Government of Western Australia
Department of Water and Environmental Regulation

Amended Licence

Licence number	L5319/1988/12
Licence holder	Tronox Management Pty Ltd
ACN	009 343 364
Registered business address	Lot 22 Mason Road KWINANA BEACH WA 6167
DWER file number	DER2015/000793
Duration	01/10/2012 to 30/09/2027
Date of amendment	Monday, 23 December 2019
Premises details	Cooljarloo Mineral Sands Mine 12051 Brand Highway COOLJARLOO WA 6507 Legal description – Mining tenement M286SA

Prescribed Premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed	810,000 tonnes of ore per annual period
Assessed activities directly related to the above categories	
Disposal of mineral processing residues (generated from downstream processing and refining of the mined ore) into the Mineral Residue Facility	500,000 tonnes of mineral residue per annual period

This amendment is granted to the licence holder, subject to the attached conditions, on 23/12/2019, by:

Tim Gentle Digitally signed by Tim Gentle Date: 2019.12.23 14:57:56 +08'00'

Tim Gentle
MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
19/09/2001	L5319/5	Licence renewed – issued to Tiwest Pty Ltd
16/07/2002	L5319/5	Licence amendment – inclusion of conditions related to the construction of solar drying dams to negate the need for further works approvals
29/09/2002	L5319/6	Licence renewed – global changes only
30/09/2003	L5319/7	Licence renewed – inclusion of conditions related to analysis of mineral processing residues
29/09/2004	L5319/8	Licence renewed – issued for 2 years
22/09/2005	L5319/8	Licence amendment following the Welker Review[1]. Changes to annual reporting conditions, notification requirements, dust conditions, MRF requirements
07/09/2006	L5319/9	Licence renewed – global changes only
21/08/2008	L5319/1989/10	Licence renewed – global changes only
29/10/2009	L5319/1989/10	Licence amendment to permit disposal of inert wastes at the MRF
24/09/2010	L5319/1989/11	Licence renewed – global changes only
27/09/2012	L5319/1989/12	Licence renewed. Occupier changed to Tronox Management Pty Ltd
21/03/2013	W5326/2012/1	Works approval for Pit 7 extension #2 at the MRF
29/04/2016	L5319/1989/12	Licence expiry extended to 2027 via administrative notice
23/12/2019	L5319/1989/12	Licence reviewed. Incorporates approval for staged construction of the MRF extension (Cell 8)

Interpretation

In this licence:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean ‘including but not limited to’, and similar, as appropriate;
(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
(c) where tables are used in a condition, each row in a table constitutes a separate condition;
(d) any reference to an Australian or other standard, guideline, or code of practice means the version of the standard, guideline, or code of practice in force at the time of granting of this licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the licence;
(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
(f) unless specified otherwise, all definitions are in accordance with the EP Act.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Emissions

1. The licence holder must not cause any emissions from the primary activities on the Premises, except for specified emissions and general emissions described in Table 1 subject to the corresponding exclusions, limitations or requirements listed in Table 1.

Table 1: Authorised emissions

Emission type	Exclusions/limitations/requirements
Specified emissions	
Disposal of mine tailings (waste sand and clay)	Only to the dredge pond, mine void(s) or solar drying dams(s) located on the Premises (excludes rehabilitation of non-mining areas)
Disposal of mineral processing residues	Only to the MRF area (Pit 7 & Pit 7 Ext) and subject to compliance with conditions 19 - 28 inclusive
Indirect emissions to groundwater from seepage	Only from the dredge pond and solar drying dams specified in Table 4
General emissions (excluding specified emissions)	
• Emissions which arise from undertaking the prescribed activities as specified at the front of this licence • Emissions which arise from undertaking the Construction works – MRF Extension (Cell 8)	Emissions excluded from general emissions are: • Unreasonable emissions; or • Emissions that result in, or are likely to result in, pollution, material environmental harm or serious environmental harm; or • Discharges of waste in circumstances likely to cause pollution; or • Emissions that result, or are likely to result in, the discharge or abandonment of waste in water to which the public has access; or • Emissions or discharges which do not comply with an approved policy, a prescribed standard or the conditions in an implementation agreement or decision; or • Emissions or discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004*.

Construction works – MRF extension (Cell 8)

2. The licence holder must construct the infrastructure specified in Table 2, in accordance with the corresponding design and construction requirements set out in Table 2.

Table 2: MRF Extension (Cell 8) – Construction works requirements

Infrastructure	Requirements (design and construction)
Base (floor) liner	(i) Must be constructed in accordance with engineering design drawings shown in Figures 3 & 4 of Schedule 2 of this licence; (ii) Surface level must be at least 3 m above the highest seasonal water table; (iii) Cell liner must be keyed into the existing Pit 7 Ext 1&2 floor lining; (iv) Cell floor must be graded towards the lowest point; (v) Cell liner must comprise a minimum 300 mm clay overburden or slimes

Infrastructure	Requirements (design and construction)
	meeting the following properties: (a) clay (DDR of >95%) soil with a permeability of at least $1x10^{-9}$ m/s; (b) percentage of fines passing 75-micron sieve: greater than 25%; (c) liquid limit: less than 70; (d) plasticity index: greater than 15; and (e) Emerson class number: 5 to 6; (vi) Cell liner must be placed in two layers (minimum 150 mm each layer), compacted and rolled over the entire cell floor and wall embankments to a minimum of 95% Standard MDD in accordance with AS 1289.5.1.1; (vii) All earthworks must be inspected, approved and reported in accordance with Level 1 Inspection and Geotechnical Testing, as per AS 3798; (viii) Construction quality assurance of the constructed liner must be completed for: (a) Level 1 Inspection and Geotechnical Testing, as per AS 3798-2007; and (b) Compliance with the specifications for cell liner material, compaction and density listed above;
Outer embankments	(i) Maximum crest level ≤ 3.0 metres (above the lined floor); (ii) Must be lined and compacted to the same specifications as the floor liner; (iii) Width along the top of each embankment must be at least 6.0 m wide;
Residue embankments	(i) Maximum slope angle 1:14 (V:H) in a northwesterly direction and 30° at the southern side;
Emergency spillway	(i) Must be installed at least 0.3 m below the embankment crest at the lowest point.

