



Licence

Environmental Protection Act 1986, Part V

Licensee: GSM Mining Company Pty Ltd

Licence: L8435/2010/3

Registered office: Level 5, 50 Colin Street
WEST PERTH WA 6005

ACN: 165 235 030

Premises address: Granny Smith Gold Mine
Mining tenements M38/18, M38/161, M38/162, M38/167, M38/191,
M38/205, M38/287, M38/380, M38/389, M39/397, M38/440, M38/532,
M38/525, M38/690, M38/691, M38/692, M38/725, L38/50, L38/51,
L38/79, L38/80, L38/87, L38/96, L38/106, L38/144, L38/145, L38/144,
L38/146 and L38/209
LAVERTON WA 6440
as depicted in Schedule 1.

Issue date: Thursday, 3 October 2013

Commencement date: Monday, 7 October 2013

Expiry date: Thursday, 6 October 2018

Prescribed premises category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
5	Processing or beneficiation of metallic or non-metallic ore	50 000 tonnes or more per year	4 500 000 tonnes per annual period
6	Mine dewatering	50 000 tonnes or more per year	10 219 614 kL per annual period
33	Chemical blending or mixing	500 tonnes or more per year	4 000 tonnes per year
52	Electric power generation	10 MW or more in aggregate (using a fuel other than natural gas) 20 MW or more in aggregate (using natural gas)	25 MW diesel 24MW using LNG
54	Sewage facility	100 m ³ or more per day	360 m ³ per day
64	Class II or III putrescible landfill	20 tonnes or more per year	9 500 tonnes per year
73	Bulk storage of chemicals, etc	1 000 m ³ in aggregate	3 004 m ³



Conditions

This Licence is subject to the conditions set out in the attached pages.

Date signed: 7 January 2016

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Tim Gentle

Manager Licensing – Industry Regulation (Resources Industries)

Officer delegated under section 20

of the *Environmental Protection Act 1986*



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Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.



Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

GSM Mining Company Pty Ltd (GSM) currently owns the Granny Smith mine site which is a gold mining and processing operation located in the north-eastern Goldfields region of Western Australia, approximately 23 km south of Laverton. Ore is extracted from the Wallaby underground mine and is processed at the Granny Smith mine processing area. Mining commenced at Granny Smith mine in June 1989 and the life of mine is currently until 2022.

Processing

Ore is hauled from the Wallaby underground operation where it is crushed and the gold is extracted using carbon-in-pulp and carbon-in-leach processes using various chemical processes.

Mine dewatering

Mine dewatering occurs from the Wallaby operation to Lake Carey. The mine dewatering system comprises of a series of dewatering production bores and a input sump. The water from the input and production bores is transferred via surface and buried pipelines to a transfer pond prior to discharge to Lake Carey through the southern discharge system. Nominated production bore water is directly discharged through the western discharge system to assist with recharge of the groundwater levels along the Lake Carey shoreline to the west of Wallaby.

The premises is also subject to conditions set by the Minister for Environment under Part IV of the Environmental Protection Act 1986. The Licensee is required to comply with:

- The requirements of the Ministerial Statement 551; and
- Commitments made in the "Barrick (Granny Smith) Pty Limited Wallaby Environmental Management Plan – Part 1 Hypersaline Management Plan (September 2006)" attached to the Ministerial Statement.

Hypersaline Management Plan Version 3, October 2012, has been assessed by DER as it relates to the underground operations and not the open pit (only the latter is affected by Ministerial Statement 551). An improvement plan was included in the Licence to increase understanding of the effects of mine dewatering to Lake Carey which was complied with by the Licensee and has now been removed.

Chemical blending or mixing

This is essential for the processing and beneficiation of metallic or non-metallic ore. GSM currently uses cyanide, hydrochloric acid, caustic soda and quick lime in the processing plant for Granny Smith mine. The use of these chemicals ensures the safe operation of the processing circuit. The site currently uses over 500 tonnes of chemicals in the processing circuit.

Electric power generation

GSM currently requires diesel fuelled power generation to operate the processing facility, site village, underground operations and any other auxiliary facilities. This ensures the process of gold extraction occurs efficiently and in a safe manner.



