Northing (MGA94 - Z54)	Contaminated water source and location [a]	Monitoring point	Receiving Waters locations
Port area sediment ponds					
S13 (via pipe and spillway)	616718	8699703	Port sediment pond 1	At release point	Skardon River
S14 (via pipe and spillway)	616520	8700248	Port sediment pond 2		
Kaolin mine water storage ponds					
S3	609803	8686458	Raw Water Pit	At release point	Namaleta Creek

Table E1 - Contaminated water release points notes:
a) Locations presented in Schedule K: Maps and Plans, Schedule E – Figure 1 – Surface water monitoring and Contaminant release location.

Table E2 - Contaminated water release limits and monitoring frequency

Quality characteristic	Unit	Release limits [a]	Monitoring frequency
Port area sediment ponds			
Turbidity	NTU	100	First sample within 18 hours, daily for 7 days, then weekly thereafter for the duration of the release event
pH	pH units	5.0-8.5	
Aluminium	µg/L	89	
Oil or grease	No visible film		
Kaolin mine water storage ponds			

Quality characteristic	Unit	Release limits [a]	Monitoring frequency
Turbidity	NTU	75	First sample within 18 hours, daily for 7 days, then weekly thereafter for the duration of the release event.
Electrical conductivity (EC)	µS/cm	323	
pH	pH units	5.0-8.5	
Aluminium	µg/L	380	
Oil or grease	No visible film		

Table E2 - Contaminated water release limits and monitoring frequency notes:
a) All metals and metalloids must be measured as dissolved (filtered). Release limits for metal / metalloids apply if the dissolved concentration exceed the limit.

E6	The environmental authority holder must: a) rehabilitate the fluvial pit, the fluvial overburden stockpile and claystone overburden stockpiles identified in Schedule A - Figure 2 - Skardon River authorised Kaolin mine footprint by 1 November 2023 to minimise the runoff of fluvial and claystone material into the kaolin mine water storage ponds in accordance with the Kaolin Mine Rehabilitation Plan. b) by 12 May 2023, submit a work program to the administering authority that includes the completion date for each stage of the Fluvial and Claystone overburden stockpiles rehabilitation works in accordance with the Kaolin Mine Rehabilitation Plan; and c) submit to the administering authority progress reports on the works completed for rehabilitation of the overburden stockpiles referred to in condition E6(a) on 7 July 2023 and on 8 September 2023. The progress reports must include description of: i) works completed, with photos; and ii) works remaining until final completion.
E7	The environmental authority holder must by 31 December 2023, submit an updated Kaolin Mine Rehabilitation Plan that includes a monitoring program to identify any breaches/failure of the rehabilitation works and how those breaches/failures will be addressed.
E8	From 1 September 2017, the daily rate and quantity of contaminated water released from the Port Area Sediment Pond release points listed in **Table E1 – Contaminated Water release points,** must be measured and recorded. The daily rate and quantity of any release from the Kaolin Mine water storage ponds must be measured and recorded.
E9	The release of contaminants to waters in accordance with condition E3 must be undertaken so as not to cause erosion of the bed and banks of the receiving waters.
E10	The release of contaminants to waters in accordance with condition E3 must not be released as a result of overtopping or flooding of the Port area sediment dams; and the release of contaminants to waters in accordance with condition E3 must be managed to prevent or minimise the likelihood of a release as a result of overtopping or flooding of the Kaolin Mine Water Storage Ponds.
Receiving environment monitoring	
E11	The environmental authority holder must not at any time cause a change to the existing condition of the mining activities receiving waters that are of high ecological value (HEV) waters, including: • Skardon River; • Namaleta Creek; and • Regional Ecosystem 3.3.14 (refer to **Schedule H—Figure 7 Location of the relevant Regional Ecosystem 3.3.14**).
E12	Quality characteristics listed in **Table E4 – Receiving Water Quality Objectives** must be measured at the monitoring points **Table E3 - Receiving water monitoring points** and at a frequency specified in **Table E4 – Receiving Water Quality Objectives.**

E13	Quality characteristics listed in **Table E4 – Receiving Water Quality Objectives** must not be exceeded in three consecutive samples measured at the monitoring points specified in **Table E3 – Receiving water monitoring points.**
E14	If the water quality objective specified in **Table E4 – Receiving Water Quality Objectives** is exceeded in accordance with condition E13 the environmental authority holder must: a) Undertake an investigation to determine; i. The extent of change from the water quality objective specified in **Table E4 – Receiving Water Quality Objective**; and ii. The potential adverse ecological impacts due to the change; iii. The potential relationship for the variation with natural or mining activities; and iv. If a relationship with mining activities is determined, the management measures proposed to comply with the receiving water quality objectives specified in **Table E4 – Receiving Water Quality Objective** b) Provide a report to the administering authority detailing the outcomes of condition E14 (a)(i) to condition E14(a)(iii), including a plan to implement the management measures proposed in accordance with condition E14(a)(iv); c) Provide monthly reports to the administering authority until the receiving water quality objectives that were exceeded are complied with. *Note: Where an exceedance of a receiving water quality objective has occurred and is being investigated, no further reporting is required for subsequent trigger events for that quality characteristic.*

Table E3 - Receiving waters monitoring points

Monitoring points [a]	Easting (MGA94, Z54)	Northing (MGA94, Z54)	Receiving Water location description
Skardon River - Lower Estuary			
W5	610246	8700107	8 km downstream of the SRBP MIA, 18.8 km to BH6-BH1 haul road watercourse crossover (following the watercourse)
W4	614292	8701663	1.2 km downstream of the SRBP MIA, 11.8 km BH6-BH1 haul road watercourse crossover (following the watercourse)
Skardon River - Mid Estuary			
W3	617295	8699517	700 m upstream of the SRBP MIA, 10 km downstream BH6-BH1 haul road watercourse crossover (following the watercourse)
W6	617697	8698323	2.1 km upstream of the SRBP MIA, 8.6 km downstream BH6-BH1 haul road watercourse crossover (following the watercourse)
W11	618248	8698956	2 km upstream of the SRBP MIA on the northern branch of the Skardon River upper estuary
W12	616599	8696123	6 km upstream of the SRBP MIA on the southern branch of the Skardon River
W13	616984	8699816	250m upstream of the MOF
W14	616754	8700347	350m downstream of the MOF
MOF	616824	8699960	At the Port Facility
Skardon River - Upper Estuary			
W2	620194	8694108	10.4 km upstream of the SRBP MIA, 9 km downstream BH6-BH1 haul road watercourse crossover (following the watercourse)
W8	616414	8692916	8.1 km upstream of the SRBP MIA, 2.7 km downstream BH6-BH1 haul road watercourse crossover (following the watercourse)
Skardon River - Freshwater			

Monitoring points [a]	Easting (MGA94, Z54)	Northing (MGA94, Z54)	Receiving Water location description
W9	621578	8694834	14.2 km upstream of the SRBP MIA, 12.3 km downstream BH6-BH1 haul road watercourse crossover (following the watercourse)
W10	617844	8690762	151 m upstream of BH6 East to BH1 haul road
Namaleta Creek – Freshwater section			
S1a	610225	8686114	1,285m upstream of Kaolin Pits
S6	609392	8686912	Approximately 600m downstream of release point S9
S9	609644	8686416	100m downstream of the S3 RP

Table E3 - Receiving water monitoring points notes:
a) Locations presented in Schedule K - Maps and Plans: Schedule E – Figure 1 – Surface water monitoring locations
Note: The data from reference monitoring points must not be used where they are affected by releases from mining activities.

Table E4 – Receiving Water Quality Objectives

Quality Characteristic	Unit	Limit [a]	Limit Type	Monitoring Frequency	
				During release	During no release
Skardon River - Lower Estuary – Wet Season					
pH	range	6.4 – 8.7	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	13			
TSS [b]	mg/L	62			
Aluminium [c]	µg/L	120			
Oil or Grease	No visible film				
Skardon River - Lower Estuary – Dry Season					
pH	range	6.8 – 9.3	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	2.9			
TSS [b]	mg/L	16			
Aluminium [c]	µg/L	130			
Oil or Grease	No visible film				
Skardon River - Mid Estuary – Wet Season					
pH	range	5.9 – 8.1	Three consecutive samples	Weekly	Monthly
Turbidity	NTU	9.9			
TSS [b]	mg/L	29			
Aluminium [c]	µg/L	95			
Oil or Grease	No visible film				
Skardon River - Mid Estuary – Dry Season					
pH	range	5.6 – 8.7	Three consecutive samples	Weekly	Monthly
Turbidity	NTU	4.5			
TSS [b]	mg/L	22			
Aluminium [c]	µg/L	120			
Oil or Grease	No visible film				
Skardon River - Upper Estuary – Wet Season					
pH	range	5.1 – 7.8	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	4.4			
TSS [b]	mg/L	5			
Aluminium [c]	µg/L	97			
Oil or Grease	No visible film				
Skardon River - Upper Estuary – Dry Season					
pH	range	4.0 – 8.3	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	5.4			
TSS [b]	mg/L	16			
Aluminium [c]	µg/L	158			
Oil or Grease	No visible film				

Quality Characteristic	Unit	Limit [a]	Limit Type	Monitoring Frequency	
				During release	During no release
Skardon River – Freshwater – Wet Season					
pH	range	4.5 - 6.2	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	1.6			
TSS [b]	mg/L	5			
EC [d]	µS/cm	25			
TDS [4e]	mg/L	16			
Aluminium [c]	µg/L	53			
Oil or Grease	No visible film				
Skardon River - Freshwater – Dry Season					
pH	range	4.8 – 7.2	Three consecutive samples	Fortnightly [f]	Monthly
Turbidity	NTU	1.7			
TSS [b]	mg/L	5			
EC [d]	µS/cm	29			
TDS [e]	mg/L	23			
Aluminium [c]	µg/L	31			
Oil or Grease	No visible film				
Namaleta Creek – Freshwater – Wet Season					
pH	range	3.8 – 7.7	Three consecutive samples	Weekly [g]	Monthly
Turbidity	NTU	7.5			
TSS [b]	mg/L	5			
EC [d]	µS/cm	65			
TDS [e]	mg/L	42			
Aluminium [c]	µg/L	190			
Oil or Grease	No visible film				
Namaleta Creek - Freshwater – Dry Season					
pH	range	2.6 – 8.8	Three consecutive samples	Weekly [g]	Monthly
Turbidity	NTU	5.5			
TSS [b]	mg/L	5			
EC [d]	µS/cm	3,949			
TDS [e]	mg/L	1,800			
Aluminium [c]	µg/L	140			
Oil or Grease	No visible film				
All waters					
Major ions	mg/L	For interpretation purposes only		Monthly	
Redox Potential	mV				

Table E3 - Receiving water monitoring points notes:
a) The limit is the 80th percentile of true population data.
b) Total Suspended Solids
c) Dissolved Aluminium
d) Electrical Conductivity
e) Total Dissolved Solids
f) From release points S13 and S14
g) From release point S3

Receiving environment monitoring program (REMP)	
E15	By 1 September 2017, the environmental authority holder must develop and implement a Receiving Environment Monitoring Program (REMP) to monitor, identify and describe any adverse impacts to surface water and groundwater environmental values, quality and flows due to the mining activity. This must include monitoring the effects of the mine on the receiving environment periodically and while contaminants are being discharged from the site. For the purposes of the REMP, the receiving environment is the waters of: • the Skardon River;

	• Namaleta Creek; • Connected or surrounding waterways of the Skardon River and Namaleta Creek; • Wetlands (including Bigfoot Print and Lunette Swamps); • Groundwater. The REMP must encompass any sensitive receiving waters or environmental values downstream of the authorised mining activity that will potentially be affected (directly or indirectly) by release of contaminants to waters. The REMP must be designed and implemented in order to demonstrate that the environmental values of Lunette Swamp and Bigfoot Print Swamp are comparable to pre mining conditions. The REMP must measure any adverse impacts on flora and fauna species richness and species abundance. Note: The environmental values of wetlands are defined under section 81A of the Environmental Protection Regulations 2008.
E16	A report outlining the findings of the REMP, including all monitoring results and interpretations, must be prepared annually and submitted to the administrating authority on request. This must include an assessment of background and reference water quality, and downstream water quality compared against water quality objectives and the suitability of current discharge limits to protect downstream environmental values.
E17	Long term monitoring and assessment of the ambient water quality at the locations specified in **Table E3 – Receiving water monitoring point** must be provided as part of the annual REMP report required under condition E16 and based on the water quality objectives specified in **Table E4 – Receiving Water Quality Objectives**.
Water management plan	
E18	By 1 April 2017, a Water Management Plan (WMP), which a includes surface water and groundwater management and monitoring plan, must be developed by an appropriately qualified person and implemented by the environmental authority holder.
Integrated Marine Monitoring Program	
E19	By 1 April 2017, an Integrated Marine Monitoring Program (IMMP) must be developed by an appropriately qualified person and implemented by the environmental authority holder. The IMMP must include the monitoring and management of the following; • Marine water quality; • Sediment quality; • Vessel wake waves; • Seagrass; • Mangroves; • Propeller wash; and • Marine introduced pests.
Stormwater and water sediment controls	
E20	A certified Erosion and Sediment Control Plan (ESCP) must be developed by a Certified Professional in Erosion and Sediment Control and implemented by the environmental authority holder.
E21	By 1 November each year, the ESCP must be updated and implemented to include all disturbed areas.
E22	The minimum design standard of the erosion and sediment control ponds must be designed to capture rainfall and catchment runoff during a 1:10 ARI 24 hour storm event. Note: This condition excludes sediment ponds constructed for the pre-existing kaolin mine.

END OF CONDITIONS FOR SCHEDULE E

Schedule F: Groundwater	
Condition number	**Condition**
F1	The environmental authority holder must not release contaminants to groundwater.
Monitoring program and reporting	
F2	Groundwater levels within each monitoring bore specified in Table F1 - Groundwater monitoring locations must be monitored at a minimum frequency of once per month.

