Licence number L8008/2004/3

**Licence Holder** FQM Australia Nickel Pty Ltd

**ACN** 135 761 465

Registered business address Level 2, 18-32 Parliament Pl,

WEST PERTH WA 6005

**DWER file number** DWERVT16538

**Duration** 14/05/2013 to 13/05/2026

Date of issue 14 May 2013

Date of amendment 7 May 2025

Premises details Ravensthorpe Nickel Operations

**RAVENSTHORPE WA 6346** 

Legal description -

Mining tenements L74/54, M74/108, M74/114, M74/115, M74/116, M74/123, M74,142, M74/144, M74/145, M74/167, M74/168, M74/173, M74/174, M74/175 and G74/08 as depicted in Schedule 1

| Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations</i> 1987) | Assessed production / design capacity |
|---|---------------------------------------|
| Category 5: Processing or beneficiation of metallic or non-metallic ore                                 | 21 500 000 tonnes per annual period   |
| Category 31: Chemical manufacturing   | 1 606 000 tonnes per annual period    |
| Category 52: Electric power generation  | 70 MW in aggregate                    |
| Category 54: Sewage Facility  | 300 m <sup>3</sup> per day            |
| Category 89: Putrescible landfill   | 2 500 tonnes per annual period        |

This licence is granted to the Licence Holder, subject to the attached conditions, on 7 May 2025, by:

#### Alana Kidd

#### Manager, Green Energy

Officer delegated under section 20 of the Environmental Protection Act 1986

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# **Licence History**

| Date       | Reference number | Summary of changes  |  |
|------------|------------------|---|--|
| 14/05/2005 | L8008/2004/1     | New Licence issued to Ravensthorpe Nickel Operations Pty Ltd to produce nickel cobalt hydroxide intermediate with commissioning occurring in second half of 2007 with expected life of 25 years.                          |  |
| 07/02/2008 | W4397/2007/1     | Works Approval for construction of 5 additional evaporation ponds (10, 11, 14, 15 & 17) beside the 4 existing ponds (9,12,13 & 16) plus a new stilling basin to supply process liquors to the expanded evaporation ponds. |  |
| 20/10/2008 | W4452/2008/1     | Works Approval for upgrade to the beneficiation plant by improving the physical separation, classification and rejection of course low-grade ore.   |  |
| 21/11/2008 | W4463/2008/1     | Works Approval for construction of 2 additional evaporation ponds (ponds 18 & 19).  |  |
| 14/05/2010 | L8008/2004/2     | Licence re-issued to new owners First Quantum Minerals (FQM) by BHP Billiton with takeover occurring on February 2010.  |  |
| 02/08/2010 | W4715/2010/1     | Works Approval for the construction of two new beneficiation plant buffer ponds and modification to two existing crushers.  |  |
| 26/10/2010 | W4767/2010/1     | Works Approval to raise the TSF wall heights of stage 1 and stage 2 to 132.5m RL.   |  |
| 21/03/2011 | W4873/2011/1     | Works Approval to construct a sands reject storage facility (SRSF) to store Limonite and Saprolite sands rejects from the beneficiation process.  |  |
| 30/05/2011 | W4937/2011/1     | Works Approval for installation 5 by 2 MW diesel fuelled power generators.  |  |
| 21/07/2011 | R2250/2011/1     | Registration of category 89 Abrasive Blasting operations at the Premises.   |  |
| 18/03/2013 | W5364/2013/1     | Works Approval to expand the existing TSF to include TSF stage 3 area of 223 ha where land clearing was approved  |  |

| Date       | Reference number | Summary of changes   |  |
|------------|------------------|--|--|
|            |                  | under Ministerial Statement 633.   |  |
| 14/05/2013 | L8008/2004/3     | Licences re-issue.   |  |
| 26/01/2015 | W5754/20014/1    | Works approval for construction of evaporation pond number 20.   |  |
| 29/04/2016 | L8008/2004/3     | DER amendment by notice extends the licence expiry to 13 May 2026.   |  |
| 01/09/2016 | L8008/2004/3     | This amendment includes raising of Tailings Storage Facility (TSF) 1 and TSF 2 to RL 147m and RL 137m respectively and administrative changes including the removal of redundant conditions.   |  |
| 03/02/2017 | L8008/2004/3     | Amendment Notice 1: To authorise use of the limonite pond of the Sands Reject Storage Facility (SRSF) as an additional evaporation pond for tailings decant water.   |  |
| 27/09/2019 | L8008/2004/3     | Amendment Notice: 2 Added Definition of monitoring, reporting and notification requirements for operational and non-operational periods. Requirement for investigation into integrity and use of Dam 2 ('Mine Drainage- North' – 'Map Reference 25).   |  |
| 04/10/2022 | L8008/2004/3     | Licence amendment to include the Shoemaker-Levy Mine (SML) into the licence operations as assessed in W6303/2019/1. Amendment includes amalgamation of amendment notice 1 and 2 into the licence, which includes an update to the format, and removal of redundant conditions.   |  |
| 22/08/2023 | L8008/2004/3     | Licence amendment to include the TSF 2 embankment height raise to allow additional TSF deposition. Licence amendment to operate TSF 2 Stage 3 at RL 126.4m. Constructed under W6578/2021/1.  |  |
|            |                  | Transfer of Licence from Ravensthorpe Nickel Operations Pty Ltd to FQM Australia Nickel Pty Ltd included with amendment.   |  |
| 07/05/2025 | L8008/2004/3     | Licence amendment to co-dispose mineral residues (other than production tailings) at TSF1 and TSF2, to establish a category 89 landfill for disposal of up to 2,500 tonnes per annual period of non-process waste within the exhausted Halley's pit, and transfer TSF stage 4 operation conditions from W6739/2022/1 into the licence.  Inclusion of minor administrative amendments to the licence. |  |

#### **Amalgamation of amendment notices**

This amended licence includes consolidation of amendment notices issued between 2016 to 2019 (as detailed in the instrument log), where relevant. The obligations of the Licence Holder did not change in making this administrative amendment in 2022. During the consolidation of amendment notices, the department did not undertake any additional risk assessment of the premises.

In consolidating the licence, the CEO:

- updated the format and appearance of the licence;
- deleted the redundant AACR form set out in Schedule 2 of the previous licence and advised the Licence Holder to obtain the form from the department's website;
- revised the licence condition numbers, removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

## 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 in this licence:
  - (i) if dated, refers to that particular version; and
  - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (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.

**NOTE:** This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

## Licence conditions

#### **General conditions**

The Licence Holder shall immediately recover, or remove and dispose of spills of saline, alkaline or acidic liquors (including process liquors, tailings, or decant water) outside an engineered containment system.

#### **Premises operation**

- 2 The Licence Holder shall ensure that all pipelines containing tailings, process liquors including decant water or saline water are either:
  - equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;
  - (b) equipped with automatic cut-outs in the event of a pipe failure; or
  - (c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.
- 3 The Licence Holder must only deposit the following into TSF1 and TSF2:
  - (a) tailings sourced from the premises;
  - (b) mineral residues from the premises:
    - (i) evaporation pond salt;
    - (ii) sulfur filter residue;
    - (iii) magnesium oxide; and
    - (iv) washdown facility silts.
- The Licence Holder shall ensure that tailings, process liquors, decant water and saline waters are only discharged into containment cells, dams or ponds with the relevant infrastructure requirements and at the locations specified in Table 1 and identified in Figures 2a, 2b and 2c within Schedule 1. The Licence Holder is authorised to discharge 4.56 Mtpa tailings in total to TSF1 and TSF2.

**Table 1: Containment infrastructure** 

| Containment point reference     | Containment<br>Name         | Material stored                              | Infrastructure requirements   |
|---------------------------------|-----------------------------|--|---|
| Figure 2a<br>Map<br>reference 1 | Saprolite Buffer<br>Pond    | Saline slurry of crushed saprolite based ore | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 2 | Limonite Buffer<br>Pond     | Saline slurry of crushed limonite-based ore  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 3 | Northern<br>Stormwater Pond | Stormwater and process water                 | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |

| Containment point reference      | Containment<br>Name                      | Material stored   | Infrastructure requirements   |
|----------------------------------|--|---|---|
| Figure 2a<br>Map<br>reference 4  | Desalination Pond                        | Desalinated water   | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 5  | Hypersaline Pond                         | Hypersaline water (reject stream from the desalination plant) | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 6  | Raw Water Pond                           | Seawater imported from Mason Bay                              | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 7  | Southern<br>Stormwater South<br>– Top    | Stormwater and process water                                  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 8  | Southern<br>Stormwater South<br>– Bottom | Stormwater and process water                                  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 9  | Saprolite<br>Beneficiation Pond          | Hypersaline water   | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 10 | Limonite Beneficiation Pond              | Hypersaline water   | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 11 | RO Brine Pond                            | Hypersaline rejects from the Reverse Osmosis plant            | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 12 | RNO HV Workshop<br>Stormwater Pond       | Stormwater  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 13 | HV Workshop Oily<br>Water Pond           | Hydrocarbon<br>Wastewater                                     | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 14 | Halleys Dam 2                            | Saline water  | Integrity of the clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less      |
| Figure 2a<br>Map<br>reference 15 | Rejects Facility<br>Dam                  | Saline water  | Integrity of the clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less      |