Sewage facility

A sewage facility is required to service the village and administration office. In 2013, approval was given to divert the Wallaby sewage to the mine waste water treatment plant (WWTP), which resulted in better waste management onsite. Treated wastewater is discharged to a sprayfield under normal operating conditions and two lagoons are available for use in emergency situations. The WWTP is estimated to discharge approximately 99,000L of effluent per day, however, this fluctuates with the site population.

Class II or III putrescible landfill

The landfill site at Granny Smith is located approximately 3 km to the north east of the mine village. The landfill is constructed on the existing Goanna waste rock dump, east of the decommissioned Goanna pit. The landfill is designed, managed and maintained in accordance with this Licence.

The landfill located at the Wallaby site is an excavated trench system which is progressively filled with Class II putrescible waste and is covered. The Wallaby site produces approximately 4 500 m³ of waste per year.

Bulk storage of chemicals

The operation at Granny Smith mine requires chemical storage to use in the processing and beneficiation of ore. Bulk primary chemicals used include bulk diesel, liquid cyanide, solid cyanide, caustic soda, lime and hydrochloric acid.

This Licence is the result of an amendment sought by the Licensee to discharge TSF seepage water from the TSF 3 seepage trenches into Granny Smith and Goanna open pits. It is also to remove dewatering from the Licence and remove Lake Carey as a discharge point.

This Licence is the result of an amendment sought by the Licensee to construct and operate a new LNG power station. At this time, it has also been identified that GSM's two licenced premises (Granny Smith – L8435/2010/3 and Wallaby – L7454/2000/9) can be merged into one prescribed premises by redescribing the premises boundary area. Upon issuing of this amended Licence, L7454/2000/9 will be revoked.

The proposed 24 MW gas powered station is classified under Category 52, which is currently listed on the Licence due to the existing diesel power station. Other associated infrastructure with the project includes an underground gas pipeline, power station control system, switchboard, transformers, ablutions, store, carpark, access driveways, workshop, office, potable water tank and buried power cables to connect to site distribution network.

The power station will be constructed on Mining Leases M38/397, M38/440 and L38/144. GSM intend on constructing a new 24 MW gas (natural gas) fired reciprocating engine power station initially comprising 22 double stacked containerized generation units and associated balance of plant. The new power station will replace the two existing diesel fired power stations, however, one of these (23.8 MW) will remain available for the supply of backup power in the event of loss of gas supply.

The construction and operation of the power station will be conducted in a staged approach due to the availability of the desired Cummins gas powered generator units:

- Stage 1 – Works commencing on March 2016 to install a total of 22 generators (Cummins QSK60) which are planned to be operational until 30 June 2016.
- Stage 2 – All 22 containerised generators will be removed and replaced with 18 generators (Cummins QSK60) which have been modified as higher capacity units from 1 July 2016 onwards.

GSM have applied for an amendment in November 2015 to raise the existing Cell 1 perimeter embankment crest of the TSF by 2.5m to an elevation of 448 m, known as Stage 1/2D. The internal divider between Cells 1 and 2 was raised during the Cell 2 work in 2013 and it will not be raised again during these works.



The embankment will have a 6 m wide crest (with 2% grade towards the inside crest), a 1V in 3.75H downstream face slope, and an upstream slope of 1V to 2H. A safety berm will be placed on the downstream edge of the raised embankment crest. The Cell 1 decant access causeway will also be raised. It will be constructed from mine waste, 7.5 m wide at the crest, with a safety berm on each side.

The licences and works approvals issued for the Premises for the 5 licences prior to issue of this Licence are:

Instrument log		
Instrument	Issued	Description
L5108/1988/8	06/10/2003	Licence re-issue
L5108/1988/9	06/10/2004	Licence re-issue
W4395/2007/1	19/03/2008	TSF cell 2 raise from RL443m to RL450m
W4588/2009/1	17/12/2009	TSF cell 3 raise from RL424m to RL426.5m
L8435/2010/1	01/04/2010	New licence to replace L5108/1988/9 which ceased due to non-payment of annual fees.
W4788/2010/1	23/12/2010	TSF cell 1 raise by 2.5m to RL445.5m
W4903/2011/1	11/08/2011	TSF cell 2 raise by 2.5m to RL448.5m
L8435/2010/2	01/10/2010	Licence re-issue
W5165/2012/1	07/06/2012	The dewatering from Granny Smith pit, Goanna pit and Windich pit into Lake Carey
W5268/2012/1	18/01/2013	New waste water treatment plant
W5398/2013/1	27/06/2013	TSF cell 3 raise by 2.5m to RL329m
L8435/2010/3	03/10/2013	Licence re-issue
L8435/2010/3	19/03/2015	Licence amendment to new format and to include new discharge points for TSF seepage water
L8435/2010/3	03/09/2015	Licence amended to assess new LNG power station and to merge Licence with L7454/2000/9 Wallaby Project
L8435/2010/3	07/01/2016	Licence amendment to assess TSF Cell 1 lift and update groundwater monitoring bores.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION



Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986*;

'annual period' means the inclusive period from 1 January until 31 December in the same year;

'AS/NZS 5667.1' means the 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 5667.4' means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made*;

'AS/NZS 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

'AS/NZS 5667.12' means the Australian Standard AS/NZS 5667.12 *Water Quality – Sampling – Guidance on sampling of bottom sediments*;

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means:

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au;

'Clean Fill' has the meaning defined in the Landfill Definitions;

'commissioning' means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with the design specification set out in the Licence amendment application;

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'Inert waste Type 1' has the meaning defined in the Landfill Definitions;

'Inert waste Type 2' has the meaning defined in the Landfill Definitions;



'Landfill Definitions' means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Environment as amended from time to time.

'Licence' means this Licence numbered L8435/2010/3 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'NATA' means the 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;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'quarterly' means the 4 inclusive periods from 1 January to 31 March, 1 April to 31 June, 1 July to 31 September and 1 October to 31 December;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'stage 1' means the installation of 22 generators (Cummins QSK60) to be operational until 30 June 2016.

'stage 2' means the removal of the 22 generators from stage 1 and replaced with 18 generators (Cummins QSK60) which have been modified as higher capacity units from 1 July 2016 onwards.

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia; and

"zone of influence" means the area of a receiving environment with the potential to be altered or changed as a result of an emission or discharge.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.

1.2 Premises operation

1.2.1 The Licensee shall ensure that all pipelines containing tailings, decant water, dewatering water and effluent are either:

- (a) 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.

1.2.2 The Licensee shall ensure that tailings, decant water, dewatering water and effluent are only discharged into containment cells, dams and ponds with the relevant infrastructure requirements and at the locations specified in Table 1.2.1.

Table 1.2.1: Containment Infrastructure		
Containment point reference	Material	Infrastructure requirements
TSF 1, 2 and 3	Tailings	Lined with in-situ clay to limit seepage to groundwater
Process water pond	Return water	Lined with HDPE
Lagoons 1 and 2	Waste activated sludge; and Emergency treated wastewater	Compacted clay lined – waste activated sludge to be discharged into one lagoon at a time to allow drying before being appropriately disposed of by landfilling. Approval from CEO to be sought prior to use in emergency situations
Water transfer pond	Mine dewater	HDPE lined embankment foundations and base of water transfer pond are maintained. Embankment level of 4 metres above ground.

- 1.2.3 The Licensee shall manage containment cells and ponds in Table 1.2.1 such that:
- (a) a minimum top of embankment freeboard of 300mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained; and
 - (b) methods of operation minimise the likelihood of erosion of the embankments by wave action.
- 1.2.4 The Licensee shall manage TSFs such that:
- (a) a seepage collection and recovery system is provided and used to capture seepage from the TSF; and
 - (b) seepage is returned to the TSF or re-used in process.
- 1.2.5 The Licensee shall:
- (a) undertake inspections as detailed in Table 1.2.2;
 - (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 record of all inspections undertaken.