3. The licence holder must provide to the CEO a Construction Compliance and Quality Assurance Validation Report within 28 days of the completion of construction of each of Cell 8 Stage 1, and Cell 8 Stage 2, respectively.

4. The report required by condition 3 must include as a minimum, the following:

(a) certification by a licensed professional engineer whether each item of the infrastructure or component of thereof, as specified in Table 2, has been constructed with no material defects and to the requirements specified in Table 2;
(b) measures proposed to rectify any material defects identified or departures from the requirements specified in Table 2, together with timescales for implementing the proposed measures;
(c) copies of results of surveys and drawings of the 'as constructed' cell, inspections, monitoring and testing results for the liner material (prior to placement) and post-construction compaction and density;
(d) a summary that demonstrates compliance with Level 1 construction and quality assurance processes; and
(e) be signed by a person authorised to represent the licence holder and contains the printed name and position of that person within the company.

Construction works – other

5. The licence holder must ensure that where infrastructure listed in Table 3 is required to be constructed, that it is done so in a manner that meets or exceeds the corresponding requirements specified in Table 3.

6. The licence holder must not depart from the requirements specified in Table 3 except:

(a) where such departure does not increase risks to public health, public amenity or the environment; and
(b) all other conditions in this licence are still satisfied.

Table 3: Works infrastructure requirements

Infrastructure	Requirements (design and construction)
Solar drying dams	• Must be constructed within previous mine voids or on-mine-path; • Dam floors must be constructed with a minimum slope of 1:300; • Embankment walls must be constructed with compacted overburden or clayey sand (containing a fines content of <30%) with angle of repose for the outer dam wall being at least 1:3 (V:H); • Embankment wall height must not exceed 5 metres.

Infrastructure and equipment

7. The licence holder must ensure that the site infrastructure and equipment listed in Table 4 is maintained and operated in accordance with the corresponding operational requirement set out in Table 4.

Table 4: Infrastructure and equipment controls table

	Site infrastructure and equipment	Description and operational requirement
	Mining infrastructure	
1	Suction-cutter dredges	• Cooljarloo I (6,000 t/hr capacity); • Pelican (2,000 t/hr capacity); • Hydrocarbon spill kits must be located on each dredge at all times;
2	Wet concentrator plant	• Floating concentrator (4,200 t/hr capacity);
3	Process water pond(s)	• None specified;
4	Return water pond	
5	Pipelines carrying HMC	• Equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; • Pipelines to be placed within service corridors;
6	HMC stockpile pad	• Constructed with compacted overburden or similar; • Drainage designed to divert surface water runoff to a collection sump via a sediment control structure;
	Tailings infrastructure	
1	Solar drying dams	• Temporary dams to allow the drying of clay fines; • Top of embankment (total) freeboard of at least 500 mm must be maintained at all times; • Decant weir boxes and overflow drains to the dredge pond or return water pond;
2	Pipelines carrying clay fines and return water	• Equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; • Pipelines to be placed within service corridors;
	Waste containment infrastructure	
1	Mineral Residue Facility (MRF)	• A large tailings storage facility located within Mullering Farm for disposal of mineral processing residues; • Disposal must only take place within “Pit 7” or “Pit 7 Ext”, as shown in the MRF map in Schedule 1; • Surface water runoff and leachate to be contained within the MRF perimeter embankment area; • Operation subject to compliance with conditions 19 - 28

		inclusive;
	Rehabilitation	
1	Overburden dumps/topsoil stockpiles	• None specified.

8. The licence holder must undertake inspections of the scope and type listed in Table 5, and at the corresponding frequency set out in Table 5.

Table 5: Inspection of infrastructure requirements

Scope of inspection	Type of inspection	Frequency of inspection
Pipelines carrying HMC and tailings	Visual integrity and leak assessment	Daily whilst operating; Monthly if not operating
Return water pipelines		
Solar drying dams		
	Freeboard capacity	
Liquid chemicals/hydrocarbon storage areas on the dredges and wet concentrator	Actual or identifiable hydrocarbon losses	

9. Where any inspection undertaken in accordance with condition 8 identifies the required level of environmental protection is not being maintained, the licence holder must:

(a) take corrective action to mitigate adverse environmental consequences as soon as practicable; and
(b) maintain a written log of all inspections undertaken, with each inspection signed off by the person who conducted the inspection.

Dredge Pond – operation

10. The licence holder must not cause or allow water within the dredge pond to enter, overflow, or be discharged, to Mullering Brook.

11. The licence holder must take remedial actions to ensure water quality within the dredge pond, as measured in accordance with condition 13, is maintained at a pH ≥4.5, with an average monthly pH of ≥5.0 that is based on fortnightly measurements.

12. The remedial actions must include at least one of the following:

(a) dosing with lime slurry (neutralisation);
(b) de-sliming the dredge pond;
(c) reducing the size of the dredge pond; or
(d) sub-dividing the dredge pond into sections.

Dredge Pond – monitoring and reporting

13. The licence holder must undertake monitoring of the dredge pond for the parameters listed in Table 6, in the corresponding units, over the corresponding averaging period and at the corresponding frequency set out in Table 6.

14. The licence holder must ensure that for monitoring undertaken in accordance with condition 13:

(a) all samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all sampling is conducted in accordance with AS/NZS 5667.4;
(c) fortnightly sampling is conducted at least 9 days apart;
(d) monthly sampling is conducted at least 15 days apart; and
(e) all laboratory samples are submitted to, and tested by, a laboratory with current NATA accreditation for the parameters being measured.