Table F1 - Groundwater monitoring locations

Monitoring bore		**Location[a] (GDA)**		**Surface RL (m)[b]**	**Screened interval RL (m)**
		Latitude	**Longitude**		
Zone A					
Namaleta Creek Cluster	G1	11.870103041	142.026568065	10.5	3 - 12
	G2	11.875215865	142.015441903	9.38	11 - 14
	G3	11.876730319	142.006624841	4.45	4 - 12
	G4	11.881143472	142.003923506	2.3	1 - 6
	G6	11.861899390	141.999464916	6.56	6 - 8
	G7	11.861118618	141.982285828	5.75	6 - 10
	G14	11.873554127	142.002206478	2.18	6 - 12
Camp Cluster	C1	11.843356546	142.033986149	10.9	15 - 21
	G8	11.842470949	142.006205502	6.57	6 - 10
	G20	11.849141126	142.037110657	12.55	4.32-10.32
	G21	11.848525800	142.037236851	11.45	8.36-13.44
	G39	11.839694	142.044088	12.48	5.41-11.16
Zone B					
BH1 Area	G31	11.799724700	142.132237583	7.4	11.5 – 17.5
BH1 Mining Area Cluster	G35	11.793650359	142.124943995	17.89	15.7 – 21.7
	G37	11.803235743	142.087518444	14.17	16 - 22
	G38	11.790138650	142.083780558	5.16	6.7 – 12.7
Camp Cluster	C3	11.824371995	142.057458639	11.2	15 - 21
	G9	11.821397542	142.047598411	12.24	11.75 – 14.75
Zone C					
BH6 Mining Area Cluster	G10	11.801539856	142.054158054	10.51	8.9 – 11.9
	G17	11.774447521	142.058286053	7.44	26.5 - 31.5
	G29	11.785970175	142.040296198	5.52	11.5 – 11.75
	G33	11.809882934	142.033878819	8.36	13.5 - 19.5
	G34	11.803361992	142.031816815	7.57	12.9 – 18.9
Port Area	G27	11.756877599	142.070699039	3.42	6.18 - 11.35
Port Area Main Cluster	G5	11.761854980	142.070231904	2.98	4 - 10
	G22	11.760892528	142.065805022	5.77	7.4 -11.82
	G23	11.760822283	142.065244972	6.11	6.26 - 9.71
	G32	11.762549744	142.065132319	6.35	15.5 - 21.5

Table F1 - Groundwater monitoring locations notes:

a) All Locations presented in Schedule F - Figure 1, 2, 3, 4 and 5

b) RL must be measured at the top of the bore casing to the nearest 5cm.

F3	Groundwater quality must be monitored: a) At each monitoring bore specified in **Table F1 - Groundwater monitoring locations**; and b) For all quality characteristics specified in Table F2 - Groundwater contaminant limits and monitoring frequency; and c) At the frequency specified in **Table F2 - Groundwater contaminant limits and monitoring frequency**.

Table F2 – Groundwater contaminant limits and monitoring frequency

Quality characteristics	Unit	Limit A (80th percentile)	Limit B (95th percentile)	Monitoring frequency
Aluminium	µg/L	**83** for all monitoring bores except the following	**150** for all monitoring bores except the following	Monthly
		140 for monitoring bore C1	**200** for monitoring bore C1	
		120 for monitoring bore G21	**240** for monitoring bore G21	
Arsenic	µg/L	Not applicable	**13**	Quarterly
Cadmium	µg/L	Not applicable	**0.3** for monitoring bore G33	
			0.2 for all other monitoring bores	
Chromium	µg/L	Not applicable	**1**	
Copper	µg/L	Not applicable	**1.4** for monitoring bores G17, G20, G23, G32 & G38	Quarterly
		26 for monitoring bores C1, G5 & G6	**42** for monitoring bores C1, G5 & G6	
		6 for monitoring bores C3, G1, G2, G3, G7, G8, G9, G21, G22, G29, G31, G33, G34, G35, G37 & G39	**10** for monitoring bores C3, G1, G2, G3, G7, G8, G9, G21, G22, G29, G31, G33, G34, G35, G37 & G39	
		13 for monitoring bore G4	**17** for monitoring bore G4	
		10 for monitoring bore G10	**19** for monitoring bore G10	
		30 for monitoring bore G14	**50** for monitoring bore G14	
		2.5 for monitoring bore G27	**4.3** for monitoring bore G27	
Iron	µg/L	**4,420** for monitoring bores G7, G8, G17, G27, G29, G32, & G34	**5,050** for monitoring bores G7, G8, G17, G27, G29, G32, & G34	Quarterly
		700 for monitoring bores G2, G5, G21, G22 & G31	**1,300** for monitoring bores G2, G5, G21, G22 & G31	
		55 for monitoring bores G1, G3, G6, G10, G14, G20, G38 & G39	**200** for monitoring bores G1, G3, G6, G10, G14, G20, G35, G37, G38 & G39	
		122 for monitoring bore G35		
		88 for monitoring bore G37		
		190 for monitoring bore C1	**340** for monitoring bore C1	
		67 for monitoring bore C3	**217** for monitoring bore C3	
		1,100 for monitoring bore G4	**1,360** for monitoring bore G4	
		240 for monitoring bore G9	**453** for monitoring bore G9	
		92 for monitoring bore G23	**223** for monitoring bore G23	
		5,420 for monitoring bore	**6,285** for monitoring bore	

Quality characteristics	Unit	Limit A (80th percentile)	Limit B (95th percentile)	Monitoring frequency
		G33	G33	
Lead	µg/L	Not applicable	**3.4** for all monitoring bores	Quarterly
Manganese	µg/L	Not applicable	**1,900** for all monitoring bores	Quarterly
Nickel	µg/L	Not applicable	**11** for all monitoring bores	Quarterly
Vanadium	µg/L	Not applicable	**6** for all monitoring bores	Quarterly
Zinc	µg/L	**44** for all monitoring bores except the following	**73** for all monitoring bores except the following	Quarterly
		90 for monitoring bore C1	**135** for monitoring bore C1	
		68 for monitoring bore G37	**100** for monitoring bore G37	
Sulfate	mg/l	**61** for monitoring bore C1	**70** for monitoring bore C1	Monthly
		13 for monitoring bores C3, G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	**27** for monitoring bores C3, G1, G2, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	
			37 for monitoring bore G3	
		140 for monitoring bores G29	**150** for monitoring bores G17 & G29	
		Not applicable for monitoring bore G17		
		670 for monitoring bore G27	**1,200** for monitoring bore G27	
		59 for monitoring bore G31	**109** for monitoring bore G31	
		29 for monitoring bore G32	**35** for monitoring bore G32	
		80 for monitoring bore G33	**84** for monitoring bore G33	
		93 for monitoring bore G34	**100** for monitoring bore G34	
Electrical Conductivity	µS/cm	**113** for monitoring bores C1, C3, G1, G2, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	**233** for monitoring bores C1, C3, G1, G2, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	Monthly
		790 for monitoring bore G3, G33	**1,100** for monitoring bore G3	
		Not applicable for monitoring bore G17	**910** for monitoring bore G17	
		16,800 for monitoring bore G27	**21,450** for monitoring bore G27	
		734 for monitoring bore G29	**779** for monitoring bore G29	
		314 for monitoring bore G32	**403** for monitoring bore G32	
			1,600 for monitoring bore G34	
		Not applicable for monitoring bore G31 & G34	**1,200** for monitoring bore G31 & G33	
pH	pH units	minimum of **4.4** and maximum of **6** for monitoring bore C1	minimum of **4.2** and maximum of **6.5** for monitoring bore C1	Monthly
		minimum of **4.3** and maximum of **6** for monitoring bore G6	minimum of **4.1** and maximum of **6.5** for monitoring bore G6	
		minimum of **4.4** and	minimum of **4.2** and	

Quality characteristics	Unit	Limit A (80th percentile)	Limit B (95th percentile)	Monitoring frequency
		maximum of **6** for monitoring bores G22 & G23	maximum of **6.5** for monitoring bores G22& G23	
		minimum of **4.6** and maximum of **7.0** for monitoring bores G17 & G31	minimum of **4.3** and maximum of **7.2** for monitoring bores G17 & G31	
		minimum of **4.3** and maximum of **6** for monitoring bores G10, G29, G33 & G34	minimum of **4.3** and maximum of **6.5** for monitoring bores G10, G29, G33 & G34	
		For all other bores minimum of **4.6** and maximum of **6**	For all other bores minimum of **4.3** and maximum of **6.5**	
Suspended solids	mg/l	No limit. For interpretation only.	No limit. For interpretation only.	Quarterly
		No limit. For interpretation only.	No limit. For interpretation only.	
Total dissolved solids	mg/l	**91** for monitoring bores G1, G2, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	**180** for monitoring bores C3, G1, G2, G4, G5, G6, G7, G8, G9, G10, G14, G20, G21, G22, G23, G35, G37, G38 & G39	Quarterly
		100 for monitoring bore C3		
		280 for monitoring bore C1	**491** for monitoring bore C1	
		This limit does not apply to monitoring bores G3, G17, G27, G29, G31, G32, G33 & G34	This limit does not apply to monitoring bores G3, G17, G27, G29, G31, G32, G33 & G34	
Turbidity	NTU	No limit. For interpretation only.	No limit. For interpretation only.	Monthly
Total Nitrogen	µg/L	**2,700** for monitoring bore G2	**3150** for monitoring bore G2	Monthly
		1,040 for monitoring bore G23	**1,320** for monitoring bore G23	
		1,000 for monitoring bore G35	**1,730** for monitoring bore G35	
		700 for monitoring bores C1, C3, G1, G3, G4, G5, G6, G7, G8, G9, G10, G14, G17, G20, G21, G22, G27, G29, G31, G32, G33, G34, G37, G38 & G39	**1,000** for monitoring bores C1, C3, G1, G3, G4, G5, G6, G7, G8, G9, G10, G14, G17, G20, G21, G22, G27, G31, G32, G33, G34, G37, G38 & G39	
			1,400 for monitoring bore G29	
Total Phosphorus	µg/L	**3,340** for monitoring bore G2	**3,385** for monitoring bore G2	Monthly
		58 for monitoring bores G1, G4, G5, G6, G7, G22, G23, G27, G31, G32, G37, G38 & G39	**184** for monitoring bores C1, G1, G4, G5, G6, G7, G22, G23, G27, G31, G32, G37, G38 & G39	
		76 for monitoring bore C1		
		220 for monitoring bore C3	**398** for monitoring bore C3	
		150 for monitoring bore G3	**240** for monitoring bore G3	
		67 for monitoring bore G8	**269** for monitoring bore G8	
		110 for monitoring bore G9	**195** for monitoring bore G9	
		90 for monitoring bore G10	**340** for monitoring bore G10	
		116 for monitoring bore G14	**372** for monitoring bore G14	
		150 for monitoring bore G17	**214** for monitoring bore G17	
		93 for monitoring bore G20	**162** for monitoring bore G20	

Quality characteristics	Unit	Limit A (80th percentile)	Limit B (95th percentile)	Monitoring frequency
		118 for monitoring bore G21	**619** for monitoring bore G21	
		240 for monitoring bore G29	**453** for monitoring bore G29	
		190 for monitoring bore G33	**487** for monitoring bore G33	
		260 for monitoring bore G34	**443** for monitoring bore G34	
		688 for monitoring bore G35	**1,000** for monitoring bore G35	
Nitrate	µg/L	**920** for monitoring bore G23	**1,190** for monitoring bore G23	Monthly
		150 for monitoring bores C1, C3, G1, G3, G4, G5, G6, G7, G8, G9, G10, G14, G17, G21, G27, G29, G31, G32, G33, G34, G35, G37, G38 & G39	**320** for monitoring bores C1, C3, G1, G3, G4, G5, G6, G7, G8, G9, G10, G14, G17, G20, G21, G27, G29, G31, G32, G33, G34, G35, G37, G38 & G39	
		266 for monitoring bore G20		
		318 for monitoring bore G2	**392** for monitoring bore G2	
		360 for monitoring bore G22	**429** for monitoring bore G22	
Escherichia coli	cfu/100 ml	**10** for monitoring bores C1, C3, G8, G9, G20, G21 & G39	**36** for monitoring bores C1, C3, G8, G9, G20, G21 & G39	Quarterly
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Total petroleum hydrocarbons C6-C9 [a]	µg/L	Not applicable	**20** for monitoring bores G27, G5, G22, G23, G32, G1 and G8	Monthly
			Not applicable to other monitoring bores	
Total petroleum hydrocarbons C10-C36 [a]	µg/L	Not applicable	**100** for monitoring bores G27, G5, G22, G23, G32, G1 & G8	Monthly
			Not applicable to other monitoring bores	
Benzene [b]	µg/L	**0.5*** for monitoring bores G27, G5, G22, G23 & G32	**10** for monitoring bores G27, G5, G22, G23 & G32	Quarterly
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Ethylbenzene [b]	µg/L	**0.5** for monitoring bores G27, G5, G22, G23 & G32	**3** for monitoring bores G27, G5, G22, G23 & G32	
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Toluene [b]	µg/L	**0.5** for monitoring bores G27, G5, G22, G23 & G32	**25** for monitoring bores G27, G5, G22, G23 & G32	
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Xylenes [b]	µg/L	**1.5** for monitoring bores G27, G5, G22, G23 & G32	**20** for monitoring bores G27, G5, G22, G23 & G32	
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Naphthalene [b]	µg/L	**0.5** for monitoring bores G27, G5, G22, G23 & G32	**14** for monitoring bores G27, G5, G22, G23 & G32	
		Not applicable to other monitoring bores	Not applicable to other monitoring bores	
Major Ions [c]	mg/L	Not applicable – For interpretative purposes only		Quarterly

Table F2 – Groundwater contaminant limits and monitoring frequency notes:

a) Any exceedances above the reporting limit (LOR) will trigger an investigation and analysis of samples to determine hydrocarbon speciation, including for concentrations of benzene, ethylbenzene, toluene, xylenes and naphthalene.
b) Only applies when a total petroleum hydrocarbon limit has been exceeded.
c) Major Ions must include Calcium, Magnesium, Sodium, Potassium, Chloride, Sulfate as SO_4, Bicarbonate alkalinity as $CaCO_3$, Total alkalinity as $CaCO_3$, Hydroxide alkalinity as $CaCO_3$, Carbonate alkalinity as $CaCO_3$.
d) Monitoring requirements at bore G39 to be applied by 6 August 2021.
e) All metals to be measured as dissolved concentrations.