| Containment point reference      | Containment<br>Name                             | Material stored               | Infrastructure requirements   |
|----------------------------------|---|-------------------------------|---|
| Figure 2a<br>Map<br>reference 16 | Mine Drainage<br>South                          | Stormwater                    | Integrity of the clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less      |
| Figure 2a<br>Map<br>reference 17 | Farm Dam  | Stormwater                    | Integrity of the clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less      |
| Figure 2a<br>Map<br>reference 18 | Halleys Dam 1                                   | Stormwater                    | Integrity of the clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less      |
| Figure 2a<br>Map<br>reference 19 | Mining Turkey's<br>Nest                         | Stormwater                    | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 20 | WWTP Ponds                                      | Domestic wastewater (sewage)  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 21 | Sewage<br>Contingency Pond<br>(Decommissioned)  | Rainwater                     | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2a<br>Map<br>reference 22 | Bioremediation<br>Pad                           | Hydrocarbon contaminated soil | Integrity of the concrete liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less  |
| Figure 2a<br>Map<br>reference 23 | Pipeline Drain<br>Pond (North)                  | Tailings / Seawater           | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2b<br>Map<br>reference 24 | Pipeline Drain<br>Pond (South)                  | Tailings / Seawater           | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2b<br>Map<br>reference 25 | Seawater Pipeline<br>Transfer Station<br>Pond 2 | Seawater                      | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2c<br>Map<br>reference 26 | SML Stormwater<br>Dam NPI                       | Rainwater                     | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less |
| Figure 2c<br>Map<br>reference 27 | SML HV Workshop<br>Ponds                        | Hydrocarbon<br>wastewater     | Integrity of the concrete liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less  |

| Containment point reference      | Containment<br>Name                            | Material stored  | Infrastructure requirements   |  |
|----------------------------------|--|--|---|--|
| Figure 2c<br>Map<br>reference 28 | SML HV Workshop<br>Oily Water Pond             | Stormwater   | Integrity of the concrete liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less  |  |
| Figure 2c<br>Map<br>reference 29 | SML Mining<br>Turkeys Nest                     | Seawater   | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a permeability of less than 2x10 <sup>-10</sup> m/s  |  |
| Figure 2b<br>Map<br>Reference 30 | Tailings Storage<br>Facilities 1 and 2         | Tailings from Process Plant Mineral residues, from the Ravensthorpe site only, including:  up to 500,000 tonnes per annum (tpa) evaporation pond salt;  up to 1,000 tpa sulfur filter residue;  up to 500 tpa magnesium oxide; and  up to 300 tpa washdown facility silts. | Integrity of the 300mm clay liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less  |  |
| Figure 2b<br>Map<br>Reference 31 | Evaporation ponds                              | Treated process water from TSF and Process Plant   | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less   |  |
| Figure 2a<br>Map<br>Reference 32 | Sands Rejects<br>Storage Facility<br>(SRSF)    | Rainwater  | Integrity of the synthetic liner to be maintained in an intact and unperforated state with a seepage rate of 10 <sup>-9</sup> m/s or less   |  |
| -                                | SML Pipeline                                   | Seawater   | Flow detection with low-flow alarms   |  |
| -                                | Stormwater infrastructure associated with TSF2 | Stormwater   | <ul> <li>The existing diversion drain along the western flank of the TSF to be maintained to provide protection from stormwater runoff and potential erosion impacts to TSF2;</li> <li>A natural sediment trap to be maintained at the discharge point of the reinstated stormwater diversion drain; and</li> <li>TSF2 maintained so that all embankment crests will have a 2% inward crossfall to direct surface water runoff into the TSF basin.</li> </ul> |  |

5 The Licence Holder shall maintain the freeboards as detailed in Table 2, for the specified containment infrastructure in Table 1.

Table 2: Embankment freeboards for infrastructure listed in Table 1

| Containment point reference   | Infrastructure listed in Table 1             | Minimum freeboard (mm)  |
|-------------------------------|--|---|
| Evaporation and wa            | stewater treatment ponds                     |   |
| Figure 2a<br>Map reference 20 | WWTP Ponds                                   | 300   |
| Figure 2b Map Reference 31    | Evaporation ponds                            |   |
| Tailings storage fac          | ilities                                      |   |
| Figure 2b Map Reference 30    | Tailings Storage Facilities 1 and 2          | 300 – operational freeboard as measured from the embankment crest of TSF1 and 2 respectively, to the tailings beach |
| Process ponds                 |  |   |
| Figure 2a<br>Map reference 4  | Desalination Pond                            | 800   |
| Figure 2a<br>Map reference 5  | Hypersaline Pond                             |   |
| Figure 2a<br>Map reference 6  | Raw Water Pond                               |   |
| Figure 2a<br>Map reference 9  | Saprolite Beneficiation Pond                 |   |
| Figure 2a Map reference 10    | Limonite Beneficiation Pond                  |   |
| Figure 2a Map reference 11    | RO Brine Pond                                |   |
| Figure 2a<br>Map reference 23 | Pipeline Drain Pond (North)                  |   |
| Figure 2b<br>Map reference 24 | Pipeline Drain Pond (South)                  |   |
| Figure 2b<br>Map reference 25 | Seawater Pipeline Transfer Station<br>Pond 2 |   |
| Mine dams                     |  |   |
| Figure 2a                     | Halleys Dam 2                                | 800   |

| Containment point reference   | Infrastructure listed in Table 1 | Minimum freeboard (mm) |  |
|-------------------------------|----------------------------------|------------------------|--|
| Map reference 14              |                                  |                        |  |
| Figure 2a<br>Map reference 15 | Rejects Facility Dam             |                        |  |
| Figure 2a Map reference 17    | Farm Dam                         |                        |  |
| Figure 2a<br>Map reference 18 | Halleys Dam 1                    |                        |  |
| Figure 2c<br>Map reference 26 | SML Stormwater Dam NPI           |                        |  |
| Contaminated storn            | nwater ponds                     |                        |  |
| Figure 2a<br>Map reference 12 | RNO HV Workshop Stormwater Pond  | 800                    |  |
| Figure 2a<br>Map reference 13 | HV Workshop Oily Water Pond      |                        |  |
| Figure 2a<br>Map reference 16 | Mine Drainage South              |                        |  |
| Figure 2c<br>Map reference 27 | SML HV Workshop Ponds            |                        |  |
| Figure 2c<br>Map reference 28 | SML HV Workshop Oily Water Pond  |                        |  |
| Buffer ponds                  |                                  |                        |  |
| Figure 2a<br>Map reference 1  | Saprolite Buffer Pond            | 1,000                  |  |
| Figure 2a Map reference 2     | Limonite Buffer Pond             |                        |  |

## **6** The Licence Holder shall:

- (a) undertake inspections as detailed in Table 3;
- (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
- (c) maintain a written log of all inspections undertaken with each inspection to be signed by the responsible person.

**Table 3: Inspection of infrastructure** 

| Scope of inspection  | Type of inspection   | Frequency of inspection            |  |
|--|--|------------------------------------|--|
| Tailings pipelines   | Visual inspection for pipeline integrity                                 |                                    |  |
| Seawater pipeline  | Monitoring by real time remote telemetry and alarms for leaks and spills | Daily during operations            |  |
| Return water lines   | Visual inspection for pipeline integrity                                 |                                    |  |
| Embankment freeboards as detailed in condition 5, Table 2                | Visual inspection using freeboard markers to confirm required freeboard  |                                    |  |
| Tailings decant/supernatant ponds  | Visual assessment of pond size and position                              | Daily during operations; or        |  |
| Evaporation ponds/wastewater treatment ponds/buffer ponds/ limonite pond | Visual inspection using freeboard markers to confirm required freeboard  | Weekly during care and maintenance |  |
| Limonite Pond - Leakage Detection<br>Pit                                 | Check pit for liquor collection  |                                    |  |

- 7 The Licence Holder shall manage the irrigation of treated wastewater such that:
  - (a) no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the defined irrigation area(s);
  - (b) treated wastewater is evenly distributed over the irrigation area;
  - (c) no soil erosion occurs;
  - (d) irrigation does not occur on land that is waterlogged; and
  - (e) vegetation cover is maintained over the irrigation area.
- The Licence Holder is authorised to operate the TSF 1 and TSF 2 at the operating heights listed in Table 4 below.