Table 6: Dredge pond monitoring requirements

Monitoring location[1]	Parameter	Units	Averaging period	Frequency
Dredge pond	pH	-	Spot sample (in-field), monthly	Fortnightly
	Total acidity	mg/L	Spot sample (laboratory)	
	Total alkalinity (as $CaCO_3$)		Spot sample (in-field or laboratory)	
	Dissolved oxygen		Spot sample (in-field)	Monthly
	Electrical conductivity	µS/cm		
	Temperature	°C		

Note 1: The spatial distribution of sampling locations, and sampling depth at each location, must be sufficient to demonstrate the variation in both a horizontal and vertical direction across the entire dredge pond.

15. The licence holder must report to the CEO, by 1 April each year, the results of the monitoring required by condition 13 for the preceding annual period.

16. The licence holder must ensure the report required by condition 15 includes, but is not limited to:

(a) an assessment and trend analysis of the results against previous monitoring results;
(b) a comprehensive list of all sampling points (clearly defined), including all raw data for depth profile, area profile and depth-integrated sampling; and
(c) justification of how the number of sampling locations and sampling depth is sufficient to demonstrate the variation in both a horizontal and vertical direction across the entire dredge pond.

Dredge pond – investigation

17. The licence holder must undertake an investigation into the leakage rate of water from the dredge pond into the surrounding aquifer, to estimate the likely long-term impacts of seepage from the dredge pond using reactive transport modelling. The investigation must include, but not be limited to:

(a) assessing differences in the chemical composition between the dredge pond water and groundwater in the shallow aquifer;
(b) drilling nests of monitoring wells to detect vertical changes in groundwater quality within the aquifer; and
(c) developing a mixing model which uses the dredge pond water and natural groundwater as end-members in the model.

18. The Licence Holder must submit to the CEO, by 1 July 2020, a written report of the outcomes of the investigation required by Condition 17.

Mineral Residue Facility – authorised waste types

19. The licence holder may only dispose waste at the Mineral Residue Facility if:

(a) it is of a type specified in Table 7;
(b) it is sourced from the location specified in Table 7
(c) it meets the characteristic specified in Table 7; and
(d) it meets the definition of a solid.

Table 7: Authorised waste types

Waste type	Source	Characteristic
Coarse rejects	Chandala Mineral Separation Plant (MSP)	Coarse sand containing up to 0.5% monazite;
Pre-screen tailings		Clay and oversize waste sand;
Filter cake (SRE)	Chandala Synthetic Rutile Plant (SRP)	Mainly iron oxide and calcium sulfate with some heavy metals;
Filter cake (IO/NAE)		Mainly iron oxide and calcium sulfate with some heavy metals, generated from the synthetic rutile process;
Pugged waste		Mainly iron oxide and char;
Liquor pond solids		
Waste fines		Coal fines and unburnt residual coal from the SR kiln;
Filter cake	Kwinana Pigment Plant	Metal hydroxides, including sodium aluminate scale;
Other (hazardous waste)	Chandala MSP & SRP, Kwinana	Inert wastes potentially contaminated by NORM.

Mineral Residue Facility – surface water controls

20. The licence holder must not cause or allow surface water runoff and leachate from the Mineral Residue Facility to enter, overflow, or be discharged to:

(a) Mullering Brook; or
(b) the dredge pond.

Mineral Residue Facility – dust controls

21. The licence holder must ensure that dust from the Mineral Residue Facility is not visible outside of the MRF area, as shown in Figure 2 of Schedule 1.

22. The licence holder must implement the controls specified in Table 8 in accordance with the corresponding actions/requirements specified in Table 8.

Table 8: Mineral Residue Facility – dust controls

Control	Actions/requirements
Active dust suppression	• Must apply water to suppress dust on pit working faces and haul roads leading into the MRF using water carts, fixed sprays or both; • Must operate when visible dust is generated from within the MRF area; • If mobile watering measures have not prevented dust liftoff and there is a risk of dust escaping the MRF area, fixed sprinkler systems, mobile windbreaks or both must be employed to reduce wind effects;
Stabilisation	• Non-active dumping areas must be sheeted with clay fines (or similar) to minimise the area of waste exposed; • Benches and open areas within the MRF must be stabilised with application of chemical stablisers, clay slimes or planting cover crops;
Covering/capping	• Each load of coarse rejects must be covered as soon as practicable after deposition; • Capping of waste pits must be expedited to minimise the area of waste exposed to wind.

Mineral Residue Facility – monitoring and reporting

23. The licence holder must undertake monitoring of groundwater around the Mineral Residue Facility at the locations and for the parameters specified in Table 9, in the corresponding units, over the corresponding averaging period and at the corresponding frequency set out in Table 9.

24. The licence holder must ensure that for monitoring undertaken in accordance with condition 23:

(a) all samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all sampling is conducted in accordance with AS/NZS 5667.11;
(c) all laboratory samples are submitted to, and tested by, a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in Table 9;
(d) monthly monitoring is undertaken at least 15 days apart;
(e) quarterly monitoring is undertaken at least 45 days apart;
(f) 6-monthly monitoring is undertaken at least 4 months apart; and
(g) annual monitoring is undertaken at least 9 months apart.