F4	Groundwater quality measured from a monitoring bore specified in Table F1 - Groundwater monitoring locations must not exceed the corresponding Limit A specified in Table F2 – Groundwater quality limits and monitoring frequency on any five consecutive sampling occasions.
F5	Groundwater quality measured from a monitoring bore specified in Table F1 - Groundwater monitoring locations must not exceed the corresponding Limit B specified in Table F2 – Groundwater quality limits and monitoring frequency on any three consecutive sampling occasions.
High ecological value groundwater's	
F6	The environmental authority holder must not cause a change to the existing condition of the mining activities receiving groundwater's that are of high ecological value (HEV) groundwater's.
F7	From 1 March 2021, the environmental authority holder must implement a groundwater quality monitoring program developed and documented by a suitably qualified person that is sufficient to determine if the mining activities have caused a measurable change to groundwater quality.
F8	The groundwater monitoring program required under condition F8 must be developed in accordance with the ANZECC and QWQ Guidelines and must include: a) Establishment of baseline groundwater quality that: i. Includes calculation of the 20th, 50th and 80th percentiles; and ii. Is representative of pre-mining disturbance conditions (i.e. samples taken prior to any activities commencing with the potential to impact groundwater quality) b) Establishment of groundwater quality trigger levels for each quality characteristic listed in Table F2 - Groundwater contaminant limits and monitoring frequency for comparison against baseline groundwater quality that: i. Includes calculation of the 20th, 50th and 80th percentiles based on the most recent two years of monitoring data collected; and ii. Is representative of current groundwater conditions and revised on a rolling and annual basis as further monitoring data becomes available. c) Regular review of groundwater monitoring results and comparison against groundwater quality trigger levels sufficient to establish any potential impact due to the mining activity; d) A documented annual review of the groundwater monitoring program to be completed by 1 December of each year, with a discussion on the results of the monitoring program and consideration of any required changes or improvements to ensure it remains fit for purpose (i.e., complies with condition F8).
Bore construction and maintenance and decommissioning	
F9	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.
Effluent irrigation area	
F10	The irrigation of sewage effluent must not adversely affect groundwater for drinking water supply or cause environmental harm to any groundwater dependant ecosystem.

Groundwater levels	
F11	Any extraction of water from groundwater bores to support mining activities or any change in groundwater levels due to the extraction of bauxite must not cause serious environmental harm.
Groundwater investigation	
F12	By 30 June 2022, the environmental authority holder must complete a groundwater quality investigation which: a) Has been designed and implemented by an appropriately qualified person; b) Includes consideration and analysis of all groundwater quality data from the monitoring bores specified in Table F1 - Groundwater monitoring locations; c) Identifies and considers all factors with the potential to influence groundwater quality, including the mining activities; d) Reviews the adequacy of the groundwater monitoring regime, including Limit A and Limit B specified in Table F2 – Groundwater contaminant limits and monitoring frequency; e) Determines if the mining activities have contributed to or are causing the higher concentrations of total dissolved solids, sulfate and electrical conductivity as measured in monitoring bores G17, G29, G31, G32, G33 and G34 and total dissolved solids and electrical conductivity as measured in monitoring bore G3 compared to the concentrations measured in other monitoring bores; f) Determines if the mining activities have contributed to or are causing the elevated concentrations of aluminum detected in monitoring bores C1, C3, G2, G5, G6, G8, G9, G14, G27, G29, G32, G35 and G37 and Iron detected in monitoring bore G9, since mining activities commenced; g) Includes all information and monitoring data relied upon to conduct the investigation; h) Includes a detailed explanation and justification for all findings of the investigation and the conclusions drawn, along with any assumptions relied upon; i) Where relevant information gaps or uncertainty are identified as pertinent to the accuracy of the investigations findings/conclusions, include recommendations and associated timeframes to address those information gaps and resolve uncertainty; j) Includes a report documenting all requirements of the investigation detailed above, which has been certified by the appropriately qualified person who designed and implemented the investigation.
F13	The environmental authority holder must make a copy of the report required under condition F12 to the administering authority on request.

END OF CONDITIONS FOR SCHEDULE F

Schedule G: Land and Rehabilitation	
Condition number	**Condition**
G1	Land disturbed by mining activities must be rehabilitated in accordance with Table G1 - Rehabilitation requirements – Bauxite Mine and Table G2 - Rehabilitation requirements – Kaolin mine.

Table G1 - Rehabilitation requirements – Bauxite Mine

Mine Domain	Rehabilitation Goal	Rehabilitation Objective/s	Indicators	Completion Criteria
Mine Floor (pits)	Safe	The site is safe for humans and animals, now and in the foreseeable future.	TBA[1]	TBA[1]
	Non-polluting	Surface and groundwater quality remain suitable for long term land use.	TBA[1]	TBA[1]
	Stable Landform	Landform design and construction result in no active or significant erosion	TBA[1]	TBA[1]
	Sustainable Land Use: Native vegetation to maintain the same, or similar pre-disturbance environmental values	Suitable growth medium established	TBA[1]	TBA[1]
		Self-sustaining vegetation and habitat established	TBA[1]	TBA[1]
		Rehabilitated ecosystem is sustainable, with comparable management requirements to similarly used unmined land.	TBA[1]	TBA[1]
		Fauna habitat has developed and fauna species are recolonizing the site	TBA[1]	TBA[1]
Port infrastructure area, haul roads, airstrip and camp	As for Mine Floor (pits), unless a landholder agreement is in place for the infrastructure to remain.	As for Mine Floor (pits), unless a landholder agreement is in place for the infrastructure to remain.	TBA[1]	TBA[1]

Table G1 - Rehabilitation requirements – Bauxite Mine notes:

1. To be provided to the administering authority in accordance with Condition G2.

Table G2 - Rehabilitation requirements – Kaolin Mine

Mine Domain	Rehabilitation Goal	Rehabilitation Objective/s	Indicators	Completion Criteria
Kaolin borrow pits and kaolin exploration pits	Safe	The site is safe for humans and animals, now and in the foreseeable future.	TBA[1]	TBA[1]
	Non-polluting	Surface and groundwater quality remain suitable for long term land use.	TBA[1]	TBA[1]
	Stable Landform	Landform design and construction result in no active or significant erosion	TBA[1]	TBA[1]
	Sustainable Land Use:	Suitable growth medium established	TBA[1]	TBA[1]
		Self-sustaining vegetation	TBA[1]	TBA[1]
	Native vegetation established and regenerating.	Rehabilitated ecosystem is sustainable, with comparable management requirements to similarly used unmined land.	TBA[1]	TBA[1]
Kaolin water storage pits (Claystone pit, water pit and fluvial pit), Sewage treatment plant (including irrigation system)	As for Kaolin borrow pits and kaolin exploration pits, unless a landholder agreement is in place for the infrastructure to remain.	As for Kaolin borrow pits and kaolin exploration pits, unless a landholder agreement is in place for the infrastructure to remain.	TBA[1]	TBA[1]
Overburden piles (Fluvial, Clay stone and Kaolin)	As for Kaolin borrow pits and kaolin exploration pits, unless a landholder agreement is in place for the infrastructure to remain.	As for Kaolin borrow pits and kaolin exploration pits, unless a landholder agreement is in place for the infrastructure to remain.	TBA[1]	TBA[1]

Table G2 - Rehabilitation requirements – Kaolin Mine notes:
1. To be provided to the administering authority in accordance with Condition G2.

G2	By 1 December 2019, rehabilitation requirements must be provided to the administering authority.

G3	The environmental authority holder must utilise vegetation for beneficial uses in the course of carrying out mining activities. Where beneficial uses are exhausted, the holder may burn vegetation cleared provided the activity does not cause environmental harm to the receiving environment or at any commercial place.
Contaminated Land	
G4	The environmental authority holder must not contaminate land by the release of hazardous contaminants.
Buffer zones	
G5	The environmental authority holder must not conduct mining activities within the buffer zones presented in Schedule G – Figure 2 – Buffer zones and as detailed below: (a) within 100m of Lunette Swamp; (b) within 500m of Bigfoot Swamp ; (c) within 100m of Namaleta Creek and Tributary 1; (d) within 100m of supratidal wetlands to the west of the Skardon River South Arm ; and (e) within 500m of wetland complexes to the west and north of the project area. *Note: Locations presented in Schedule K - Maps and Plans.*
Rehabilitation Management Plan and progressive Rehabilitation	
G6	By 1 September 2017, the environmental authority holder must develop, implement and submit to the administering authority a Rehabilitation Management Plan (RMP), that includes: a) schematic representations of the proposed final landform including, landform type, slope, regional ecosystems, drainage designs and any post mining land or infrastructure use agreed with the landowner/holder and the administering authority; b) rehabilitation methods including landform establishment, plant species selection, growing media development and methods of revegetation; c) materials balance including available topsoil and subsoil; d) geotechnical, geochemical and hydrological studies; e) a rehabilitation schedule integrated with the mine plan schedule; f) the rehabilitation goals, objectives, indicators and completion criteria for each agreed post mining land use within each domain and the final vegetation community type; g) a rehabilitation monitoring program, based on best practice industry methods and standards, that must be capable of; i. assessing the condition of rehabilitation sites compared to reference sites; ii. assessing the function of rehabilitation sites compared to reference sites; iii. comparing the progression of rehabilitation site indicators to the targeted completion criteria; and iv. identifying rehabilitation objectives that are not progressing towards the completion criteria. h) management actions for rehabilitation objectives not progressing towards the completion criteria and programs for maintenance of rehabilitation as required to achieve the nominated rehabilitation objective; and i) on-site revegetation trials which test the success of the rehabilitation methods proposed for condition G6(b).
G7	Rehabilitation of mined panels must commence progressively and within 12 months of each panel being completed in accordance with the RMP.
G8	The environmental authority holder must review and update the RMP in the following circumstances: a) the rehabilitation schedule changes with the mine plan schedule; b) based on the outcomes of on-site revegetation trials; and c) based on the outcomes of rehabilitation monitoring programs.
G9	Topsoil and subsoils must be stripped and stored separately and managed to prevent erosion and degradation of soil quality.

Land Use Management Plan (LUMP)	
G10	By 1 September 2017, the environmental authority holder must develop, implement and submit to the administering authority a Land Use Management Plan (LUMP). The LUMP must include: a) buffer zones for sensitive ecological areas; b) landscape connectivity corridors; c) fire management; d) fauna habitat management; and e) weed and pest management.
Acid Sulphate Soils	
G11	Potential Acid Sulphate Soil areas must have field surveys conducted by an appropriately qualified person prior to any disturbance occurring in order to identify if the soils are Acid Sulphate Soils (ASS) and if so must be managed in accordance with condition G12.
G12	An Acid Sulphate Soil Management Plan must be developed in accordance with the latest edition of the Queensland Acid Sulphate Soil Technical Manual and implemented by the environmental authority holder to treat and manage ASS, to prevent the release of contaminants to water and land.
Exploration	
G13	All exploration activities carried out under this environmental authority must comply with each of the standard environmental conditions contained in the most recent version of the Eligibility criteria and standard conditions for exploration and mineral development projects.
Environmental Offsets	
G14	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 G3 - Significant residual impacts to prescribed environmental matters. Note: Protected wildlife habitat has been assessed by the Commonwealth in accordance with Section 15 of the Environmental Offsets Act 2014.

Table G3 - Significant residual impacts to prescribed environmental matters.

Prescribed environmental matter	Location of prescribed environmental matter [1] (MGA94 – Zone 54)	Maximum extent of impact / Maximum extent of impact – stage 1
Regulated Vegetation		
Regulated vegetation (intersecting a wetland) • VMA Act wetlands	RE 3.3.64/3.3.9 (70/30): • 3.3.64: *Baloskion tetraphyllum subsp. meiostachyum* open sedgeland in drainage swamps in dune fields. • 3.3.9: *Lophostemon suaveolens* open forest on streamlines, swamps and alluvial terraces.	1ha, consisting of: • 0.5ha of for Namaleta Creek (south side) • 0.5ha for the Tributary 1 wetland crossing)

Wetlands and watercourses		
Wetland (HES Wetland) • a HES wetland shown on the map of referrable wetlands	RE 3.3.64/3.3.9 (70/30). • 3.3.64: *Baloskion tetraphyllum subsp. meiostachyum* open sedgeland in drainage swamps in dune fields. • 3.3.9: *Lophostemon suaveolens* open forest on streamlines, swamps and alluvial terraces.	0.5ha; however, as the clearing of 0.5ha of vegetation in Tributary 1 already requires offsets for clearing the MSES regulated vegetation (intersecting a wetland), no further offsets are required.
Wetland (HEV Waters) • a wetland in high ecological value waters	RE 3.3.64/3.3.9 (70/30). • 3.3.64: Bal*oskion tetraphyllum subsp. meiostachyum* open sedgeland in drainage swamps in dune fields. • 3.3.9: *Lophostemon suaveolens* open forest on streamlines, swamps and alluvial terraces.	0.5ha;however, as the clearing of 0.5ha of vegetation for the Namaleta Creek Crossing already requires offsets for clearing the MSES regulated vegetation (intersecting a wetland), no further offsets are required.
Marine Plants		
Marine plants • mangroves and saltmarsh communities	RE 3.1.1a / 3.1.3 • *Closed forest of Rhizophora stylosa +/- Bruguiera gymnorhiza* (occurs as outer mangroves) • *Ceriops tagal +/- Avicennia marina* low closed forest (extensive on intertidal areas)	0.03ha

Table G3 - Significant residual impacts to prescribed environmental matters notes:-
1. Locations presented in Schedule K - Maps and Plans, Schedule G – Figure 3 – Matters of State Environmental Significance

G15	Records demonstrating that each impact to a prescribed environmental matter 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.
G16	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 G3 - Significant residual impacts to prescribed environmental matters.