Table 4: RNO TSF1 and TSF2 construction and operating heights

| Stages  | TSF   | Construction<br>Height (m)  | Operating Height (m) |
|---------|---|-----------------------------|----------------------|
| Stage 1 | TSF 1 southern, eastern and western embankments (upstream or downstream construction) | RL 132.5(+3m) =<br>RL 135.5 | RL 135.2             |
|         | TSF 2 eastern, western and southern embankment (upstream or downstream construction)  | RL 120 (+3m) =<br>RL 123    | RL 122.7             |
| Stage 2 | TSF 1 (upstream construction)   | RL 137                      | RL 136.7             |
|         | TSF 2 downstream construction   | RL 124.5                    | RL 124.2             |

| Stages  | TSF                           | Construction<br>Height (m) | Operating Height (m) |
|---------|-------------------------------|----------------------------|----------------------|
| Stage 3 | TSF 1 (upstream construction) | RL 138.5                   |                      |
|         | TSF 2 downstream construction | RL 126.7                   | RL 126.4             |
| Stage 4 | TSF 2 downstream construction | RL 129.7                   | RL 129.4             |

- The Licence Holder shall conduct an annual assessment of standing water levels and groundwater quality in groundwater bores surrounding TSF 1 and TSF2 and evaluate the results against modelled predictions made in the report Golder (2012) Stage 3 Expansion Seepage and Solute Modelling Ravensthorpe Nickel Operations Tailings Storage Facility, December 2012. A contour map indicating the actual extent and concentrations of the magnesium sulphate plume shall be included in the Annual Environmental Report.
- The Licence Holder shall only start-up the sulfuric acid plant where the wind speed is equal to or more than 3 m/s, as measured by the meteorological station located at site 'DDG4', as shown in Figure 6 of Schedule 1.
- The Licence Holder shall only start-up the sulfuric acid plant where the wind speed is less than 3 m/s If the wind direction originates within one of the following true compass arcs, as measured by the meteorological station located at site 'DDG04', as shown in Figure 6 in Schedule 1:
  - (a) between 0° and 40°;
  - (b) between 60° and 285°; and
  - (c) between 305° and 360°.
- The Licence Holder shall immediately shut-down the sulfuric acid plant if either of the following circumstances occur for more than 60 consecutive minutes:
  - (a) the flow in the Final Absorption Tower is equal to or less than 250 m<sup>3</sup>/h; or
  - (b) the percentage concentration of acid circulating in the sulfuric acid plant is equal to or more than 99.6%.
- The Licence Holder shall ensure that where the sulfuric acid plant has been shut-down in accordance with condition 12, that it shall remain shut-down until:
  - (a) the cause of the circumstance(s) leading the shut-down has been rectified; and
  - (b) the CEO has been notified of the need for troubleshooting and how this troubleshooting is likely to rectify the problem.
- The Licence Holder must ensure that the site infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirements set out in Table 5.

Table 5: Landfill infrastructure and equipment operational requirements

| Item | Site infrastructure                           | Operational requirements   | Infrastructure location   |
|------|---|--|---|
| 1    | Category 89 landfill:<br>general requirements | <ul> <li>a) waste must meet acceptance criteria for a class II landfill (as defined in the Landfill Waste Classification and Waste Definitions 1996 [as amended 2019]);</li> <li>b) the type and volume of waste disposed at the landfill must be recorded;</li> </ul> | Located with<br>Halley's pit as<br>shown in Figure<br>10 of Schedule<br>1 |

| Item | Site infrastructure               | Operational requirements   | Infrastructure location |
|------|-----------------------------------|--|-------------------------|
|      |                                   | c) waste to be placed in trenches and covered on a weekly basis during operations and fortnightly during care and maintenance:                           |                         |
|      |                                   | (i) cover must be inert and non-combustible material; and  |                         |
|      |                                   | (ii) minimum depth of cover to be 100 mm.  |                         |
|      |                                   | <ul> <li>d) signage at the landfill entry stating permitted and prohibited waste streams;</li> </ul>   |                         |
|      |                                   | <ul> <li>e) the base of the landfill will be separated from<br/>the highest level of the water table aquifer at<br/>the site by at least 3 m;</li> </ul> |                         |
|      |                                   | earthen bunds must be constructed and maintained around waste trenches to prevent surface water ingress;   |                         |
|      | Category 89 landfill: disposal of | <ul> <li>g) tyres and rubber materials must be disposed of within dedicated trenches;</li> </ul>   |                         |
|      | tyres/rubber                      | h) no more than 100 tyres or rubber equivalent to be left uncovered within a landfill trench; and  |                         |
|      |                                   | <ul> <li>following achievement of final waste levels,<br/>tyre/rubber trenches must have minimum final<br/>depth of cover of 1,000 mm.</li> </ul>        |                         |

## **Seepage Management**

The Licence Holder must ensure that the site infrastructure and equipment listed in Table 6 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 6.

Table 6: TSF seepage infrastructure and equipment requirements

| Site infrastructure and equipment | Operational requirement  | Infrastructure<br>location   |
|-----------------------------------|--|--|
| Seepage recovery bores / wells    | maintained for continued recovery of seepage<br>so that standing groundwater levels as<br>monitored in condition 34, Table 14 are below 6<br>m below ground level  | Figure 7a, 7b, 7c and 8 of Schedule 1  |
| Seepage interception trench       | <ul> <li>trench and sump associated to the Seepage<br/>Collection system located along the southern<br/>flank of TSF2 are to be maintained for the<br/>collection and recovery of seepage; and</li> <li>natural sediment trap located at the discharge<br/>point of the reinstated stormwater diversion<br/>drain to be maintained.</li> </ul> | Referred to as 'Seepage Collection Trench' as shown in the Stormwater and Seepage Management Map in Figure 9 of Schedule 1 |

#### **Emissions**

#### **Emissions to land**

The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of this Licence.

#### Point source emissions to air

17 The Licence Holder shall ensure that where waste is emitted to air from the emission points in Table 7 and identified on Figure 3 in Schedule 1, it is done so in accordance with the conditions of this Licence.

Table 7: Point source emissions to air

| Emission point reference (as shown in Figure 3) | Emission Point and source                      | Emission<br>point height<br>(m) | Source, including any abatement  |
|---|--|---------------------------------|--|
| A1  | Acid Plant main stack                          | 80                              | Acid Plant after the final absorber tower which includes a candle type mist eliminator |
| A2  | Sulphur melter stack                           | 10.5                            | Sulphur melter in Acid Plant   |
| A3  | PAL (pressure acid leach) 1 vent stack         | 30                              | Vent and pressure relief gases via gas scrubber  |
| A4  | PAL 2 vent stack                               | 30                              | Vent and pressure relief gases via gas scrubber  |
| A5  | AL (Atmospheric<br>Leach) vent stack           | 22                              | Interconnected vent system between Pre-Leach and AL tanks with a mist eliminator       |
| A6  | Secondary<br>Neutralisation (SN)<br>vent stack | 22                              | SN tanks via mist eliminator   |

#### **Emissions to land**

The Licence Holder shall ensure that where waste is emitted to land from the emission points in Table 8 and identified on the map of emission points on Figure 4 and Figure 5 in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 8: Emissions to land

| Emission point reference and location | Description   | Source including abatement                                |
|---------------------------------------|---|---|
| Irrigation Area                       | Discharge from irrigation pump station to on-site irrigation area | Treated wastewater pumped from wastewater treatment plant |

The Licence Holder shall not cause or allow emissions to land greater than the limits listed in Table 9.

Table 9: Emission limits to land

| Emission point  | Parameter                       | Limit<br>(including units) | Averaging Period |
|-----------------|---------------------------------|----------------------------|------------------|
| Irrigation Area | Total Nitrogen as (N)           | 88 kg/ha                   | Annual           |
|                 | Total Phosphorus as (P)         | 20 kg/ha                   | Annual           |
|                 | Total Biochemical Oxygen Demand | 30 kg/ha                   | Daily            |

#### **Fugitive emissions**

- From 1 November to 30 April, when the average wind speed is equal to or more than 15 metres per second between 0900 hours and 1600 hours for more than 30 consecutive minutes (as measured by the meteorological station located at site DDG 04, as shown in Figure 6, Schedule 1) the Licence Holder shall visually inspect the TSFs for fugitive dust emissions. The Licence Holder shall record the results of the inspection in a TSF dust monitoring log. The log shall include:
  - (a) the date and time of the inspection;
  - (b) the environmental conditions at the time of inspection, including wind direction and speed;
  - (c) actions taken in response by the Licence Holder; and
  - (d) the name and signature of the inspector.
- The Licence Holder shall ensure that a high-capacity water truck is always available at the Shoemaker-Levy primary crushing facility stockpiles during crushing operations and/or whilst stockpiles are present to supress fugitive dust from the stockpiles.
- The Licence Holder shall ensure the dust suppression water sprays at the Shoemaker-Levy primary crushing facility are maintained and operated to minimise fugitive dust from the facility.
- The Licence Holder must ensure that a high-capacity water truck with a water spray cannon is available on-site to supress fugitive dust from the tailings storage facilities, landfill and other areas on-site as required.

## **Monitoring**

#### **General monitoring**

- 24 The Licence Holder shall ensure that:
  - (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
  - (b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
  - (c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
  - (d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.
- 25 The Licence Holder shall ensure that:
  - (a) monthly monitoring is undertaken at least 15 days apart;
  - (b) quarterly monitoring is undertaken at least 45 days apart; and
  - (c) six monthly monitoring is undertaken at least 5 months apart.