Table 9: MRF groundwater monitoring requirements

Monitoring point and reference location	Parameter	Units	Averaging period	Monitoring frequency
MRF monitoring bores: WMB01A, WMB02C, WMB06sB, WMB07d, WMB09, WMB11d, WMB12d, WMB13, WMB15, WMB16	Standing water level	m AHD	Spot sample (in-field)	Quarterly
	pH	-		
	Electrical conductivity @ 25°C	µS/cm	Spot sample (laboratory determined)	
	Redox potential	mV		
	Major ions: bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, total dissolved solids	mg/L		
	Total acidity			
	Total alkalinity			
	Metals and metalloids: aluminum, arsenic, cadmium, chromium (total Cr and CrIV), cobalt, copper, iron, mercury, nickel, selenium, thallium, uranium, zinc			6-monthly

25. The licence holder must undertake monitoring of fugitive dust around the MRF area at the locations and for the parameters specified in Table 10, in the corresponding units, at the corresponding frequency, for the corresponding duration and using the corresponding method set out in Table 10.

Table 10: MRF dust monitoring requirements table

Monitoring point and reference	Parameter	Units	Monitoring frequency	Sampling duration	Method
MRF dust deposition gauges: DGMRF01, DGMRF02, DGMRF03, DGMRF04	Total insoluble matter	g/m^2/month	Monthly, between 1 October and 31 May inclusive	Continuous	AS 2922-1987 AS 3580.10.1

26. The licence holder must maintain accurate records of:

(a) the amount of residues disposed at the MRF, by residue type; and
(b) the location(s) of residues disposed, by month.

27. The licence holder must submit to the CEO, by 1 April each year, a report with the results of the monitoring required by conditions 23, 25 and 26 for the preceding annual period.

28. The licence holder must ensure the report required by condition 26 includes an assessment and trend analysis of the results against previous monitoring results and relevant environmental standards.

Acid Sulfate Soils

29. The licence holder must implement the actions/requirements specified in Table 11 for each corresponding aspect set out in Table 11.

Table 11: Acid sulfate soils controls

Aspect	Actions/Requirements
Drilling	• Testing for pH_F and pH_{FOX} must be conducted during pre-mine drilling (≥0.2 holes/ha)
Overburden	• Prior to overburden removal, the presence of pyrite and pyrite-oxidation products in overburden must be identified by appropriate field investigations and by referral to the conceptual geological model for the Premises; • Details of sites where pyrite or its oxidation products have been shown to be present in overburden must be recorded, in addition to information on how the material has been managed to prevent acidification; • Actual and potentially acidic overburden must be: (i) buried (untreated) at the base of a solar drying dam, at least ≥1 m above the water table; or (ii) buried completely below the water table (PASS material); or (iii) treated at the calculated liming rate for adequate neutralisation (PASS/ASS) • Actual and potentially acidic overburden requiring stockpiling prior to treatment and burial must be stockpiled on a treatment pad comprising minimum 300 mm thick compacted crushed limestone (or other appropriate neutralisation material) and bunded with a minimum 150 mm high perimeter of compacted, crushed limestone to contain leachate runoff within the treatment pad area/prevent surface water runoff from entering the pad area
Oversize (ore)	• Must be deposited at the base of the dredge pond
Clay fines	• Overall amount of clay fines within the dredge pond must be kept to a practical minimum • TTA, TPA and TAlk of clay fines within solar drying dams must be monitored at least fortnightly whilst pumping to solar drying dams; • TTA, TPA and TAlk of dried clay fines must be determined prior to landform reconstruction • Actual and potentially acidic clay fines must be: (i) placed as a homogenous layer at least ≥1 m above the water table in solar drying dams; (ii) placed completely below the water table (PASS material); (iii) treated at the calculated liming rate for adequate neutralisation (PASS/ASS)

Fugitive dust

30. The licence holder must implement the controls specified in Table 12 in accordance with the corresponding actions/requirements set out in Table 12.

Table 12: Fugitive dust control

Control	Actions/Requirements
Topsoil stripping	• Must schedule to avoid periods of high wind conditions;
Water carts/sprays	• Must operate when visible dust is generated from ground surfaces on the Premises;
Transport	• Haulage trucks must be clean on entry to, and exit from, the Premises;
Rehabilitation and open areas	• Open or disturbed areas must be stabilised, using a combination of mulch, cover crops and/or chemical stabilising agents;
Monitoring	• Sampling of dust levels along the Premises boundary must be conducted using dust deposition gauges in accordance with AS3580.10.1; • Must be conducted monthly during the period October – May, inclusive.

Monitoring general

31. The licence holder must ensure that all monitoring equipment used on the Premises to comply with the conditions of this licence is calibrated in accordance with the manufacturer's specifications.

32. The licence holder must ensure, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Ambient environmental monitoring and reporting

33. The Licence Holder must undertake monitoring of ambient groundwater quality at the reference locations and for the parameters specified in Table 13, in the corresponding units, over the corresponding averaging period, and at the corresponding frequency set out in Table 13.

Table 13: Ambient groundwater quality monitoring requirements table

Monitoring point and reference location	Parameter	Units	Averaging period	Monitoring frequency
- Dredge pond; - Two sets of nested bores: ▪ upgradient and downgradient of the active dredge pond; ▪ upgradient and downgradient of the future mine path (>6 months ahead); ▪ upgradient and downgradient of	Standing water level	m AHD	Spot sample (in-field)	Quarterly
	pH	-		
	Electrical conductivity @ 25°C	µS/cm	Spot sample (laboratory determined)	
	Redox potential	mV		
	Major ions: bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, total dissolved solids	mg/L		
	Total acidity			
	Total alkalinity			
	Metals and metalloids: aluminum, arsenic, cadmium, chromium (total			6-monthly

Monitoring point and reference location	Parameter	Units	Averaging period	Monitoring frequency
mined areas (until within pre-mining levels)	Cr and CrIV), cobalt, copper, iron, mercury, nickel, selenium, thallium, uranium, zinc			

34. The licence holder must submit to the CEO, by 1 April each year, the results of the monitoring required by condition 33 for the preceding annual period.

35. The licence holder must ensure the report required by condition 34 includes an assessment and trend analysis of the results against pre-mining baseline data and previous monitoring results.