Non-staged impacts	
G17	The notice of election for the environmental offset required by condition G16 must be provided to the administering authority no less than three (3) months before the proposed commencement of the significant residual impacts for which the environmental offset is required.
Sewage effluent	
G18	All sewage effluent released to land must be monitored at the frequency and for the parameters and meet the release limits specified in Table G4 - Contaminant release limits to land.
G19	Sewage effluent may only be released to land in accordance with the conditions of this approval at the location within the nominated area identified in Schedule A - Figure 7 - Skardon River Mine Camp, and treated effluent irrigation area.

Table G4 - Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD_5)	mg/L	20	Maximum	Monthly
Total Suspended Solids	mg/L	30		
Total Nitrogen	mg/L	30		
Total Phosphorus	mg/L	15		
E. coli	Organisms/100mL	1000		
pH	pH units	6.0 – 9.0.	Range	

G20	The application of sewage effluent to land must be carried out in a manner such that: a) vegetation is not damaged; b) there is no surface ponding of treated sewage effluent; and c) there is no run-off of treated sewage effluent.
G21	Sewage effluent used for irrigation must not cause spray drift or over spray to any sensitive or commercial place.
G22	If areas irrigated with sewage effluent are accessible to employees or the general public, prominent signage must be provided advising that sewage effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the sewage effluent.
G23	The daily volume of sewage effluent released to land must be measured and records kept of the volumes of sewage effluent released.
G24	When circumstances prevent the irrigation or beneficial reuse of sewage effluent such as during or following rain events, sewage effluent must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of sewage effluent.
G25	A minimum area of 10,000 m^2 of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.
G26	When weather conditions or soil conditions preclude the release of treated sewage effluent to land, treated sewage effluent must be directed to wet weather storage of at least 800 m^3 or be lawfully removed from the site.

END OF CONDITIONS FOR SCHEDULE G

Schedule H: Coastal Structures	
Condition number	**Condition**
Transfer of Bauxite	
H1	The environmental authority holder must ensure the transfer of bauxite from vehicles and vessels used for transporting minerals and bulk materials leave the mining lease(s) with appropriate load preparation to prevent spillage and/or loss of particulate matter and/or windblown dust during transport.
H2	The transfer of minerals and bulk materials to barges at the Skardon River port must be carried out in a manner that minimises the likelihood of release of minerals or bulk materials to the atmosphere or waters.
H3	The environmental authority holder must capture and pump any contaminated runoff from the barge loading conveyor belt catch tray to the Skardon River port sediment ponds.
Construction of Port of Skardon River Wharf	
H4	By 1 April 2017, an Environmental Management Plan (EMP) for construction of the Port of Skardon River wharf must be developed and implemented by the environmental authority holder. The EMP must include management strategies to minimise impacts on the receiving environment, including but not limited to: (a) environmental commitments - a commitment by senior management to achieve specified and relevant environmental goals; (b) description of works to be undertaken, including the type of equipment to be used and the location of works; (c) environmental issues and potential impacts; (d) the actual and potential release of all contaminants; (e) the potential impact of these sources and contaminants; (f) actions to be taken to minimise the impacts on the receiving environment; (g) monitoring of contaminant releases including contaminant release locations and conducting environmental impact assessments; (h) contingency plans including the practices and procedures to be employed to restore the environment or to mitigate impacts on the receiving environment; and periodic review of environmental performance and continual improvement.
H5	The environmental authority holder must not commence wharf construction unless the holder has submitted to the administering authority design drawings certified by a Registered Professional Engineer of Queensland (RPEQ).
H6	The holder of this environmental authority must construct the wharf in accordance with the certified design drawings referred to in condition H5.
H7	A report from an RPEQ must be submitted to the administering authority within three (3) months of completion of wharf construction certifying that: (a) The wharf construction (including any other associated works) have been constructed in accordance with the drawings referred to in condition H5; (b) The works: (i) are structurally adequate for the anticipated use; (ii) comply with all relevant codes including the administering authority's operational policy.
Pile Driving program	
H8	Pile driving activities must be carried out in a manner that minimises adverse impacts on the surrounding environment, including marine fauna, and must include the following: (a) soft-start approach to disperse of any marine fauna in the vicinity of proposed works; (b) monitoring by an observer prior to commencing and during normal pile driving activities; and

	(c) normal pile driving operations: (i) must not commence if turtles, dugongs or cetaceans are within the exclusion zone specified under the environmental management plan as required in condition H4; (ii) must cease if turtles, dugongs or cetaceans are within the exclusion zone specified under the environmental management plan as required in condition H4.
Light	
H9	Lighting management must be implemented at the port and barging operations to minimise impacts on nesting and hatchling turtles and other sensitive marine fauna.

END OF CONDITIONS FOR SCHEDULE H

Schedule I: Regulated structures	
Condition number	**Condition**
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[1] 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. flood waters from entering the regulated dam from any watercourse or drainage line; and ii. wall failure due to erosion by flood waters arising from any watercourse or drainage line. c) must meet the hydraulic performance criteria stated in Table I 1 - Hydraulic Performance Criteria for Regulated Structures

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.

Table I1 - Hydraulic Performance Criteria for Regulated Structures

Name of Regulated Structure	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
TBA1	TBA[1]	TBA[1]	TBA[1]
TBA[1]	TBA[1]	TBA[1]	TBA[1]
TBA[1]	TBA[1]	TBA[1]	TBA[1]

Table I1 - Hydraulic Performance Criteria for Regulated Structures notes:

1. TBA – to be determined based on the outcome of the final consequence assessment undertaken in accordance with the conditions of this environmental authority.

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	
H11	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 Design Storage Allowance (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 there is a current operational plan for the regulated structure.
I12	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	
I13	Conditions I14 to I15 inclusive only apply to regulated structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
I14	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.

[1] **Certification** of design and construction may be undertaken by different persons.

I15	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.
I16	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.
I17	The holder must record any changes to the MRL in the Register of Regulated structures.
Design storage allowance	
I18	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.
I19	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 DSA volume for the dam (or network of linked containment systems).
I20	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.
I21	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	
I22	Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
I23	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.
I24	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).
I25	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 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 day of receipt of the request.
Transfer arrangements	
I26	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.
Transitional arrangements	
I27	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 12 months of amendment of the authority adopting this schedule.
I28	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the manual specified in Table I2 - 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.
I29	Table I2 - 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.
I30	Certification of the transitional assessment required by conditions I27 and I28 must be provided to the administering authority within 12 months of amendment of the authority adopting this schedule

Table I2 - Transitional hydraulic performance requirements for existing structures

Compliance with criteria	**High**	**Significant**	**Low**
>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.		

END OF CONDITIONS FOR SCHEDULE I

Schedule J : Definitions

Key terms and/or phrases used in this document are defined in this section. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

'Acceptance criteria' mean the measures by which the actions implemented to rehabilitate the land are deemed to be complete (same as completion criteria).

'Administering Authority' is the agency that administers the environmental authority provisions under the *Environmental Protection Act 1994*.

'Adverse impacts' on marine animals includes**:**

- masking social communications used to find mates or identify predators;
- temporary and permanent hearing loss or impairment;
- displacement from preferred habitat;
- disruption of feeding, breeding, nursing, and communication;
- strandings;
- death and serious injury from haemorrhaging and tissue trauma.

'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.

'**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 bauxite mining activities from the same waterway that the current sample has been taken.

'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, or

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.

'**Certified Professional in Erosion and Sediment Control (CPESC)'** means a person who has been certified by the Australasian CPESC committee.

'competent person' means a person with the demonstrated skill and knowledge required to carry out the task to a standard necessary for their reliance upon collected data or protection of the environment.

'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.

'**Contaminants'** means any prescribed water contaminants listed under Schedule 9 of *the Environmental Protection Regulations 2008*.

'**Cubic meter (m^3)**' means the volume of dry gaseous contaminant that occupies 1 cubic meter at a temperature of zero degrees Celsius and an absolute pressure of 101.3 kilopascals.

'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

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

'EC' means electrical conductivity.

'Effluent' treated waste water released from sewage treatment plants.

'Environmental authority holder' means the holder of an environmental authority issued under section 195 that approves an environmentally relevant activity applied for in an application or any others works conducted by another entity on the approved leases.

'Equilibrium' means a state where 'balance' is achieved despite changing variables.

'Existing condition' means the condition of the ecosystem prior to the bauxite mining activities commencing.

'General waste' means:

a) Construction wastes and demolition waste;
b) Solid inert waste;
c) Putrescible wastes and domestic garbage;
d) Green wastes; and
e) General recyclable wastes, consisting of paper, cardboard, recyclable plastics, glass, aluminium, and steel cans.

Note:

- *Paper covered plasterboard must only be received at the approved place if it is generated by*

construction and demolition activities and delivered to the approved place as part of a mixed load of materials;

- *Drums containing any residual regulated wastes are themselves a regulated waste and must not be accepted for disposal at the approved place unless they have been triple rinsed or thoroughly cleaned.*

'Hazardous waste' means a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause environmental harm because of—

(a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or

(b) its physical, chemical or infectious characteristics.

'Hazard categories' 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'.

'**High Ecological Waters (HEV)**', as defined by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* guideline (2000, Volume 1, Page 3.1-10), is an effectively unmodified or other

highly-valued ecosystem, typically (but not always) occurring in national parks, conservation reserves or in remote and/or inaccessible locations. While there are no aquatic ecosystems in Australia and New Zealand that are entirely without some human influence, the ecological integrity of high conservation/ecological value systems is regarded as intact.

'Holder', for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994.*

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

'$L_{A1,adj,15min}$' means the A-weighted sound pressure level, adjusted for tonal character or impulsiveness, that is exceeded for 1% of a 15 minute period when measured using time-weighting 'F'.

'$L_{Aeq,\ adj,\ 15\ mins}$' is the equivalent or energy-averaged, A-weighted sound pressure level, averaged over a time interval of 15 minutes, adjusted for tonal character or impulsiveness.

'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.

'Licensed place' means the mining activities carried out at the mining tenements detailed in this environmental authority.

'm' means metres.

'**m/s'** means meters per second

'Maximum' means that the measured value of the quality characteristic or contaminant must not be greater than the release limit stated.

'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.

'**Median'** means that the measured values of the quality characteristic must not be greater than the rerelease limit for any more than five out of ten consecutive samples where the time interval between the taking of each consecutive sample is not less than one (1) day.

'mg/L' means milligrams per litre.

'Minimise' is to reduce to the smallest possible amount or degree.

'**Minimum'** means that the measured value of the quality characteristic or contaminant must not be less than the release limit stated.

'**minimum data requirements'** means the reference data requirements outlined in Table 4.4.2 of the *Queensland Water Quality Guidelines 2009*.

'Natural flow' is the flow of water within receiving waters caused as a result of rainfall and groundwater in their natural state, rather than as result of human activity.

'Noxious' means harmful or injurious to health or physical wellbeing, other than trivial harm.

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

'**Progressive Rehabilitation'** means Rehabilitation (defined below) undertaken progressively or a staged approach to Rehabilitation as mining operations are ongoing.

'Range' means that the measured value of the quality characteristic or contaminant must not be greater than the higher release limit stated nor lower than the lower release limit stated.

'Receiving environment' in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

a) a watercourse or surface waters

b) groundwater

c) an area of land that is not specified in **Schedule A – Table A1** (**Authorised Mining Activities and Locations**) of this environmental authority.

'Receiving Waters' means the waters of the receiving environment.

'Rehabilitation' the process of reshaping and revegetating land to restore it to a Stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.

'Revegetation' is the re-establishment of vegetation[2] of a species and density of cover similar to surrounding undisturbed areas or the landform that existed before mining activities on soil surfaces associated with the construction or Rehabilitation of a Watercourse diversion.

'RL' means reduced level, relative to Australian Height Datum.

[2] Not including a species declared under the Land Protection (Pest and Stock Route Management) Regulation 2003 as a category class 1 pest, category class 2 pest or category class 3 pest.

'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 and 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.

'Stable' means geotechnical stability of the rehabilitated landform where instability related to the excessive settlement and subsidence caused by consolidation/settlement of the wastes deposited, and sliding/slumping instability has ceased.

'Suitably qualified and experienced person' means a person who is a Registered Professional Engineer of Queensland under the provisions of the *Professional Engineers Act 2002*, who has an appropriate level of expertise in the structures, geomechanics, hydrology, hydraulics and environmental impact of Watercourse diversions.

An *appropriate level of expertise* includes:

- demonstrable competency, experience and expertise in:
    - investigation, design or construction of watercourses diversions
    - operation and maintenance of Watercourse diversions
    - geomechanics with particular emphasis on channel equilibrium, geology and geochemistry

  - hydrology with particular reference to flooding, estimation of extreme storms, water management or meteorology.
  - hydraulics with particular reference to sediment transport and deposition and erosion control
  - hydrogeology with particular reference to seepage and groundwater.
  - solute transport processes and monitoring thereof, or
- sufficient knowledge and experience to certify that where the Suitably qualified and experienced person has relied on advice and information provided by other persons with relevant expertise*:
  - they consider it reasonable to rely on that advice and information.
  - the expert providing the advice and information has knowledge, competency, suitable experience and demonstrated expertise in the matters related to Watercourse diversions.