Table 1.2.2: Inspection of infrastructure		
Scope of inspection	Type of inspection	Frequency of inspection
Tailings pipelines	Visual integrity	Twice daily
Return water lines	Visual integrity	Twice daily
Water transfer pond	Visual integrity	Daily
Dewatering pipeline	Visual integrity	Daily
Embankment freeboard	Visual to confirm required freeboard capacity is available	Daily
Decant pond	Visual to confirm the size is less than 15% of the surface of each TSF	Daily
Granny pit Goanna pit	Visual to confirm required freeboard capacity is available Visual checks for avifauna deaths	Daily

- 1.2.6 The Licensee shall undertake an annual assessment of vegetation within the zone of influence of any TSF 3. The assessment shall:
- (a) photograph and record the presence and condition of key vegetation features within the zone of influence;



- (b) compare the results of the assessment against previous years assessments and identify whether any deterioration in the presence and/or quality of vegetation has taken place; and
 - (c) be undertaken by a person suitably qualified in vegetation identification and sampling.
- 1.2.7 The Licensee shall undertake an annual water balance for the active TSF. The water balance shall as a minimum consider the following:
- (a) site rainfall;
 - (b) evaporation;
 - (c) decant water recovery volumes;
 - (d) seepage recovery volumes; and
 - (e) volumes of tailings deposited.
- 1.2.8 The Licensee 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.
- 1.2.9 The Licensee shall monitor monthly the health and condition of vegetation located at the irrigation area. An annual report is to be submitted within the Annual Environmental Report on the condition of the vegetation cover at the irrigation area.
- 1.2.10 The Licensee shall ensure that wastes accepted onto the landfill are only subjected to the process(es) set out in Table 1.2.3 and in accordance with any process limits described in that Table.

Table 1.2.3: Waste processing		
Waste type	Process(es)	Process limits ^{1, 2}
Inert Waste Type 1	Disposal of waste by landfilling	<u>All waste types</u> Disposal of waste by landfilling shall only take place within the landfill areas shown on the Landfill Area Maps in Schedule 1. No waste shall be temporarily stored or landfilled within 35 metres of the boundary of the premises. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2m.
Putrescible waste		
Clean Fill		
Used tyres	Storage and burial	Not more than 1 000 tyres shall be stored at the premises at any one time; Used tyre stacks shall not exceed 100 m ² in area and 4 metres in height; Used tyres must be stacked on their side walls or if stored on their treads, area baled with a securing device made from a non-combustible material.
Sewage	Biological and physical treatment	360 m ³ per day

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

Note 2: Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

- 1.2.11 The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.2.4 and that sufficient stockpiles of cover are maintained on site at all times.



Table 1.2.4: Cover requirements¹

Waste Type	Cover requirements
Putrescible wastes	To be covered weekly with sufficient quantities of Type 1 inert waste, clean fill or other appropriate cover material to prevent the spread of fire and harbouring of disease vectors.
Inert Waste Type 1	No cover required
Inert Waste Type 2	A minimum depth of 500 mm of clean fill is maintained over the buried tyres following disposal.

Note 1: Additional requirements for final cover of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

1.2.12 The Licensee shall construct the works to install the new LNG power station in accordance with the documentation detailed in Table 1.2.5:

Table 1.2.5: Construction Requirements¹

Document	Parts	Date of Document
DER Licence amendment (Form P4) Supporting Documentation, Amalgamation of GSM Licences (L8435/2010/3 and L7454/2000/9) and Construction of a Gas Fired Reciprocating Engine Power Station – Category 52, GSM Mining Company Pty Ltd (GSM)	All, including Drawings and Appendices	12 June 2015

Note 1: Where the details and commitments of the documents listed in condition 1.3.14 are inconsistent with any other condition of this licence, the conditions of this licence shall prevail.

1.2.13 The Licensee shall commission each of Stage 1 and Stage 2 of the LNG Power Station, for a period not exceeding 2 months.

1.2.14 The Licensee shall construct the works to raise TSF Cell 1 Stage 1/2D in accordance with the documentation detailed in Table 1.2.6:

Table 1.2.6: Construction Requirements¹

Document	Parts	Date of Document
Cell 1 Tailings Storage Facility Stage 1/2D Raise Licence Amendment, Prepared for Gold Fields Australia, Granny Smith Gold Mine, Prepared by Knight Piesold Pty Limited	All, including Drawings and Appendices	November 2015
Cell 1 Tailings Storage Facility – Stage 1/2D Raise Scope of Work and Technical Specification, Prepared for Gold Fields Australia, Granny Smith Gold Mine, Prepared by Knight Piesold Pty Limited	All, including Drawings and Appendices	November 2015

Note 1: Where the details and commitments of the documents listed in condition 1.2.14 are inconsistent with any other condition of this licence, the conditions of this licence shall prevail.