- The Licence Holder shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.
- The Licence Holder shall 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.
- The Licence Holder shall, 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.

#### Monitoring of point source emissions to air

The Licence Holder shall undertake the monitoring in Table 10 according to the specifications in that table.

Table 10: Monitoring of point source emissions to air

| Emission point reference         | Parameter  | Reporting Units <sup>1</sup>  |       | Averaging<br>Period | Frequency <sup>2</sup>        | Method               |                                   |
|----------------------------------|--|---|-------|---------------------|-------------------------------|----------------------|-----------------------------------|
| A1 (Acid<br>Plant Main<br>Stack) | Volumetric flowrate  | Nm³/s   |       | 60 minutes          | Six monthly during operations | USEPA<br>Method<br>2 |                                   |
|                                  | Sulfuric acid<br>mist<br>(H <sub>2</sub> SO <sub>4</sub> ) | kg (expressed<br>as SO <sub>3</sub> )/ tonne<br>of 100% acid or<br>equivalent | mg/m³ | g/s                 |                               |                      | USEPA<br>Method<br>6 <sup>3</sup> |
|                                  | Sulfur<br>dioxide<br>(SO <sub>2</sub> )                    | kg/tonne of<br>100% acid or<br>equivalent                                     | mg/m³ | g/s                 |                               |                      | USEPA<br>Method<br>6              |

- Note 1: All units are referenced to STP dry
- Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.
- Note 3: Modified USEPA Method 6 permitted to obtain an SO<sub>3</sub> concentration.
- The Licence Holder shall ensure that monitoring required under condition 29 of the Licence is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code.
- The Licence Holder shall ensure that all non-continuous monitoring and analysis undertaken pursuant to condition 29 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

#### Monitoring of emissions to land

The Licence Holder shall undertake the monitoring in Table 11 according to the specifications in that table.

Table 11: Monitoring of emissions to land

| Emission point reference | Parameter                         | Units          | Averaging<br>Period | Frequency                    |
|--------------------------|-----------------------------------|----------------|---------------------|------------------------------|
| WWTP ponds               | Volumetric flow rate (cumulative) | m <sup>3</sup> | Monthly             | Continuous during operations |

| Emission point reference | Parameter                    | Units | Averaging<br>Period | Frequency      |
|--------------------------|------------------------------|-------|---------------------|----------------|
|                          | рН                           | -     | Spot sample         | Monthly during |
|                          | Total suspended solids (TSS) | mg/L  |                     | operations     |
|                          | Total dissolved solids (TDS) | mg/L  |                     |                |
|                          | Biochemical oxygen demand    | mg/L  |                     |                |
|                          | Total nitrogen               | mg/L  |                     |                |
|                          | Total phosphorus             | mg/L  |                     |                |
|                          | Electrical conductivity      | dS/m  |                     |                |

## **Process Monitoring**

The Licence Holder shall undertake the monitoring in Table 12 according to the specifications in that table.

**Table 12: Process monitoring** 

| Process description            | Parameter   |                | Frequency                            | Method            |
|--------------------------------|---|----------------|--------------------------------------|-------------------|
| Tailings<br>deposition         | Volumes of tailings deposited into the TSF1 East Cell, TSF 1 West Cell and TSF2 | m³             | Cumulative monthly during operations | None<br>specified |
|                                | Volumes of decant water recovered from the TSF1 and TSF2                        | m <sup>3</sup> | Cumulative monthly during operations |                   |
| Other mineral waste deposition | Volumes of approved minerals wastes deposited into TSF1 and TSF2                | m³             | Cumulative monthly during deposition | None<br>specified |

## **Ambient environmental quality monitoring**

The Licence Holder shall undertake the monitoring in Table 13 and Table 14 and identified in Schedule 1 according to the specifications in that table and record and investigate results that do not meet any limit or target specified.

Table 13: Monitoring of ambient air quality

| Monitoring point reference and location | Parameter                                 | Target | Units                       | Averaging period                | Frequency  | Method              |
|---|---|--------|-----------------------------|---------------------------------|------------|---------------------|
| DDG1, DDG2<br>DDG3, DDG4,               | Particulate<br>matter (Total<br>Insoluble | 4      | g/m <sup>2</sup> /<br>month | Monthly<br>during<br>operations | Continuous | AS/NZS<br>3580.10.1 |
| DDG5, DDG6,                             | Solids)                                   |        |                             | and three<br>monthly            |            |                     |

| Monitoring point reference and location | Parameter | Target | Units | Averaging period   | Frequency | Method |
|---|-----------|--------|-------|--------------------|-----------|--------|
| DDG7, DDG8,                             |           |        |       | when in care       |           |        |
| DDG9, DDG10,                            |           |        |       | and<br>maintenance |           |        |
| DDG11, DDG12                            |           |        |       | mamonanee          |           |        |

Table 14: Monitoring of ambient groundwater quality

| Monitoring point reference and location  | Parameter  | Trigger<br>level | Limit | Units | Averaging period | Frequency              |
|--|--|------------------|-------|-------|------------------|------------------------|
| Irrigation Area  | Standing water level   | -                | -     | mbgl  | Spot<br>sample   | Quarterly              |
| RWC52, RWC53,  | рН   | -                |       | 1     |                  |                        |
| RWC54, RWC55   | Electrical conductivity  | -                |       | dS/m  |                  |                        |
|  | Total suspended solids, total nitrogen, total phosphorus   | -                | -     | mg/L  |                  |                        |
| TSFs and evaporation ponds:  | Standing water level   | 6                | 4     | mbgl  | Spot<br>sample   | Quarterly <sup>1</sup> |
| MB1, MB2, MB5,   | рН   | -                |       | -     | sample           |                        |
| MB6, MB7, MB8,<br>MB9, MB10, MB11,   | Electrical conductivity  | -                |       | dS/m  |                  |                        |
| MB12, MB13, MB14, MB15, MB61, MB62, MB63, MB64, MB65, MB66, MB67, MB68  RWB01, RWC20, RWC27(D), RWC30, RWC35, RWC 42.  Buffer ponds: MB17, MB18, MB21, MB22, MB23.  Limonite Pond (Sands Reject Storage Facility): MB24, MB25, MB34. | Total dissolved solids, carbonate, bicarbonate, hydroxide, total alkalinity, calcium. chloride, sodium, potassium, magnesium, sulfur, sulfate.  Aluminium, arsenic, barium, beryllium, cadmium, chromium (total), chromium (VI) cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, tin, vanadium, zinc, |                  |       | mg/L  |                  |                        |
| <u>TSFs</u>  | Radium 226<br>Radium 228   | 5<br>5           |       | Bq/L  |                  | Annually               |

| Monitoring point reference and location   | Parameter            | Trigger<br>level | Limit | Units | Averaging period | Frequency |
|---|----------------------|------------------|-------|-------|------------------|-----------|
| MB1, MB7, MB11,   | Gross alpha          | 1                |       |       |                  |           |
| MB15, MB61,<br>MB62, RWC42  | Gross beta           | 5                |       |       |                  |           |
| TSFs PZ01, PZ02, PZ03, PZ04, PZ05, VWP- 13, VWP-14, VWP- 15, VWP-16, VWP- 17, VWP-18, VWP- 19, VWP-20. RWC49, RWC50, RWC56, MB60. | Standing water level | -                | -     | mbgl  | Spot<br>sample   | Quarterly |

Note 1: biannually during care and maintenance

- In the event that the trigger level for standing water level is exceeded for TSF monitoring bores listed in Table 14, the Licence Holder must:
  - (a) submit and implement a seepage management plan to reduce groundwater levels below 6 m bgl to the CEO within 3 months<sup>1</sup> of the exceedance occurring; and
  - (b) the management plan in 35(a) must include installation of fit-for-purpose<sup>2</sup> seepage recovery infrastructure, including justification by a suitably qualified hydrogeologist.

Note 1: If the facility is in care and maintenance, and groundwater levels remain stable or drop, the seepage management plan can be submitted within 3 months upon recommencing operations.

Note 2: Monitoring bores should be kept separate from seepage recovery infrastructure to ensure continuity and reliability of monitoring data. Conversion of monitoring bores into seepage recovery bores will therefore not be accepted.

- The Licence Holder, following an exceedance of trigger levels for any of radium 226, radium 228, uranium 238, gross alpha or gross beta in Table 14, must:
  - (a) contact the Radiological Council and the Department of Health for guidance;
  - (b) provide a report to the CEO within 28 days of becoming aware of the exceedance. The report must include, but not be limited to:
    - (i) date recorded and the monitoring bore ID for the exceedance;
    - (ii) locations of nearby residential premises and their distance from the tailings storage facility; and
    - (iii) any actions taken, including contact with the Radiological Council and Department of Health and any guidance received.
- 37 The Licence Holder, following an exceedance of the target in Table 14, shall provide a report to the CEO within 28 days of becoming aware of the exceedance. The report shall include but not be limited to:
  - (a) time, date, gauge number and GPS location;
  - (b) the nickel content of the exceedance results; and
  - (c) an assessment of the cause of the exceedance.