Persons with relevant expertise include:

- Geomorphologist: person who has demonstrated competency and relevant experience in stream geomorphology and Watercourse diversions.
- Geotechnical Expert: person who has demonstrated competency and relevant experience in geotechnical assessment of soil characteristics suitable for Watercourse diversions.
- Vegetation Expert: person who has demonstrated competency and relevant experience in the identification, role and function of vegetation with watercourses and adjoining floodplains, and has demonstrated competency and relevant experience in Revegetation of Watercourse diversions and adjoining floodplains. .
- Groundwater Expert: person who has demonstrated competency and relevant experience in groundwater systems.
- Surface Water Expert: person who has demonstrated competency and relevant experience in hydrology.
- Engineer: person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Persons Act 2002* or has similar qualifications under a respected professional registration association, and has demonstrated competency and relevant experience in design and construction of Watercourse diversions.
- Soils Expert: person who has demonstrated competency and relevant experience in soil classification including the physical, chemical and hydrologic analysis of soil.

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

'µS/cm' means micro siemens per centimetre.

'Water' is defined under Schedule 4 of the *Water Act 2000.*

'Watercourse' has the same meaning given in the *Water Act 2000*.

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

'Waters' includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), storm water channel, storm water drain, groundwater and any part thereof.

'**Wet season**' means the period commencing on1 November each year and ending on 30 April of the following year.

'**80th percentile'** means that not more than two (2) of the measured values of the quality characteristic are to exceed the stated release limits for any ten (10) consecutive samples.

Regulated structure definitions

'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.

'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) 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.

'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.

'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'.

'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)*.

'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.

'Emergency action plan' means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to Minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

'Existing structure' means a structure that prior to 21 December 2016 meets any or both of the following, a structure:

(a) with a design that is in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (Version 5.00, March 2016) and that is considerably in progress;

(b) that is under considerable construction or that is constructed.

'Flowable substance' means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a Flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.

'Growing media development' means the development of soil quality, infiltration, texture, structure and stability to support a targeted vegetation type.

'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)*.

'landform establishment' means the establishment of a landscapes gradient, drainage, slope and aspect.

'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.

'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.

'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.

'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/2016/1933)*;

(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/2016/1933)* 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.

'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.

'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.

'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.

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

Biodiversity Offset definitions

'**environmental offset'** has the meaning in section 7 of the *Environmental Offsets Act 2014*.

'maximum extent of impact' means the total, cumulative, residual extent and duration of impact to a prescribed environmental matter that will occur over a project's life after all reasonable avoidance and reasonable on-site mitigation measures have been, or will be, undertaken.

'prescribed environmental matters' has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significant listed in schedule 2 of the *Environmental Offsets Regulation 2014*.

'significant residual impact/s' has the meaning in section 8 *Environmental Offsets Act 2014*.

END OF DEFINTIONS FOR SCHEDULE J

Schedule K: Maps and Plans

Schedule A - General

- Schedule A - Figure 1 - Skardon River Project Infrastructure layout —Mine Area
- Schedule A - Figure 2 - Skardon River authorised Kaolin mine footprint
- Schedule A - Figure 3 - Skardon River Port Infrastructure area
- Schedule A - Figure 4 - Skardon River Wharf Infrastructure area
- Schedule A - Figure 5 - Landfill, Bioremediation Pad and Groundwater monitoring bores
- Schedule A - Figure 6 - Skardon River Mine Camp, sewage treatment plant, effluent irrigation, and storage areas

Schedule E - Water

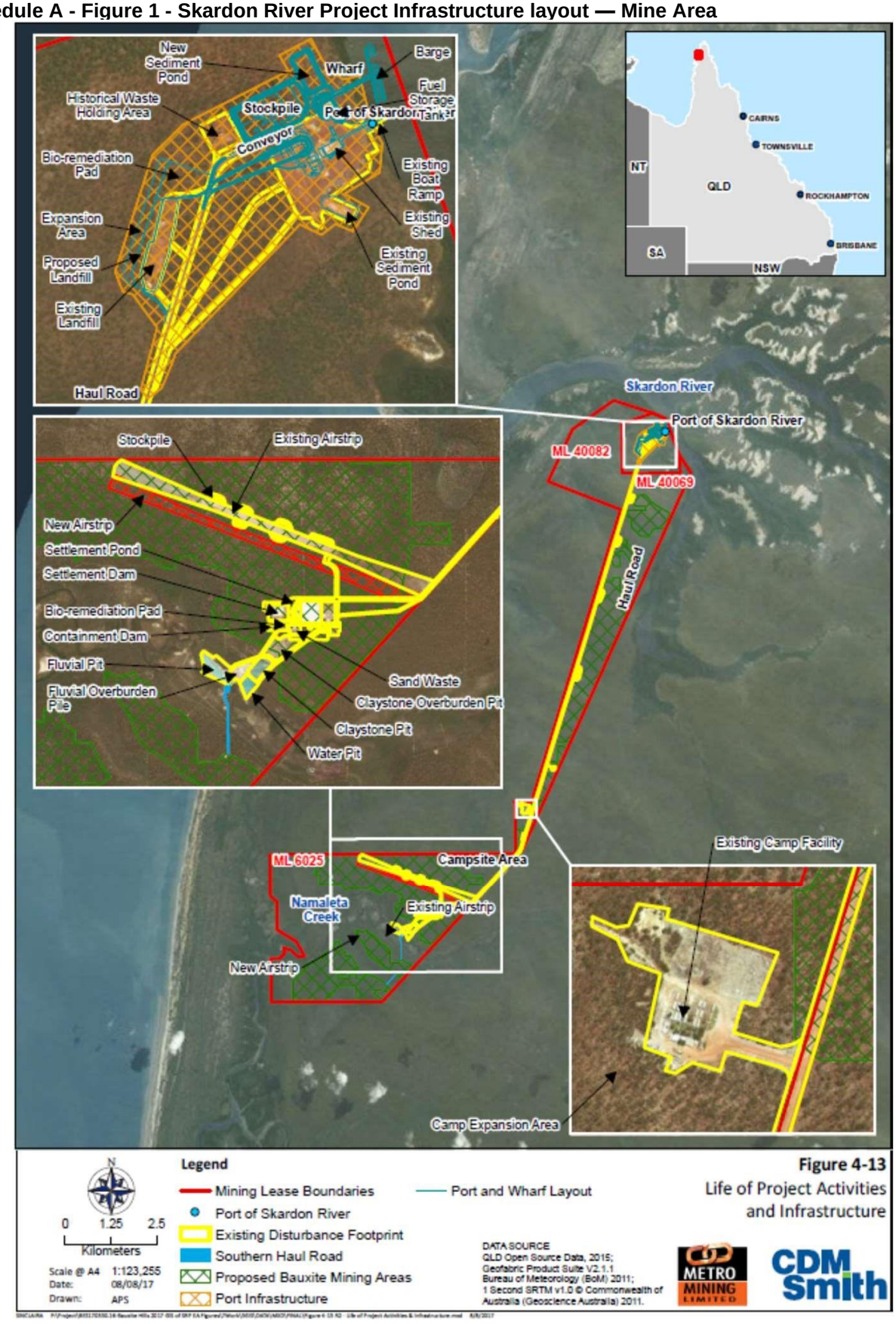
Schedule E – Figure 1a – Surface water monitoring locations **Schedule F - Groundwater**

- Schedule F – Figure 1 – Namaleta Creek Cluster
- Schedule F – Figure 2 – Camp Cluster
- Schedule F – Figure 3 – BH6 Mining Area Cluster
- Schedule F – Figure 4 – Port Area Cluster and G27
- Schedule F – Figure 5 – BH1 Mining Area Cluster and G31

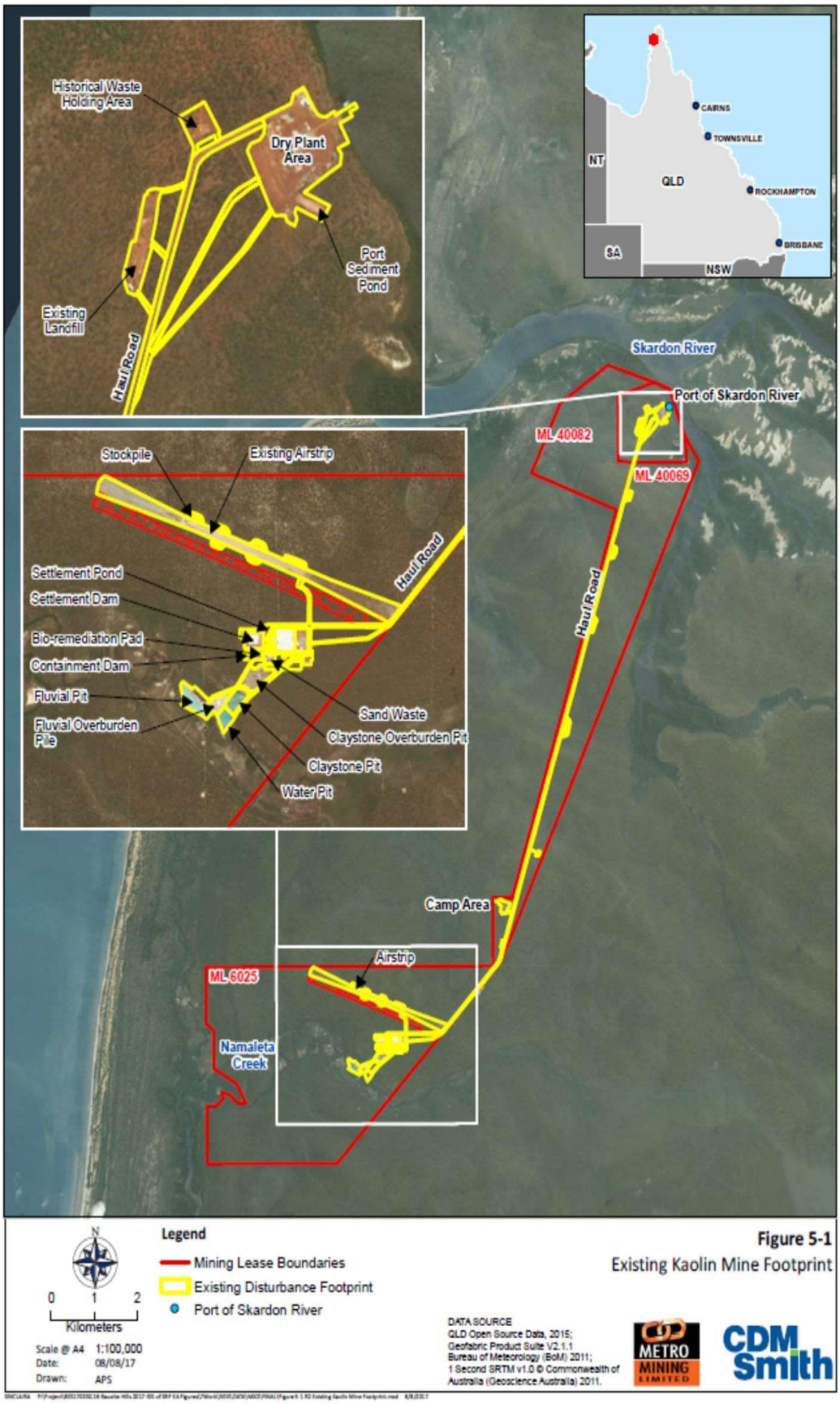
Schedule G - Land

- Schedule G – Figure 1 - Groundwater monitoring bores
- Schedule G – Figure 2 – Buffer Zones
- Schedule G – Figure 3 – Matters of State Environmental Significance

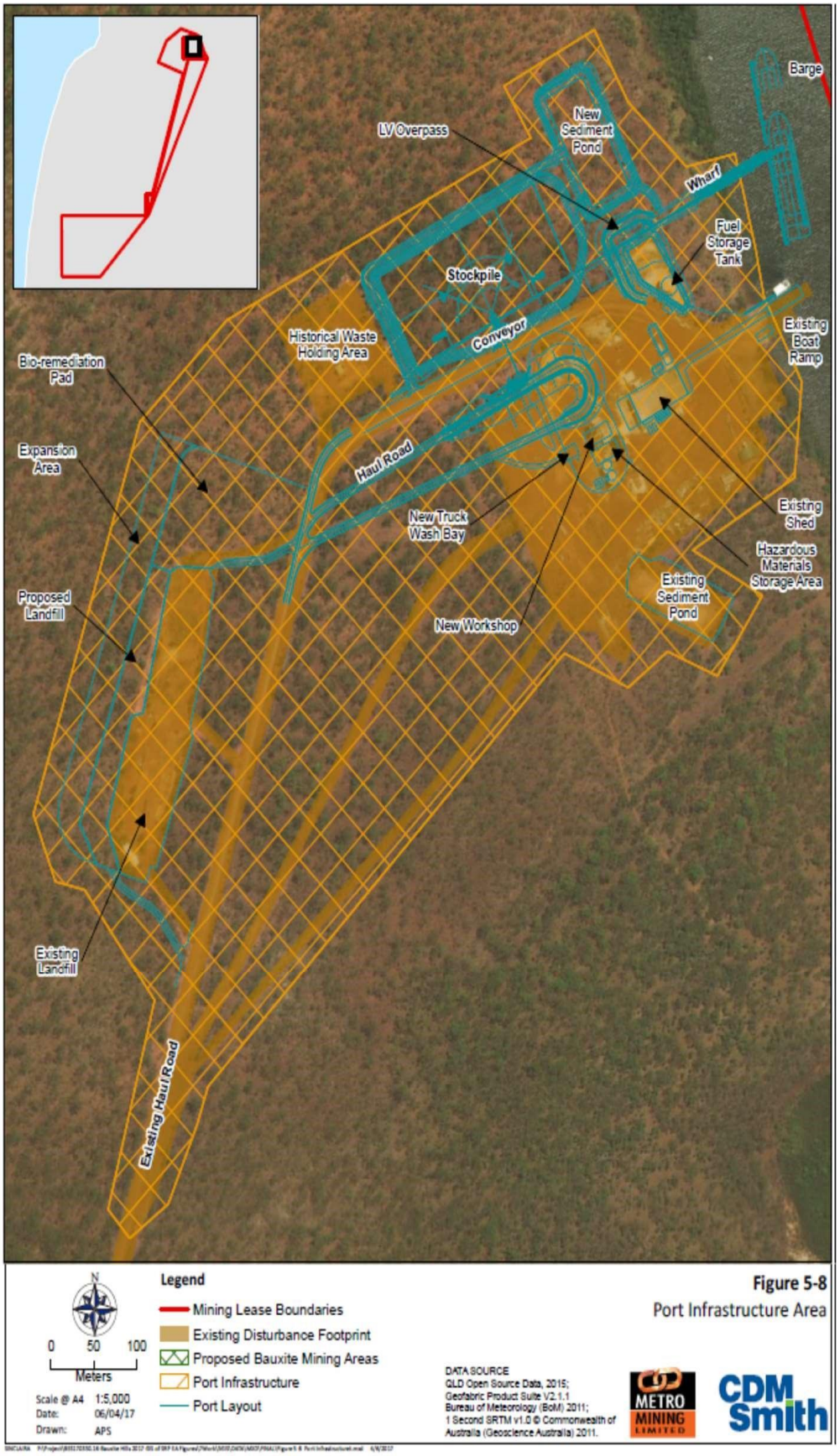
Schedule A - Figure 1 - Skardon River Project Infrastructure layout — Mine Area