Records and reporting

36. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;
(b) the works conducted in accordance with condition 5 of this licence;
(c) any maintenance of infrastructure that is performed in the course of complying with condition 7 of this licence;
(d) monitoring undertaken in accordance with conditions 13, 23, 25 and 33 of this licence;
(e) records of mineral processing residues deposited in the MRF in accordance with condition 26 of this licence; and
(f) complaints received under condition 38 of this licence.

37. The books specified under condition 36 must:

(a) be legible;
(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
(c) be retained by the licence holder for the duration of the licence; and
(d) be available to be produced to an inspector or the CEO as required.

38. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the Premises:

(a) the name and contact details of the complainant (if provided);
(b) the time and date of the complaint;
(c) the complete details of the complaint and any other concerns or other issues raised; and
(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

39. The licence holder must prepare and submit to the CEO by no later than 1 April in each year, an Annual Environmental Report for the preceding annual period which includes, but is not limited to:

(a) details of the calculation of fees payable in respect of this licence;
(b) a summary of works conducted in accordance with condition 5 of this licence, including certification by a licensed professional engineer that the works have been constructed with no material defects and to the requirements specified in Table 3 of this licence;

(c) a summary of maintenance of infrastructure performed in the course of complying with condition 7 of this licence;
(d) monitoring reports required by conditions 15, 27 and 34 of this licence, including the requirements set out in conditions 16, 28 and 35 of this licence;
(e) MRF records in accordance with condition 26 of this licence;
(f) a summary of any complaints received under condition 38 of this licence, and management actions taken for each complaint; and
(g) a summary of any environmental incidents and any action(s) taken.

40. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
(b) prepare and submit to the CEO by no later than 1 April in each year, an Annual Audit Compliance Report in the approved form for the preceding annual period.

Definitions

In this licence, the terms in Table 14 have the meanings defined.

Table 14: Definitions

Term	Definition
ACN	Australian Company Number
AEP	Annual Exceedance Probability – refers to the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year
AHD	Australian Height Datum
Annual Audit Compliance Report (AACR)	means a report in a format approved by the CEO (relevant guidelines and templates are available on the Department's website)
annual period	means a 12 month period commencing from 1 January until 31 December
AS 1289.5.1.1	means the most recent version and the relevant parts of the Australian Standard AS 1289.5.1.1 *Methods of testing soils for engineering purposes Soil compaction and density tests – Determination of the dry density/ moisture content relation of a soil using standard compactive effort*
AS 2922-1987	means the most recent version and the relevant parts of the Australian Standard AS 2922-1987 *Ambient air – Guide for the siting of sampling units*
AS 3580.10.1	means the most recent version and the relevant parts of the Australian Standard AS 3580.10.1 *Methods for sampling and analysis of ambient air – Determination of particulate matter – deposited matter – gravimetric method*
AS 3798-2007	means the most recent version and the relevant parts of the Australian Standard AS 3798-2007 *Guidelines on earthworks for commercial and residential developments*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*
ASS	Acid Sulfate Soils
averaging period	means the time over which a limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act
CEO	means Chief Executive Officer. 'submit to / notify the CEO' (or similar) means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6919 or: info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under s.62 of the EP Act
DDR	Dry Density Ratio

Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act
department request	means a request for books or other sources of information to be produced, made by an Inspector or the CEO to the licence holder in writing and sent to the licence holder's address for notifications, as described at the front of this licence, in relation to: (a) compliance with the EP Act or this licence; (b) the books or other sources of information maintained in accordance with this licence; or (c) the books or other sources of information relating to emissions from the Premises
discharge	has the same meaning given to that term under the EP Act
dredge pond	means the open area of water in which dredge mining is taking place and tailings are being deposited
DWER	Department of Water and Environmental Regulation
emission	has the same meaning given to that term under the EP Act
environmental harm	has the same meaning given to that term under the EP Act
EP Act	means the *Environmental Protection Act 1986* (WA)
EP Regulations	means the *Environmental Protection Regulations 1987* (WA)
high wind	means wind conditions rating 7 or greater on the Beaufort Wind Force Scale (i.e. wind speeds 50 km/h or greater)
HMC	Heavy Mineral Concentrate
implementation agreement or decision	has the same meaning given to that term under the EP Act
inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act
IO	Iron Oxide
licence	refers to this document, which evidences the grant of a licence by the CEO under s.57 of the EP Act, subject to the Conditions
licence holder	refers to the occupier of the Premises being the person to whom this licence has been granted, as specified at the front of this licence
licensed professional engineer	means a person holding current registration with the Institution of Engineers Australia (IEAust)
material environmental harm	has the same meaning given to that term under the EP Act
MDD	Maximum Dry Density
Mineral Residue Facility (MRF)	means the area on the Premises that has been used for the disposal of tailings and other production wastes generated from downstream processing and refining of the mined sands ('mineral processing residues'), and depicted by the green dotted line in the MRF map in Schedule 1
NAE	Neutralised Acid Effluent
NATA	National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
NORM	Naturally Occurring Radioactive Material