#### **Meteorological monitoring**

38 The Licence Holder shall undertake the meteorological monitoring specified in Table 15.

**Table 15: Meteorological monitoring** 

| Monitoring station location         | Parameter       | Units   | Method     |
|-------------------------------------|-----------------|---------|------------|
| DDG04 as shown on map in Schedule 1 | Wind speed      | m/s     |            |
|                                     | Wind direction  | Degrees | AS 3580.14 |
|                                     | Air temperature | °C      |            |

- 39 The Licence Holder shall ensure that the meteorological monitoring station is:
  - (a) available for 90% of the time per calendar month;
  - (b) maintained to the manufacturer's specifications; and
  - (c) maintained by persons that are trained and approved by the manufacturer to service the monitoring station.

## Monitoring of tailings storage facility water balance

- The Licence Holder must undertake monitoring of the water balance for all tailings storage facilities on-site each monthly period, and (as a minimum) record the following information:
  - (a) site rainfall;
  - (b) evaporation rate;
  - (c) volume of tailings deposited;
  - (d) percentage solids to liquids in the tailings slurry;
  - (e) volume of decant water recovered from the combined TSF infrastructure and subsequently stored within the series of evaporation ponds;
  - (f) volume of decant water transported to the process plant for re-use;
  - (g) estimate of seepage losses, for the following infrastructure:
    - (i) combined TSF infrastructure; and
    - (ii) series of evaporation ponds; and
    - (iii) volumes of seepage recovered via the following infrastructure:
    - (iv) seepage collection trench;
    - (v) toe drains;
    - (vi) series of catchment ponds; and
    - (vii) seepage recovery bore network.

#### Information

#### **Records**

- 41 All information and records required by the Licence shall:
  - (a) be legible;
  - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;

- (c) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.
- The Licence Holder must submit to the CEO an Annual Audit Compliance Report within 60 days after the annual period, indicating the extent to which the Licence Holder has complied with the conditions in this Licence for the annual period.
- The Licence Holder shall implement a complaints management system that as a minimum, records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

#### Reporting

The Licence Holder shall submit to the CEO an Annual Environmental Report within 60 calendar days after the end of the annual period. The report shall contain the information listed in Table 16 in the format or form specified in that table.

**Table 16: Annual Environmental Report** 

| Condition or table | Parameter   | Format or form <sup>1</sup>   |
|--------------------|---|-------------------------------|
| (if relevant)      |   |                               |
| -                  | Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken | None specified                |
| Condition 9        | Annual assessment of groundwater mounding due to seepage in the vicinity of TSF1 and TSF2   | Groundwater plume contour map |
| Table 9            | Annual average loads of each contaminant in the effluent discharged from the WWTP to the irrigation area during operations  | None specified                |
| Table 10           | Monitoring of acid plant point source emissions to air during operations  |                               |
| Table 11           | Monitoring of emissions to land   |                               |
| Table 12           | Monitoring of tailings deposition, other approved waste disposal and decant water recovered during operations   |                               |
| Table 13           | Monitoring of ambient air quality   |                               |
| Table 14           | Ambient groundwater monitoring  |                               |
| Table 15           | Meteorological monitoring   |                               |
| Condition 40       | Water balance monitoring  |                               |
| Condition 43       | Complaints summary  | None specified                |

| Condition or table (if relevant) | Parameter  | Format or form <sup>1</sup>                 |
|----------------------------------|------------|---|
| -                                | Compliance | Annual Audit<br>Compliance Report<br>(AACR) |

Note 1: Forms are in Schedule 2

- The Licence Holder must submit to the CEO, with the Annual Environmental Report required by condition 44 a review of monitoring undertaken, and must include but not be limited to:
  - (a) a clear statement of the scope of work carried out;
  - (b) a detailed description of the field methodologies employed;
  - (c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;
  - (d) copies of the field monitoring records and field QA/QC documentation;
  - (e) laboratory certificates including QA/QC documentation;
  - (f) an assessment of reliability of field procedures and laboratory results;
  - (g) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;
  - (h) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);
  - (i) any relevant process, production or operational data recorded under condition 33;
  - (j) an interpretive summary and assessment of the results against relevant environmental guidelines and licence management triggers/limits;
  - (k) an interpretive summary and assessment of results against previous monitoring results;
  - (I) spatial assessments: where mean data are presented (e.g. time or distance), range and variability should also be presented, e.g. standard deviation or percentiles; and
  - (m) trend graphs to provide a graphical representation of historical results and to support the interpretive summary. Use of appropriate scales on axes is required to ensure any trends are visible and relevant to environmental guidelines.
- 46 The Licence Holder shall submit the information in

Table 17 to the CEO according to the specifications in that table.

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**Table 17: Non-annual reporting requirements** 

| Condition or table (if relevant) | Parameter  | Reporting period  | Reporting date (after end of the reporting period) | Format or form                                       |
|----------------------------------|--|-------------------|--|--|
| -                                | Copies of original monitoring reports submitted to the Licence Holder by third parties | Not<br>Applicable | Within 14 days<br>of the CEOs<br>request           | As received by the Licence Holder from third parties |

#### **Notification**

The Licence Holder shall ensure that the parameters listed in Table 18 are notified to the CEO in accordance with the notification requirements of the table.

**Table 18: Notification requirements** 

| Condition or table (if relevant) | Parameter  | Notification requirement <sup>1</sup>   | Format or form <sup>2</sup> |
|----------------------------------|--|---|-----------------------------|
| Condition 16                     | Breach of any limit specified in the Licence   | Part A: As soon as practicable but no later than 5pm of the next usual working day. | N1                          |
| Condition 4                      | Any failure or suspected failure of the integrity of a clay or HDPE liner for any containment pond | Part B: As soon as practicable  |                             |
| Condition 12                     | Any event where the sulfuric acid plant is required to be shut-down according to condition 12.     | Not required during care and maintenance  |                             |
| Condition 34                     | Exceedance report in response to condition 36 and/or 37 target exceedance                          | Within 28 days of becoming aware of the exceedance                                  | None<br>specified           |

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2

# **Definitions**

In this Licence, the terms in Table 19 have the meanings defined.

**Table 19: Definitions** 

| Term                                  | Definition  |
|---------------------------------------|---|
| ACN                                   | Australian Company Number   |
| EP Act                                | Environmental Protection Act 1986   |
| Annual Audit Compliance Report (AACR) | a report in a format approved by the CEO as presented by the licensee or as specified by the CEO from time to time and published on the department's website                    |
| annual period                         | means the inclusive period from 1 May until 30 April in the following year  |
| AS/NZS 3580.10.1                      | means the Australian Standard AS/NZS 3580.10.1  Methods for sampling and analysis of ambient air –  Determination of particulate matter – Deposited matter – Gravimetric method |
| AS 4323.1                             | Australian Standard AS4323.1 Stationary Source<br>Emissions Method 1: Selection of sampling<br>positions  |
| AS/NZS 5667.1                         | Australian Standard AS/NZS 5667.1 Water Quality  – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples     |
| AS/NZS 5667.10                        | Australian Standard AS/NZS 5667.10 Water<br>Quality – Sampling – Guidance on sampling of<br>waste waters  |
| AS/NZS 5667.11                        | Australian Standard AS/NZS 5667.11 Water<br>Quality – Sampling – Guidance on sampling of<br>groundwaters  |
| averaging period                      | the time over which a limit or target is measured or a monitoring result is obtained  |
| buffer ponds                          | the 'saprolite buffer pond' and 'limonite buffer pond' as depicted in Figure 2a in Schedule 1   |
| Bq/L                                  | Becquerel per litre   |
| Care and maintenance                  | the period during the suspension of mining operations as defined in the <i>Mining Act 1978</i>  |
| CEMS                                  | continuous emissions monitoring system  |

| Term               | Definition   |
|--------------------|--|
| CEMS Code          | the current version of the Continuous Emission<br>Monitoring System (CEMS) Code for Stationary<br>Source Air Emissions, Department of Environment<br>& Conservation, Government of Western Australia |
| CEO                | Chief Executive Officer of the Department of Water and Environmental Regulation  |
| Department         | Administering the <i>Environmental Protection Act</i> 1986   |
| dS/m               | deci-Siemens per metre   |
| EP Act             | Environmental Protection Act 1986 (WA)   |
| EP Regulations     | Environmental Protection Regulations 1987 (WA)   |
| freeboard          | the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point   |
| fugitive emissions | all emissions not arising from point sources identified  |
| Licence            | this Licence numbered L8008/2004/3 and issued under the Act  |
| Licence Holder     | the person or organisation named as Licence<br>Holder on page 1 of the Licence   |
| mine dams          | the dams labelled 'Northern Saline Pond, 'Central<br>Saline Pond, 'Southern Saline Pond' and 'Eastern<br>Sediment Ponds' as depicted in Figure 2a in<br>Schedule 1                                   |
| mineral residues   | mineral residues include:  |
|                    | a) evaporation pond salt;  |
|                    | <ul><li>b) sulfur filter residue;</li><li>c) magnesium oxide; and</li></ul>  |
|                    | d) washdown facility silts.  |
| mgbl               | metres below ground level  |
| NATA               | National Association of Testing Authorities,<br>Australia  |
| NATA accredited    | in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis  |