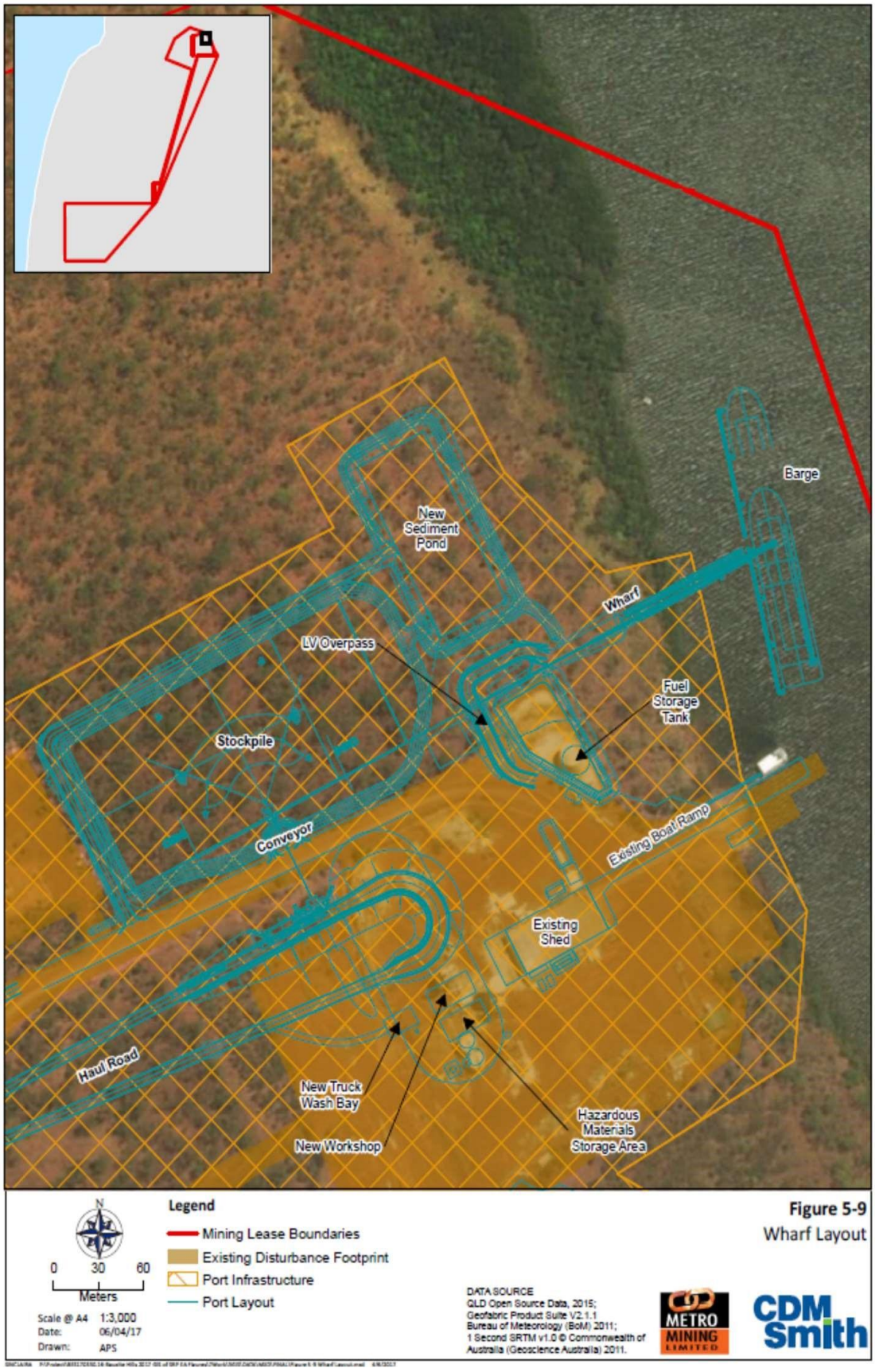
Schedule A - Figure 2 - Skardon River authorised Kaolin mine footprint



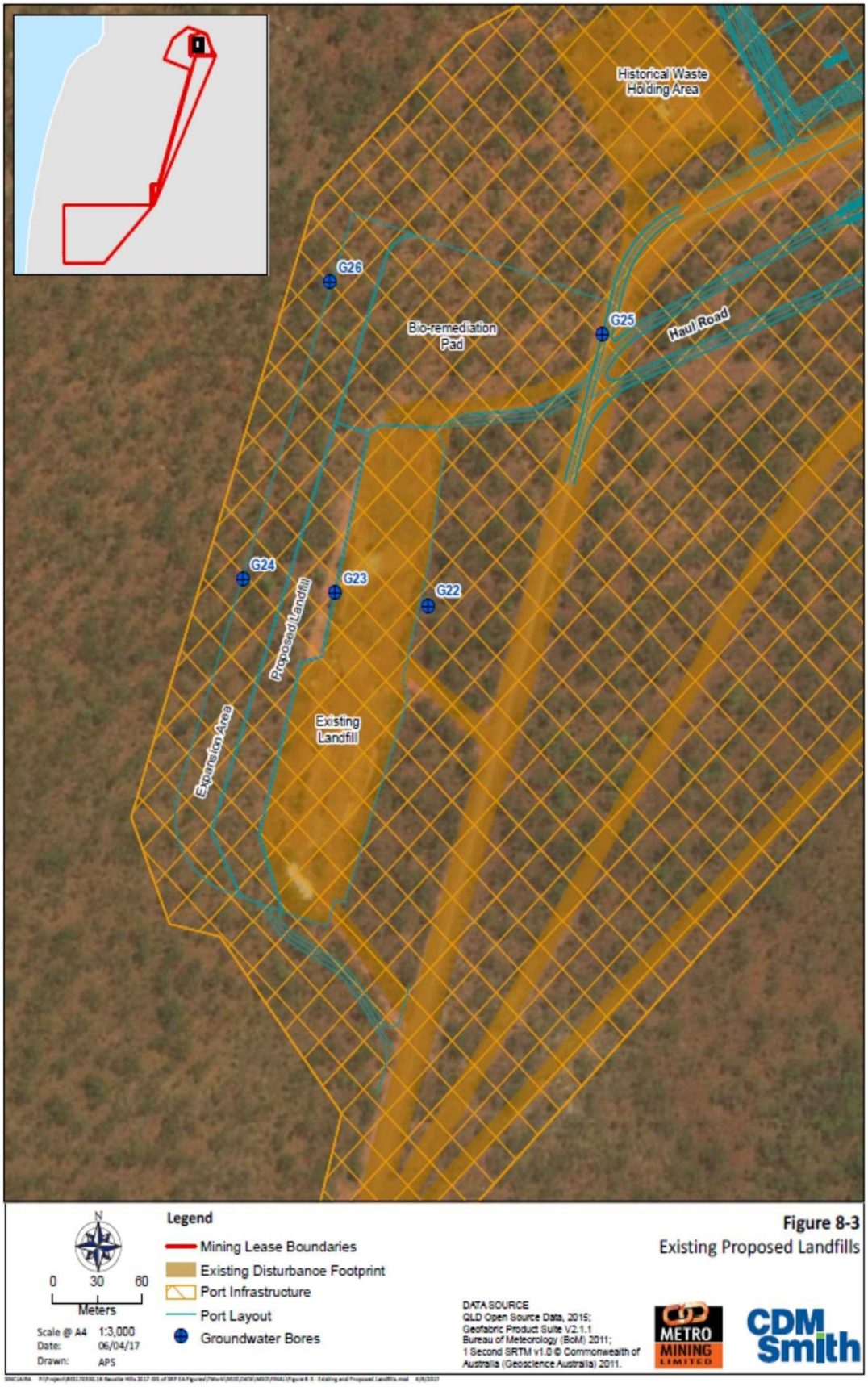
Schedule A - Figure 3 - Skardon River Port Infrastructure area



Schedule A - Figure 4 - Skardon River Wharf Infrastructure area

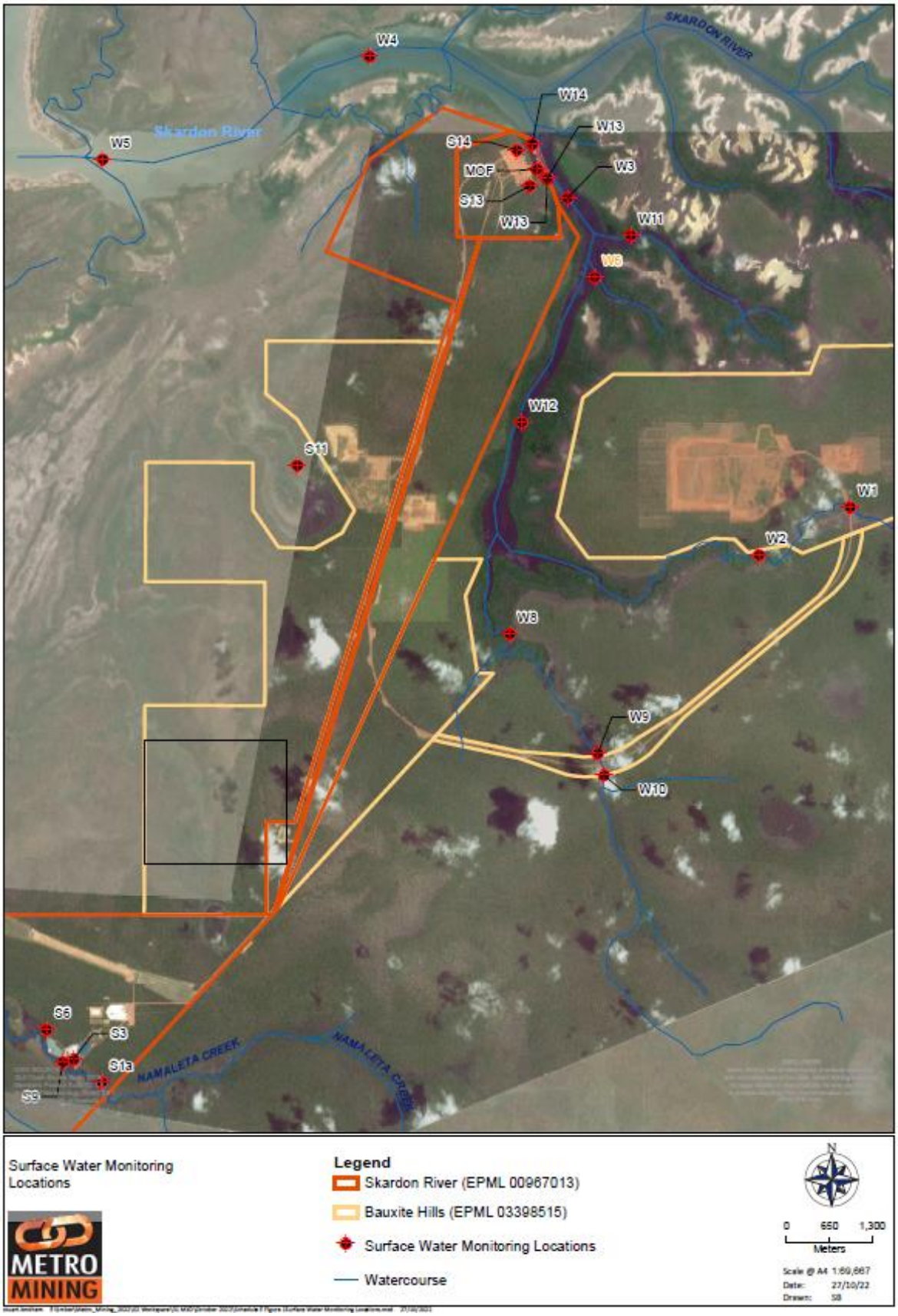


Schedule A - Figure 5 - Landfill, Bioremediation Pad and Groundwater monitoring bores