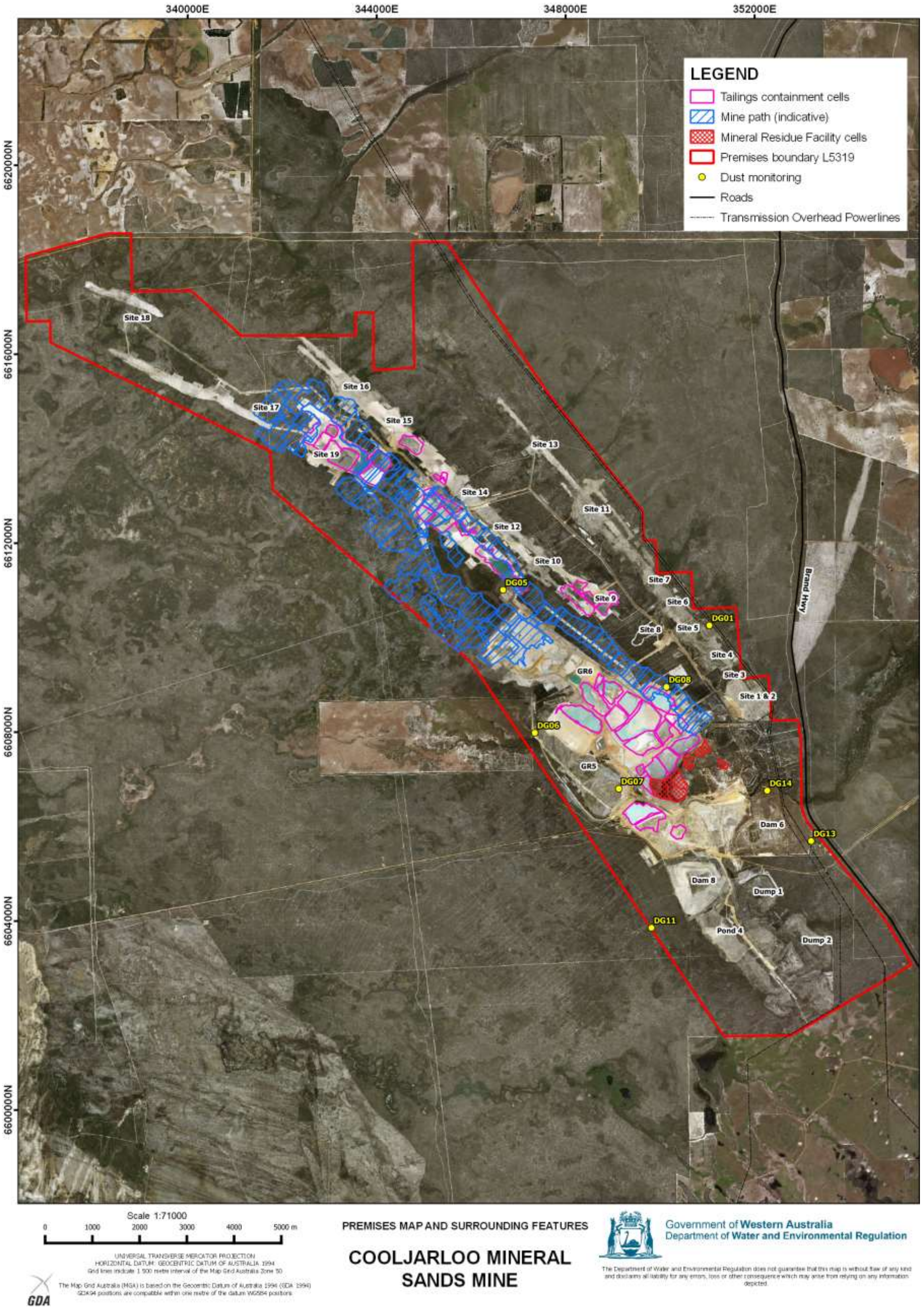
PASS	Potential Acid Sulfate Soils
pH_F	field pH
pH_{FOX}	field peroxide pH
pollution	has the same meaning given to that term under the EP Act
Premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the map (Figure 1) in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
primary activities	refers to the prescribed premises activities listed on the front of this licence as described in Schedule 2, at the locations shown in Schedule 1
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year
serious environmental harm	has the same meaning given to that term under the EP Act
six monthly	means the two inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year
solid	means material that: (a) has an angle of repose of greater than 5 degrees; (b) does not contain, or is not comprised of, any free liquids; (c) does not contain, or is not comprised of, any liquids that are capable of being released when the material is transported; (d) does not become free flowing at or below 60°C or when it is transported; and (e) is generally capable of being moved a spade at normal temperatures (i.e. is spadeable)
spot sample	means a discrete sample representative of the time and place at which the sample is taken
SRE	Synthetic Rutile Effluent
TAlk	Total Alkalinity
TPA	Total Potential Acidity
TTA	Total Titratable Acidity
unreasonable emission	has the same meaning given to that term under the EP Act
waste	has the same meaning given to that term under the EP Act
WCP	Wet Concentrator Plant
works	means the infrastructure listed in Table 4 of this licence to be carried out at the Premises, subject to the conditions of this licence