| Term                        | Definition  |
|-----------------------------|---|
| normal operating conditions | any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring |
| Operation/'s                | the period during mining operations as defined in the <i>Mining Act 1978</i>  |
| Premises                    | the area defined in the Premises Map in Schedule<br>1 and listed as the Premises address on page 1 of<br>the Licence  |
| process ponds               | 'Northern Stormwater Pond', 'Desalination Pond',<br>'raw water pond' and 'hypersaline pond' as<br>depicted in Figure 2a in Schedule 1                                 |
| quarterly                   | 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                         |
| sand rejects                | Limonite and saprolite sand rejects from the beneficiation process  |
| Schedule 1                  | Schedule 1 of this Licence unless otherwise stated  |
| Schedule 2                  | Schedule 2 of this Licence unless otherwise stated  |
| Shut-down                   | means the period when plant or equipment is brought from normal operating conditions to inactivity  |
| six monthly                 | the 2 inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year  |
| spot sample                 | a discrete sample representative at the time and place at which the sample is taken   |
| stack test                  | a discrete set of samples taken over a representative period at normal operating conditions   |
| start-up                    | the period when plant or equipment is brought from inactivity to normal operating conditions  |
| STP dry                     | standard temperature and pressure (0° Celsius and 101.325 kilopascals respectively), dry  |

| Term  | Definition  |
|---|---|
| Suitably qualified hydrogeologist means a person who: | <ul> <li>a person who:</li> <li>a) holds a Bachelor of Science, or a hydrogeology related tertiary level qualification; and</li> <li>b) has a minimum of at least 3 years experience working in the field of hydrogeology.</li> </ul> |
| tailings  | Residue waste/slurry from the processing of mined ore (i.e. waste materials after the target mineral is extracted from the ore)   |
| TSF   | an engineered containment pond or dam used to store tailings (Tailings Storage Facility)  |
| USEPA   | United States (of America) Environmental Protection Agency  |
| USEPA Method 2  | the USEPA's Method 2 – Determination of Stack<br>Gas Velocity and Volumetric Flow Rate (Type S<br>Pitot Tube)   |
| USEPA Method 6  | the USEPA's Method 6 – Determination of Sulfur<br>Dioxide Emissions from Stationary Sources   |
| usual working day                                     | 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia  |
| wastewater treatment ponds                            | the set of three ponds labelled 'wastewater treatment plant pond' as depicted in Figure 2a in Schedule 1  |
| WWTP  | waste water treatment plant and includes the treatment plant and pond system, which treats wastewater from the camp   |

# Schedule 1: Maps

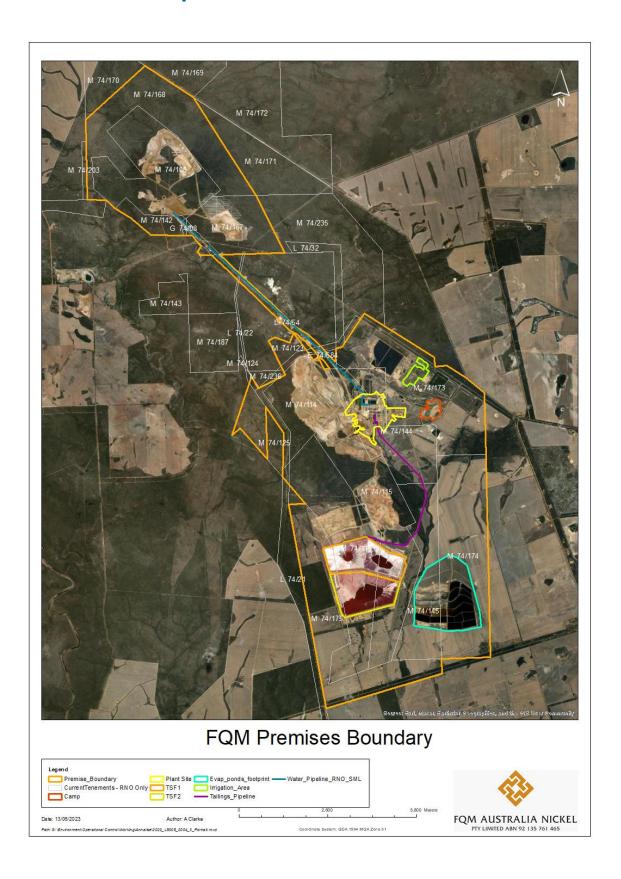


Figure 1: Prescribed Premises Map

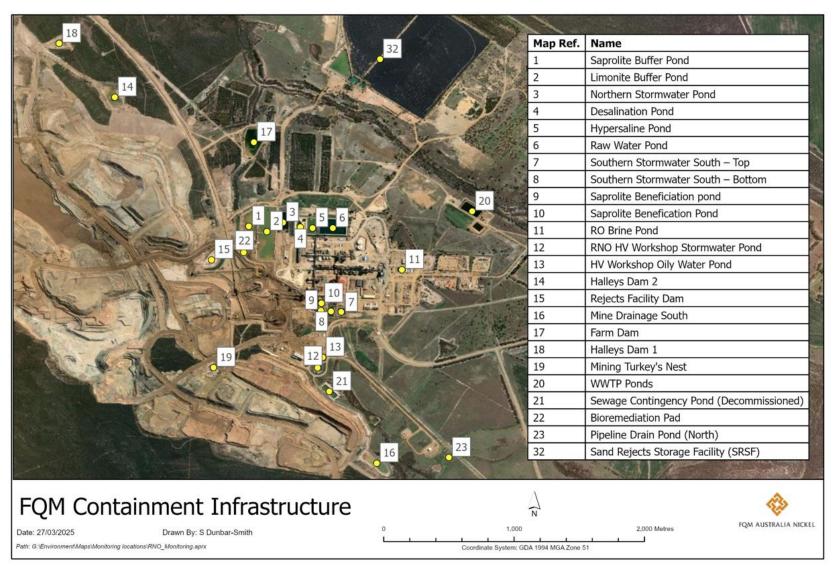


Figure 2a: Site map (northern section) showing locations of process plant containment infrastructure

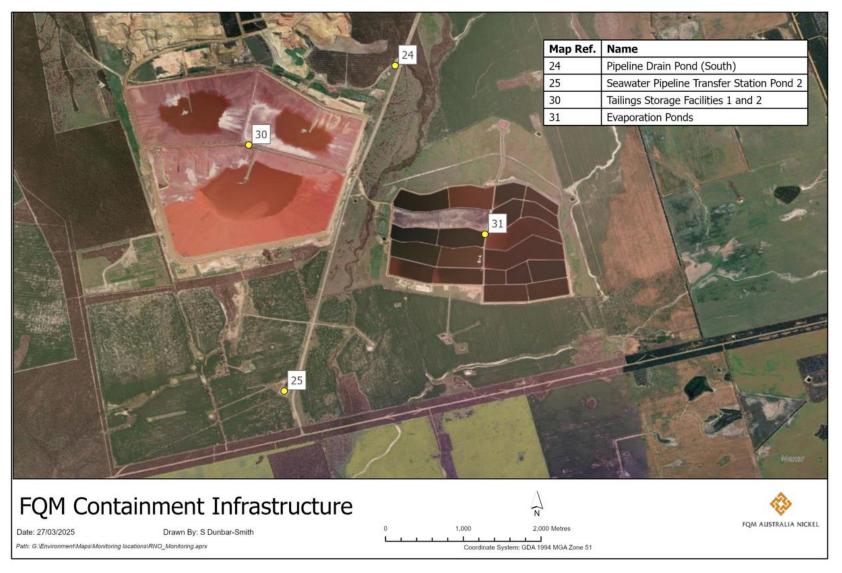


Figure 2b: Site map (southern section) showing locations of process plant containment infrastructure