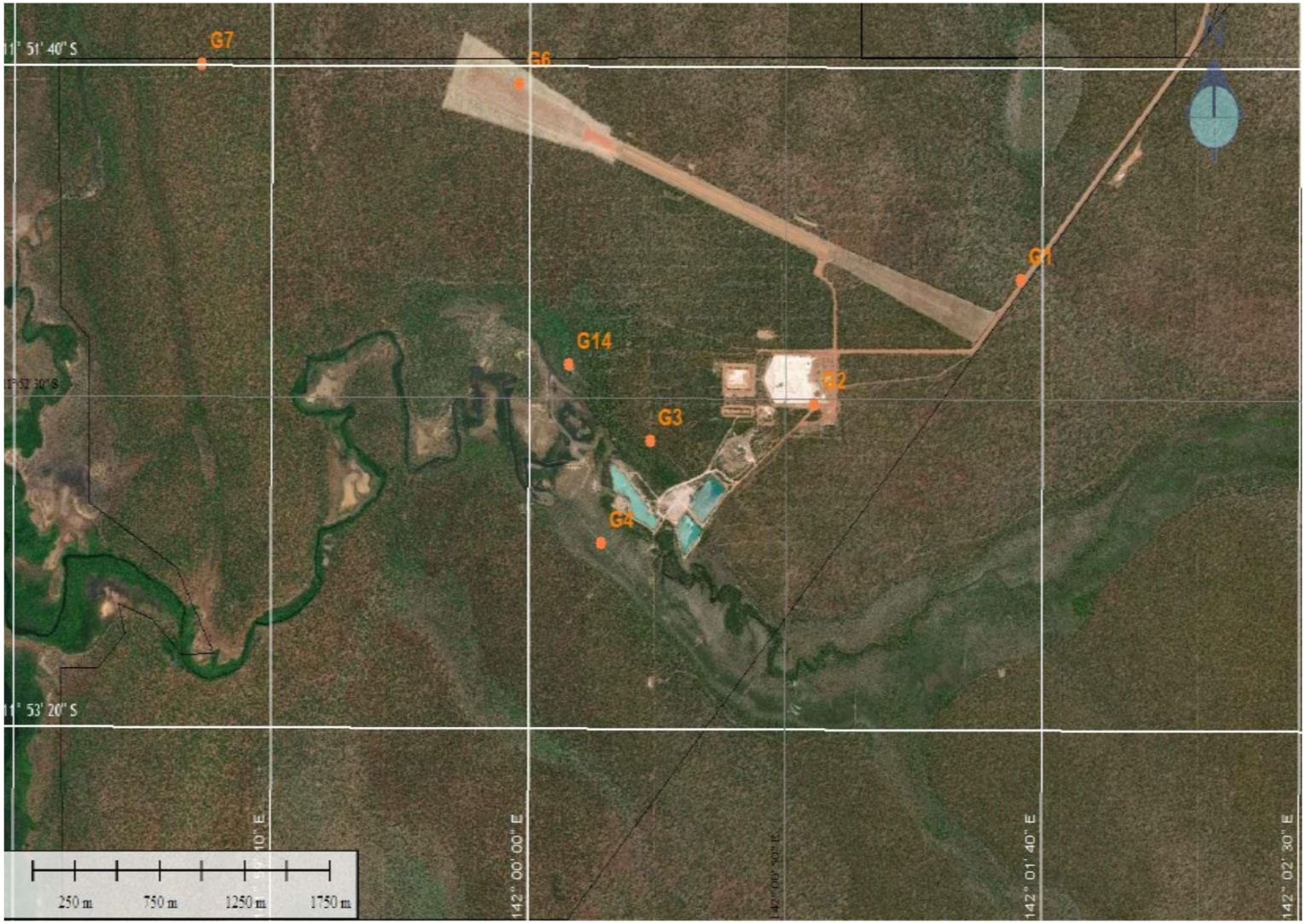


Schedule A - Figure 6 - Skardon River Mine Camp, sewage treatment plant, effluent irrigation, and storage areas

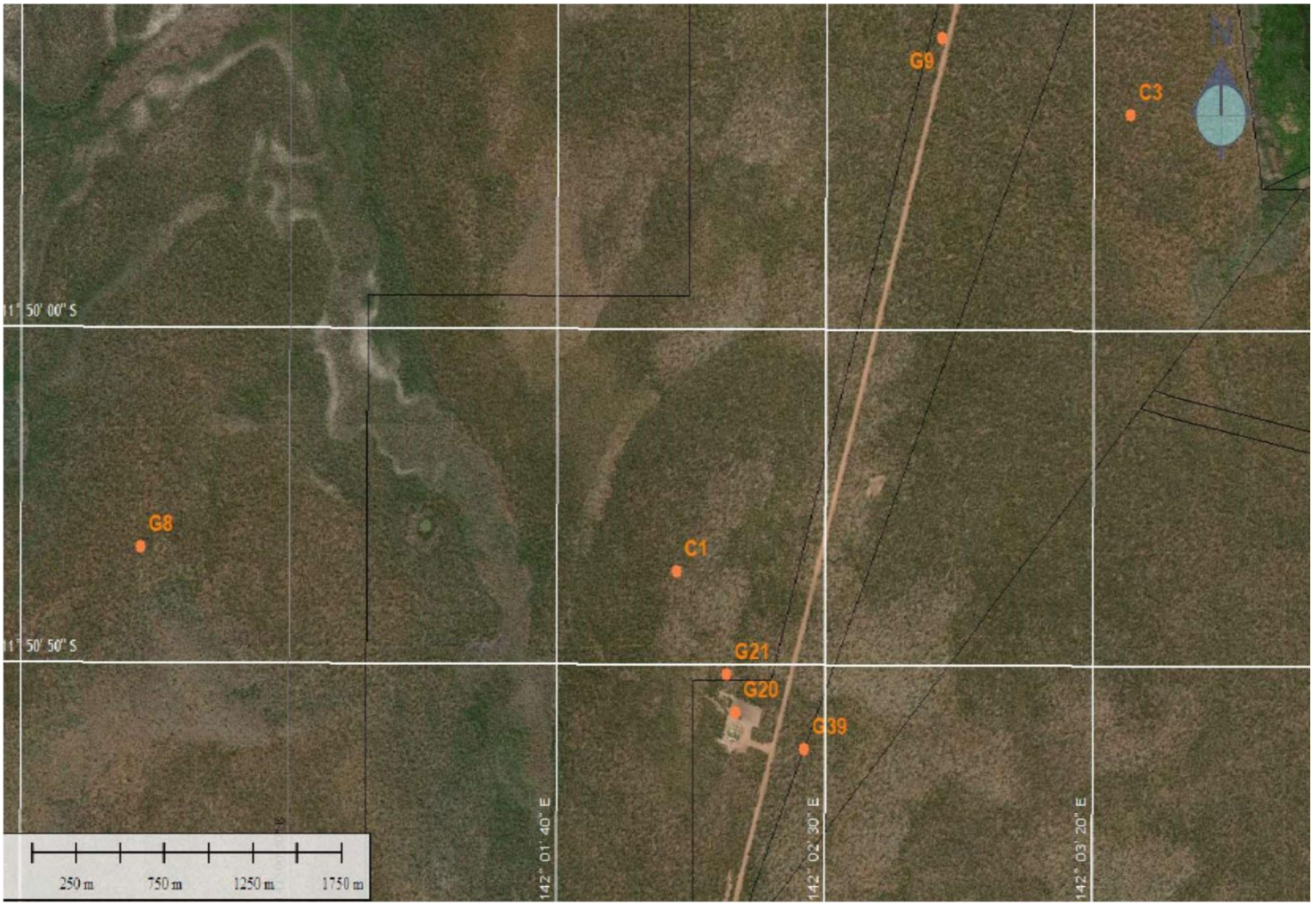
Schedule E – Figure 1– Surface water monitoring and Contaminant release locations



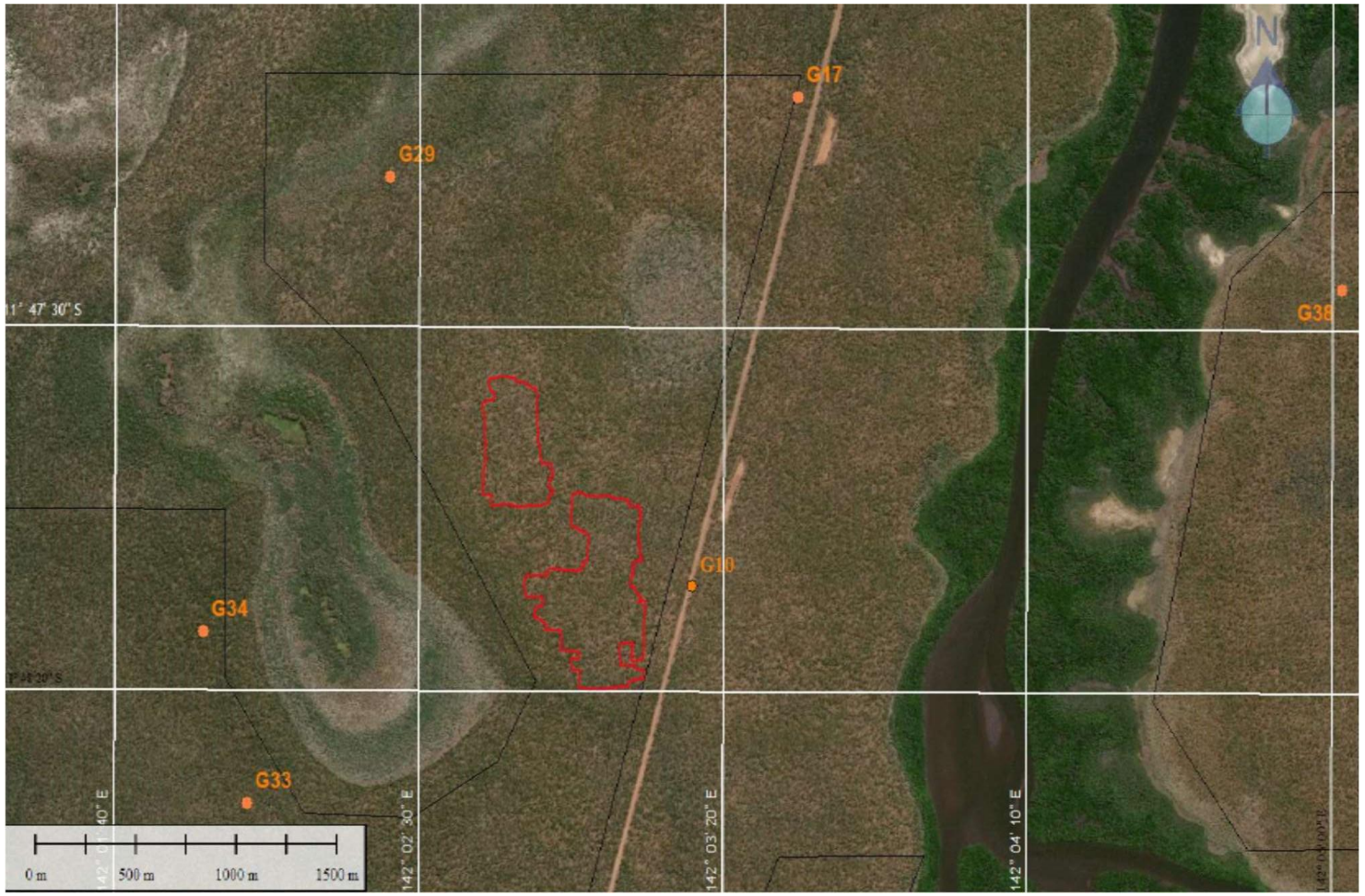
Schedule F – Figure 1 – Namaleta Creek Cluster



Schedule F – Figure 2 – Camp Cluster

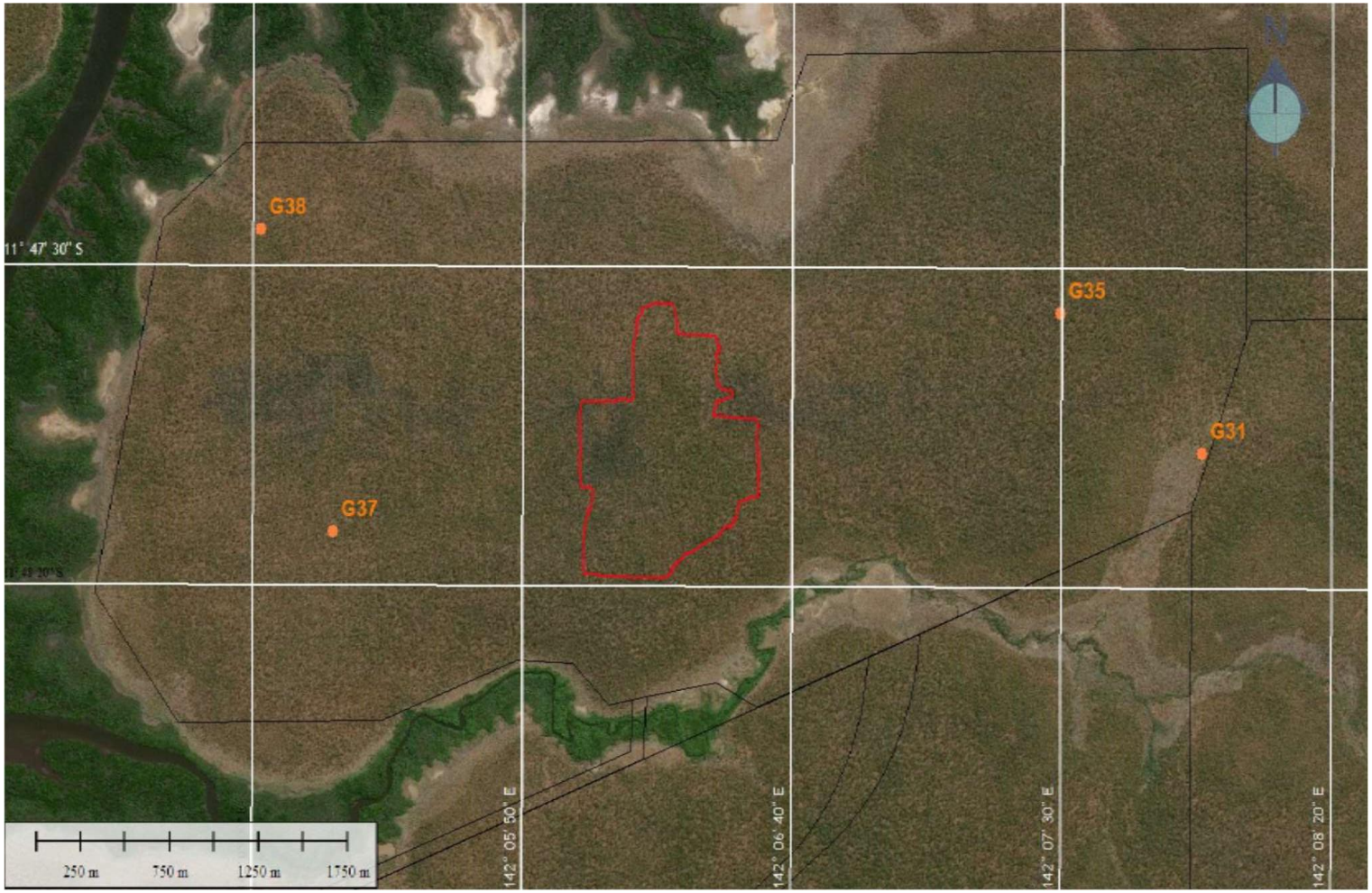


Schedule F – Figure 3 – BH6 Mining Area Cluster



Schedule F – Figure 4 – Port Area Cluster and G27

Schedule F – Figure 5 – BH1 Mining Area Cluster and G31



Schedule G – Figure 1 - Treated effluent irrigation area and groundwater monitoring bores