END OF CONDITIONS

Schedule 1: Maps

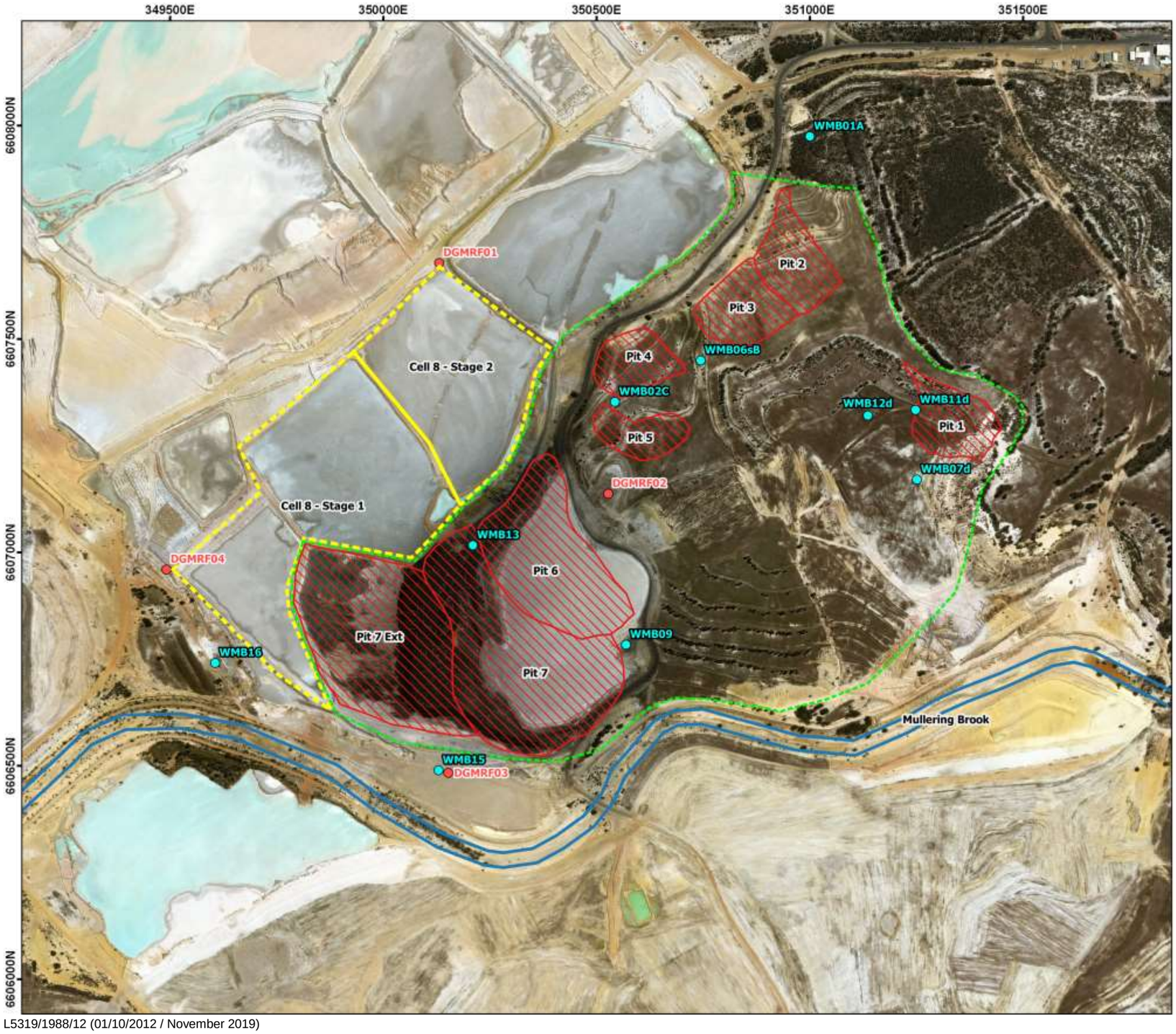
Premises map

The boundary of the prescribed Premises is shown in the map below (Figure 1).



Mineral Residue Facility (MRF) map

The MRF is shown in the map below. The green dotted area depicts the “MRF area” (Figure 2).



COOLJARLOO MINERAL SANDS MINE

MINERAL RESIDUE FACILITY FEATURES

LEGEND

- MRF area
- Mineral Residue Facility cells
- WMB groundwater monitoring bores
- MRF dust monitoring sites
- Proposed Cell 8

Scale 1:9000

0 100 200 300 400 500 600 m

UNIVERSAL TRANSVERSE MERCATOR PROJECTION
HORIZONTAL DATUM: GEOCENTRIC DATUM OF AUSTRALIA 1994
Grid lines indicate 1 500 metre interval of the Map Grid Australia Zone 50.

The Map Grid Australia (MGA) is based on the Geocentric Datum of Australia 1994 (GDA 1994)
GDA94 positions are compatible within one metre of the datum WGS84 positions

GDA

Government of Western Australia
Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

Schedule 2: MRF Extension drawings (Cell 8)