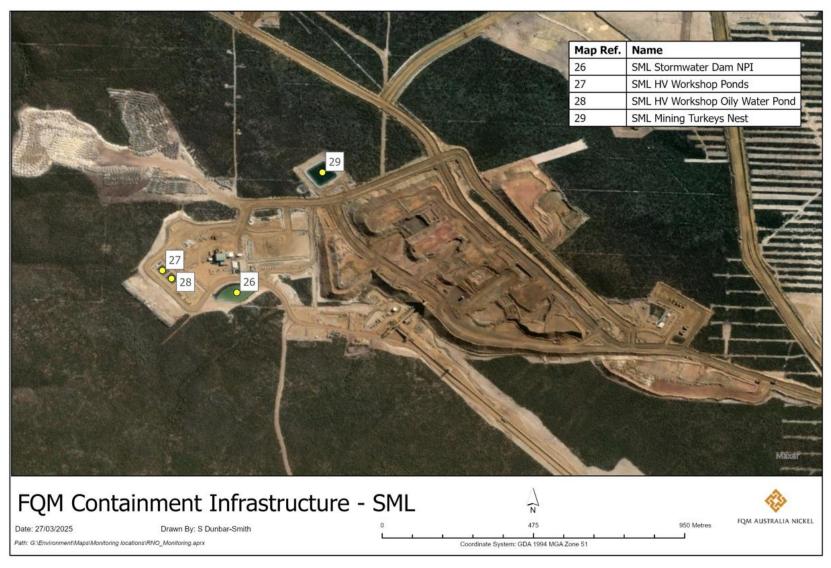


Figure 2c: Site map showing locations of SML containment infrastructure

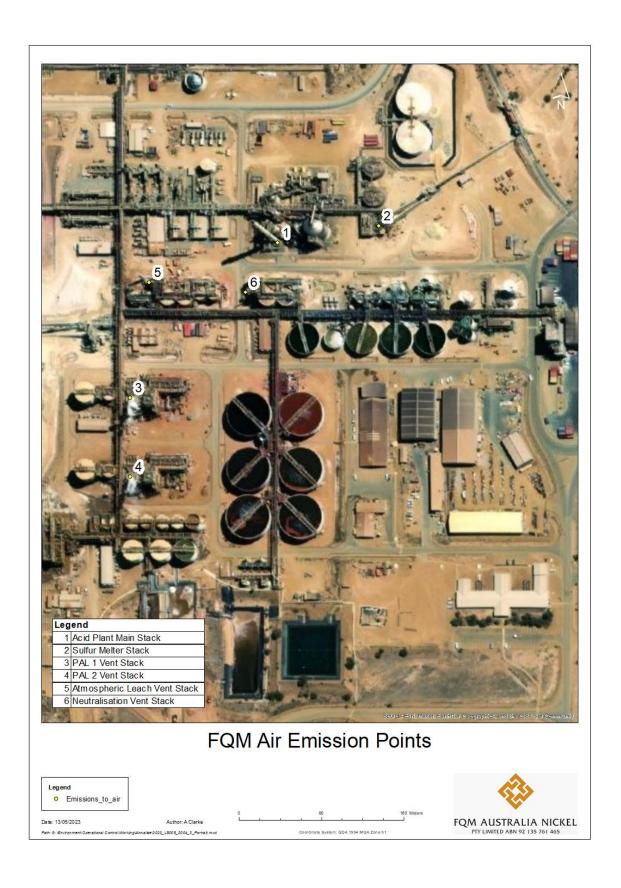


Figure 3: Locations of emission points to air

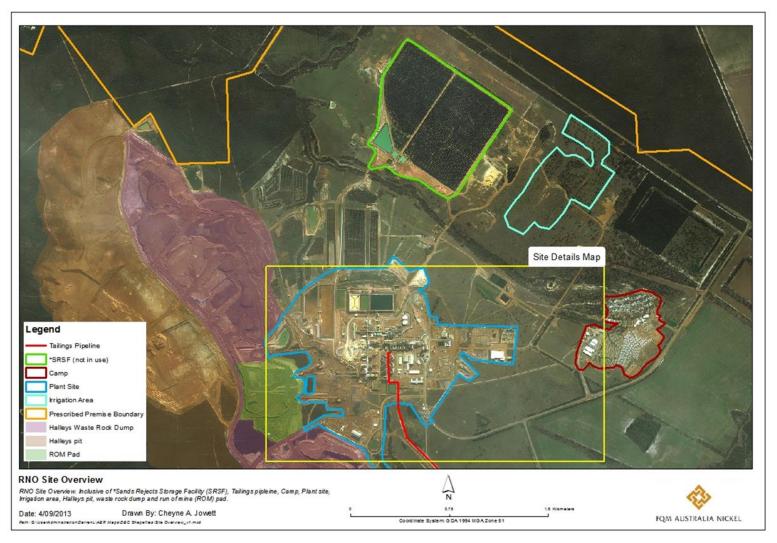


Figure 4: RNO Site overview map showing the location of the WWTP irrigation area in blue



Figure 5: WWTP irrigation area

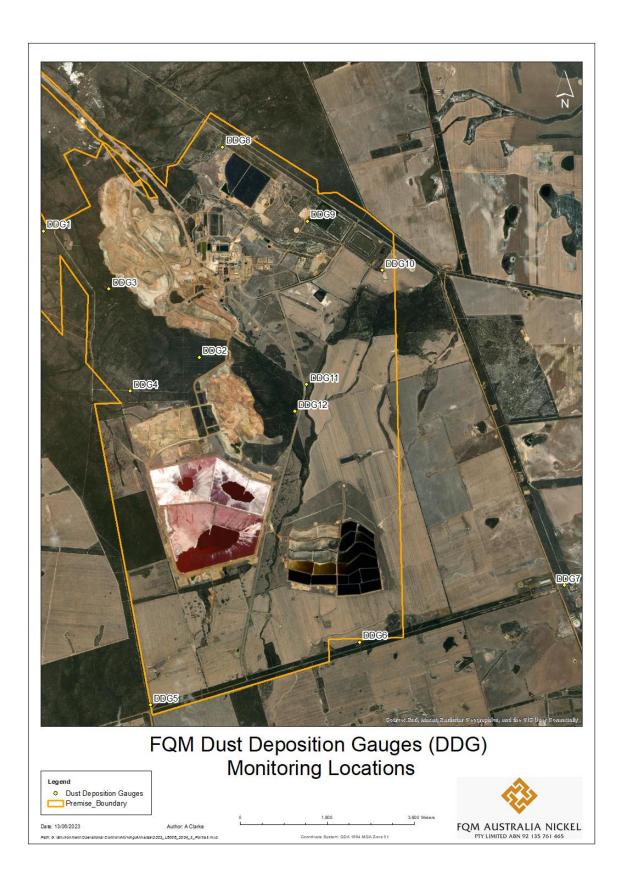


Figure 6: Location of dust deposition gauge (DDG) monitoring locations

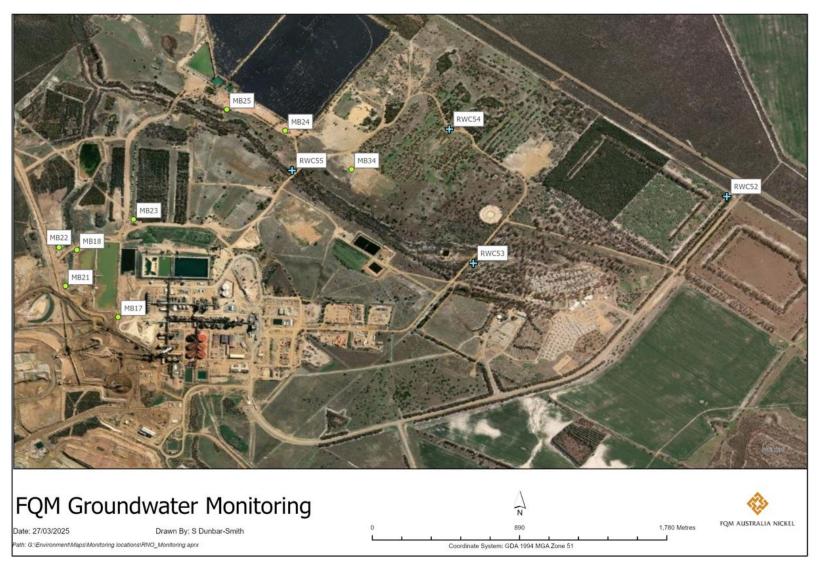


Figure 7a: Locations of groundwater monitoring bores (northern section)

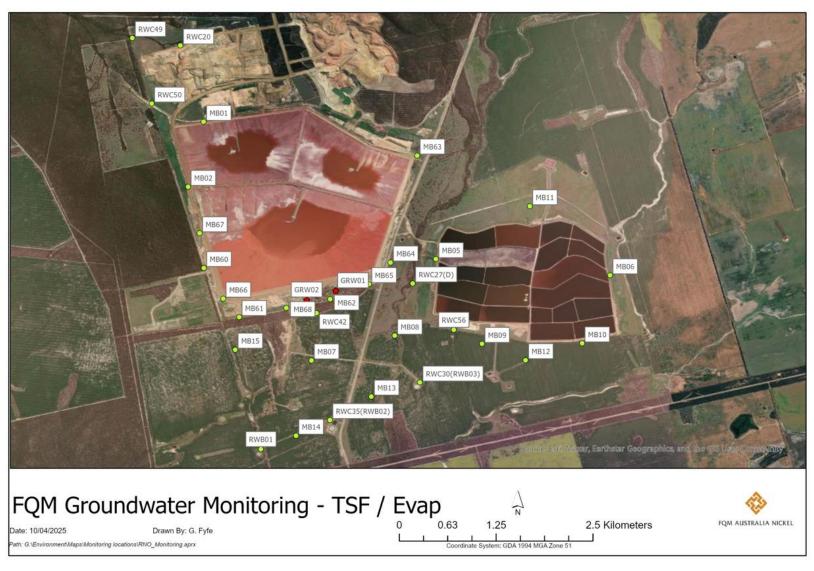


Figure 7b: Locations of groundwater monitoring bores (southern section)