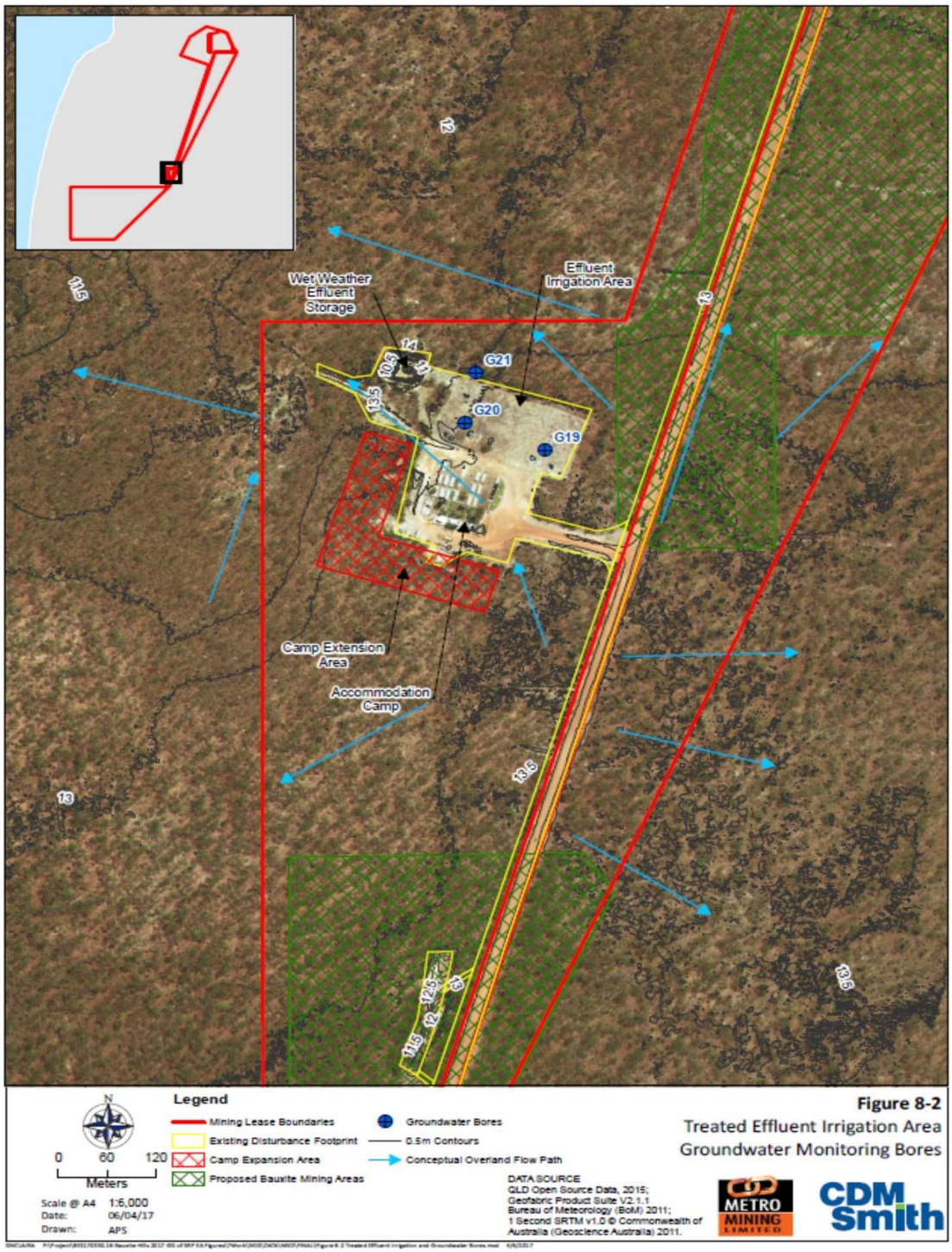


Figure 8-2
Treated Effluent Irrigation Area
Groundwater Monitoring Bores

Schedule G – Figure 2 - Buffer zones

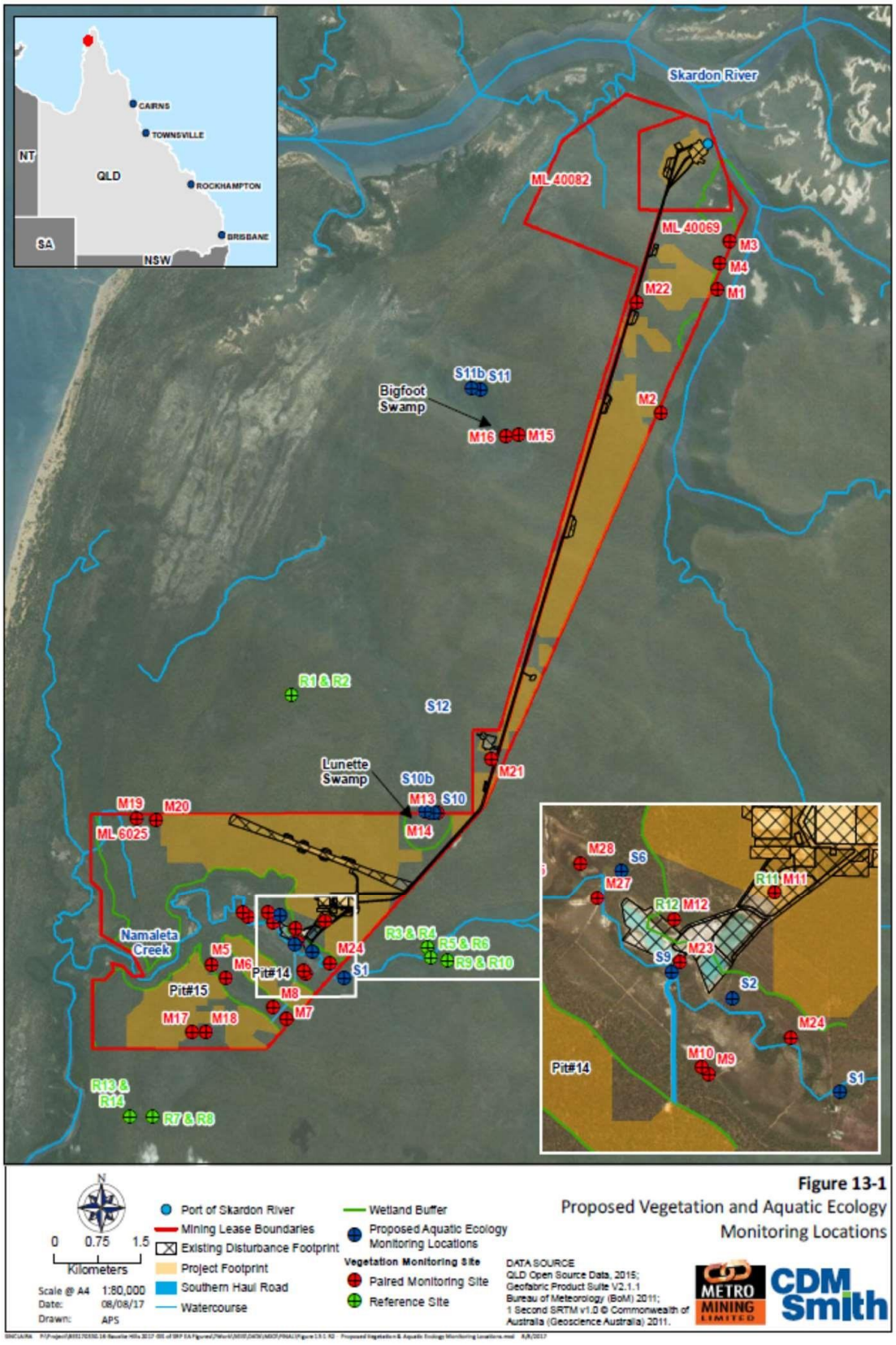
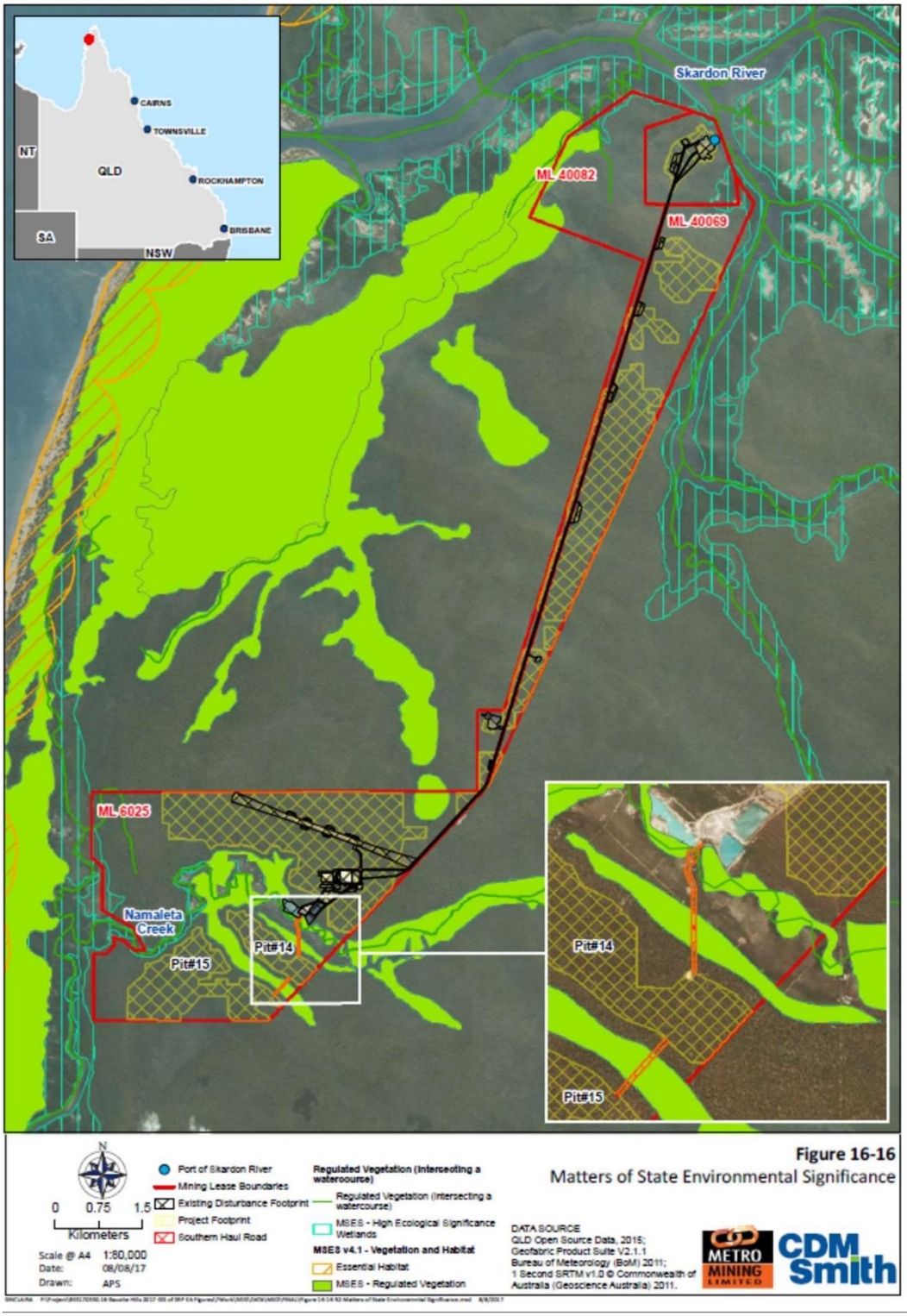


Figure 13-1
Proposed Vegetation and Aquatic Ecology Monitoring Locations

Schedule G – Figure 3 – Matters of State Environmental Significance



END OF MAPS AND PLANS FOR SCHEDULE K

END OF ENVIRONMENTAL AUTHORITY