Final landform and cross section view

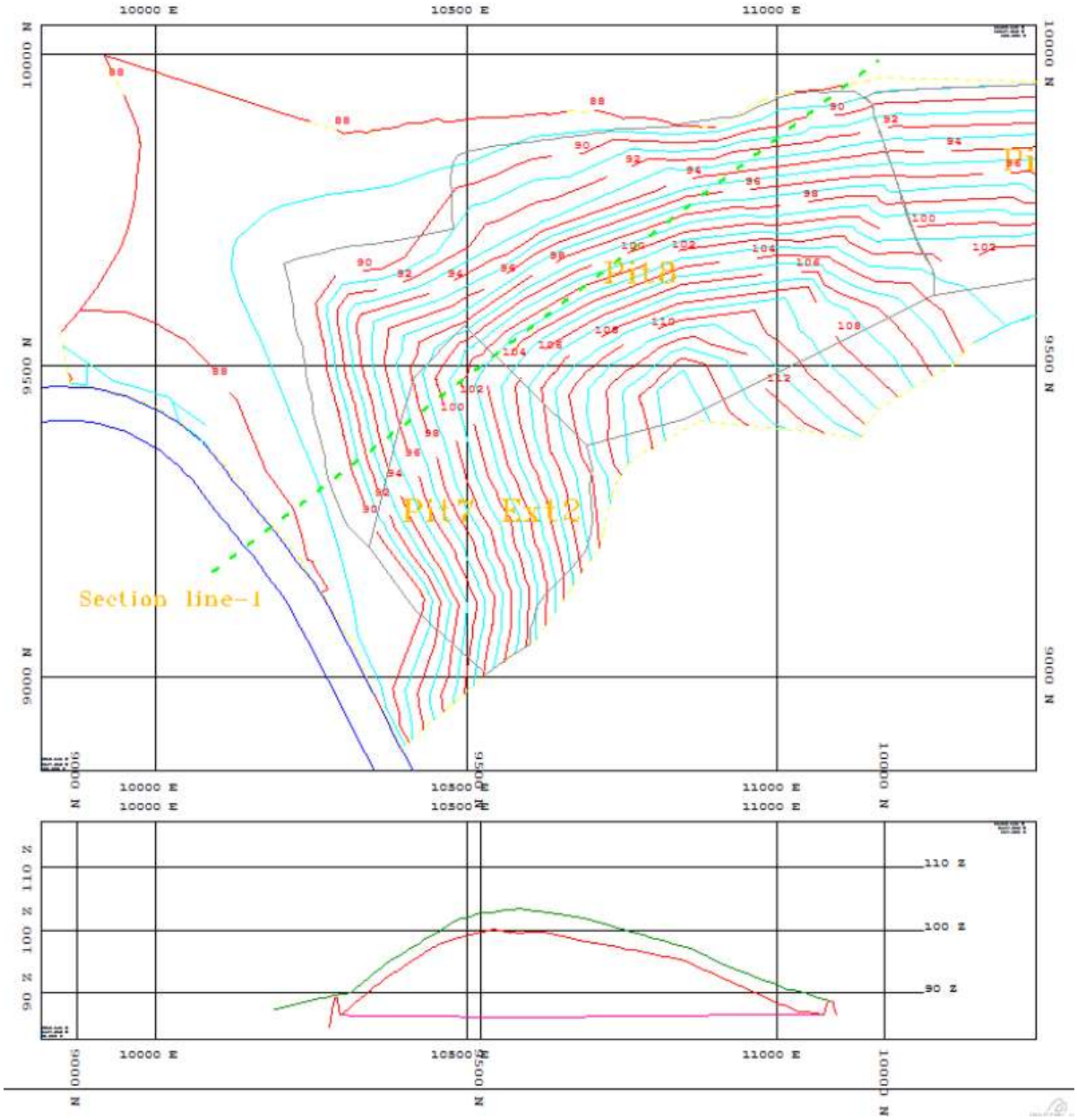


Figure 1: Final landform and cross section view of Cell 8 (west-east)

Final landform and cross section view

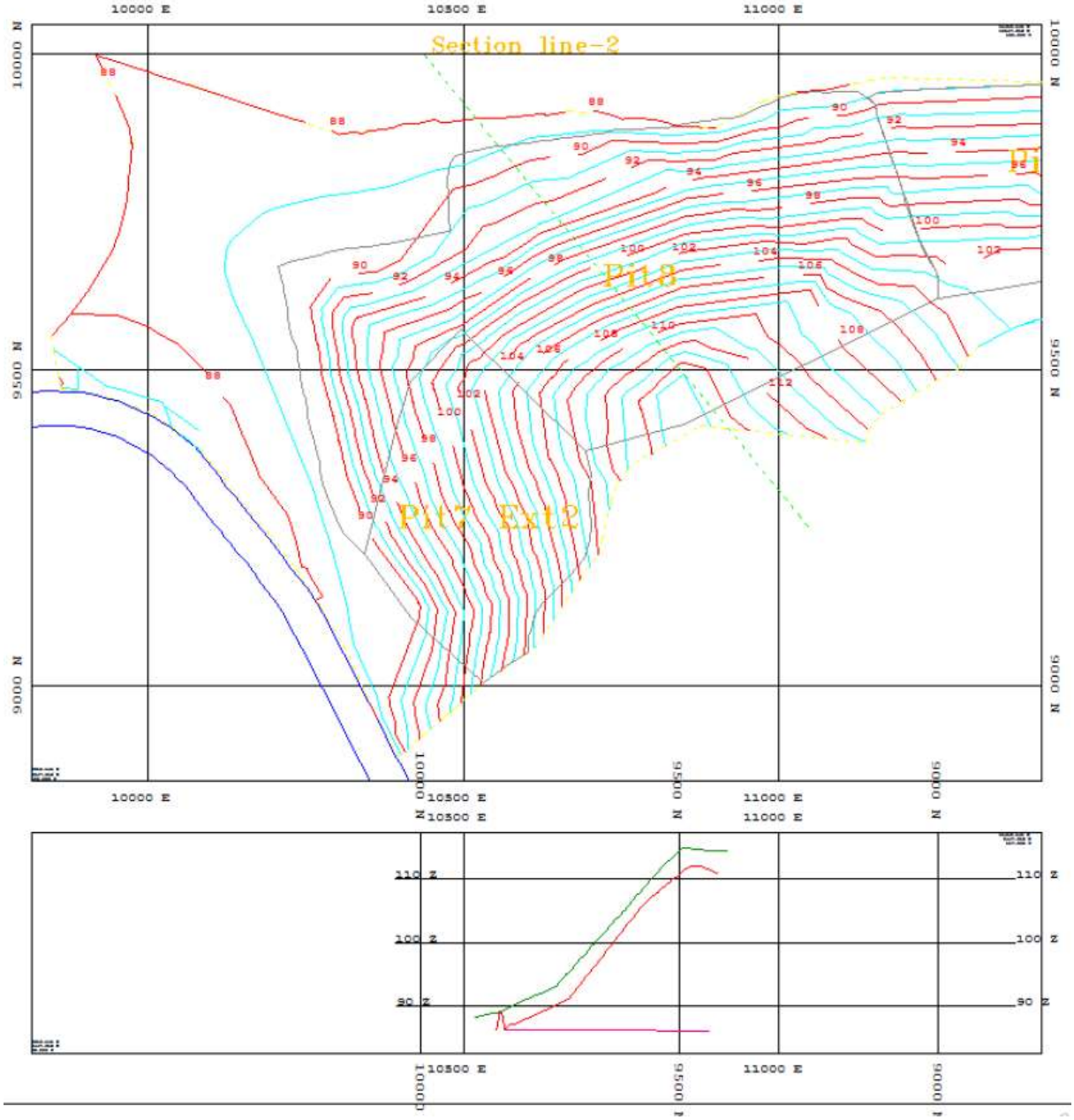


Figure 2: Final landform and cross section view of Cell 8 (north-south)