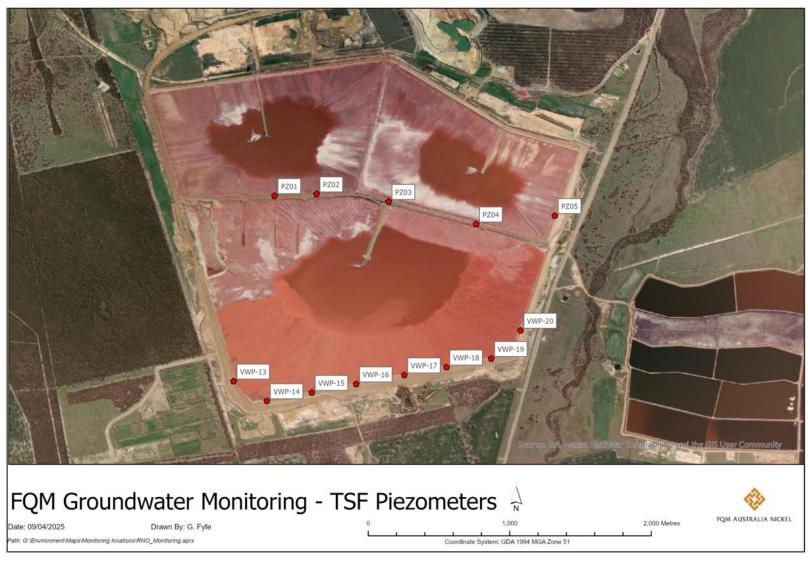


Figure 7c: Locations of groundwater monitoring bores (TSF piezometers)

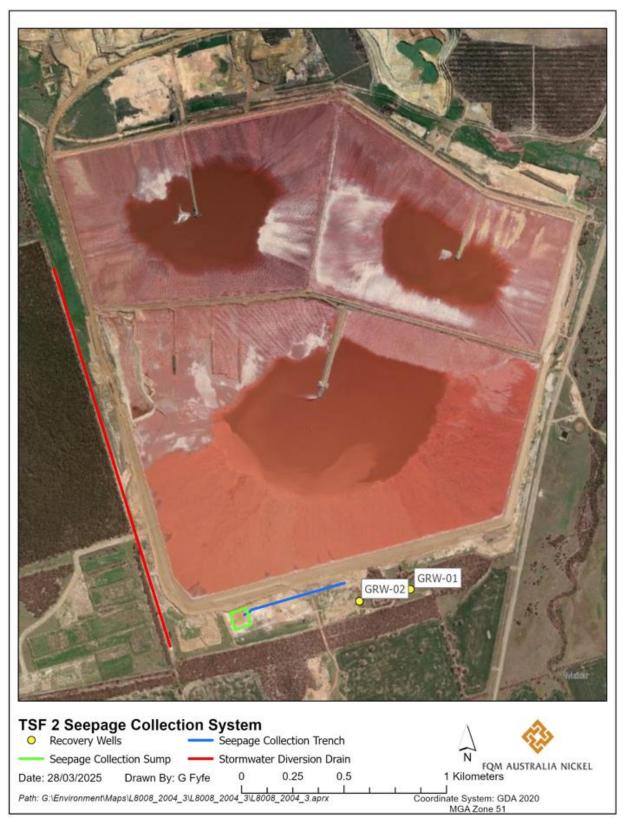


Figure 8: Map demonstrating location of additional seepage recovery wells proposed to be installed

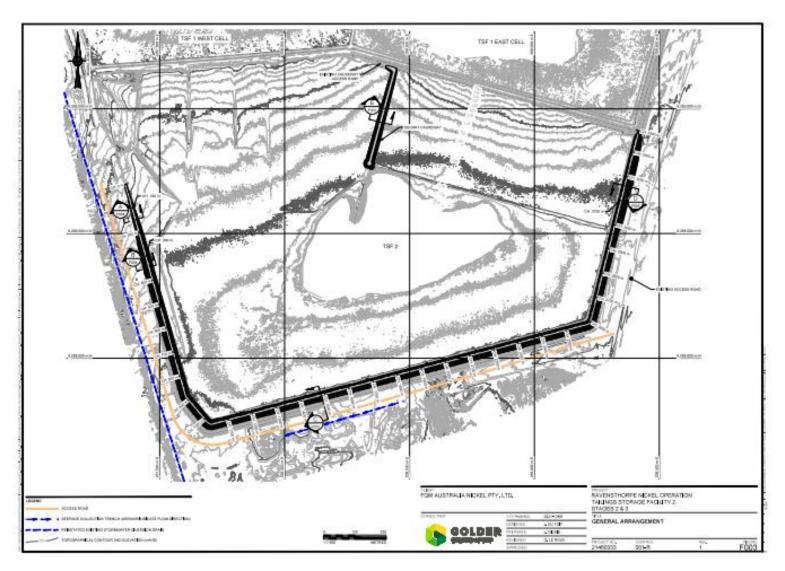


Figure 9 Stormwater and Seepage Management Infrastructure Plan

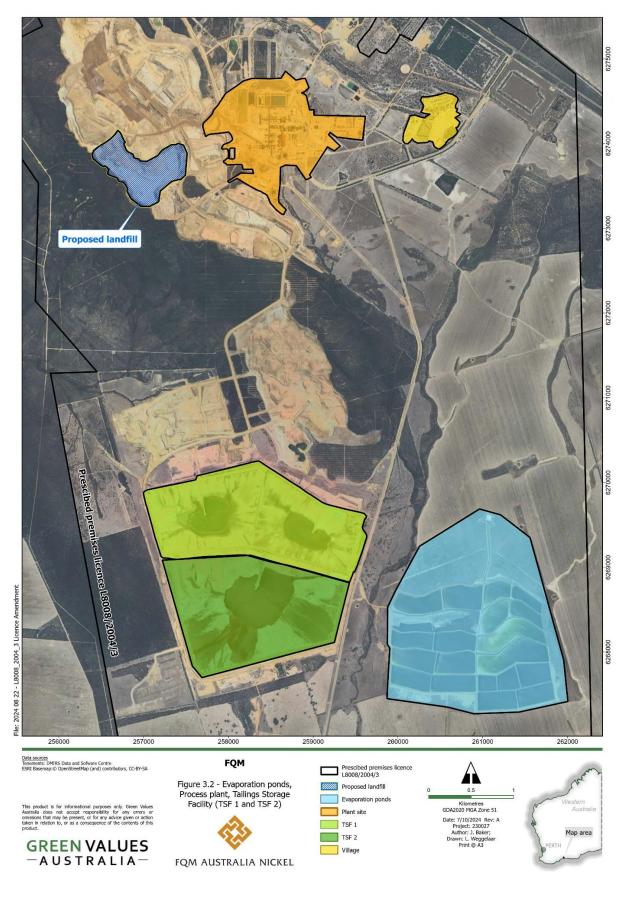


Figure 10: Category 89 landfill location

# Schedule 2: Seepage well and trench construction requirements

The Licence Holder must install seepage recovery infrastructure in accordance with the requirements specified in Table S1.

Table S1: Seepage Recovery Infrastructure – design and construction requirements / installation requirements

| Infrastructure                  | Installation requirements   | Infrastructure location   |
|---------------------------------|---|---|
| Seepage recovery infrastructure | Installed for recovery of seepage so that standing groundwater levels as monitored in condition 36, Table 14 are less than 6 m below ground level | Appropriate location of the infrastructure to be assessed and identified by suitably qualified hydrogeologist, supported by groundwater flow modelling and hydrogeological assessments. |

# **Schedule 3: Notification Forms**

Licence: L8008/2004/3 Licence Holder: FQM Australia Nickel Pty Ltd

Form: N1 Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

- 1.1 These pages outline the information that the operator must provide.
- 2.1 Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

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| Licence Number                 |  |
|--------------------------------|--|
| Name of operator               |  |
| Location of Premises           |  |
| Time and date of the detection |  |

| Notification requirements for the breach of a limit |  |
|---|--|
| Emission point reference/ source                    |  |
| Parameter(s)  |  |
| Limit   |  |
| Measured value                                      |  |
| Date and time of monitoring                         |  |
| Measures taken, or intended to                      |  |
| be taken, to stop the emission                      |  |

| Notification requirements for any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution |  |  |
|---|--|--|
| Date and time of event  |  |  |
| Reference or description of the   |  |  |
| location of the event   |  |  |
| Description of where any release  |  |  |
| into the environment took place   |  |  |
| Substances potentially released   |  |  |
| Best estimate of the quantity or  |  |  |
| rate of release of substances   |  |  |
| Measures taken , or intended to   |  |  |
| be taken, to stop any emission  |  |  |
| Description of the failure or   |  |  |
| accident  |  |  |

## Department of Water and Environmental Regulation

# Part B