2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

2.2.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emissions points to air

Emission	Emission Point	Emission	Source, including any abatement
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point reference		point height (m)	
A1	Power station – 11 generators each with an emission stack	9.2	Combustion of diesel to power the turbines
A2	Carbon regeneration kiln stack	13.14	Firing of carbon at approximately 700° to strip any elements that attached to the carbon during the elution stage of processing.
A3	22 generators – Cummins QSK60	2.6	Liquefied natural gas – to be operated until 30 June 2016
	18 generators – Cummins QSK60	2.6	Liquefied natural gas – to be operated from 1 July 2016 onwards

2.3 Point source emissions to surface water

2.3.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.3.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this licence.

Table 2.3.1: Emission points to surface water

Emission point reference	Emission point reference on Map of emission points	Description	Source including abatement
W1	Western discharge point – Lake Carey as shown in Attachment 1	Receiving environment-hypersaline lake	Mine dewater from the underground operation and production bore water is directed to the Transfer Pond prior to discharge to Lake Carey to ensure sufficient retention time to maximise removal of suspended solids. Nominated production bore water is directly discharged through the western discharge system.
W2	Southern discharge point – Lake Carey as shown in Attachment 1		

2.4 Point source emissions to groundwater

2.4.1 The Licensee shall ensure that where waste is emitted to groundwater from the emission points in Table 2.4.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.4.1: Emission points to groundwater

Emission point reference on Map of emission points	Description	Source including abatement
Granny Smith pit	Discharge to pit lake in previously mined out open pit	Seepage water from TSF 3 seepage interception trenches
Goanna pit	Discharge to pit lake in previously mined out open pit	Seepage water from TSF 3 seepage interception trenches

2.4.2 The Licensee shall not cause or allow point source emissions to groundwater that do not meet the limits listed in Table 2.4.2



Table 2.4.2: Point source emission limits to groundwater

Emission point reference	Parameter	Limit (including units)	Averaging period
Granny Smith pit	Standing water level	At least 3 m below crest level	Spot sample
Goanna pit	Standing water level	At least 3 m below crest level	Spot sample

2.5 Emissions to land

2.5.1 The Licensee shall ensure that where waste is emitted to land from the emission points in Table 2.5.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.5.1: Emissions to land

Emission point reference	Emission point reference on Map of emission point	Description	Source including abatement
L1	Spray field	Pipe feeding irrigation 72 ha of native vegetation	Treated wastewater from sewage plant

2.5.2 The Licensee shall not cause or allow emissions to land that do not meet the limits listed in Table 2.5.2.

Table 2.5.2: Emission limits to land

Emission point reference	Parameter	Limit (including units)	Averaging period
L1	Biochemical oxygen demand (BOD)	<20 mg/L	Spot sample
	Total suspended solids (TSS)	<30 mg/L	
	Total nitrogen (TN)	<50 mg/L	
	Total phosphorous (TP)	<12 mg/L	
	Thermotolerant coliforms (including <i>E.coli</i>)	<1000 cfu/100mL	
	pH	6.5 – 8.5	

3 Monitoring

3.1 General monitoring

3.1.1 The licensee shall ensure that:

- all water samples are collected and preserved in accordance with AS/NZS 5667.1;
- all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
- all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9 as relevant;
- all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
- all sediment sampling is conducted in accordance with AS/NZS 5667.12;
- all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

3.1.2 The Licensee shall ensure that:

- monthly monitoring is undertaken at least 15 days apart; and
- quarterly monitoring is undertaken at least 45 days apart;

3.2 Monitoring of point source emissions to air



- 3.2.1 During commissioning of the LNG Power Station, the Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to air			
Emission point reference	Parameter	Units ¹	Method
Stage 1: From the emission stacks of at least 3 LNG engines	Volumetric flow rate	m ³ /s	USEPA Method 2
	Particulates	mg/m ³	USEPA Method 5 or USEPA Method 17
	Sulfur dioxide	mg/m ³	USEPA Method 6
	Nitrogen oxides	mg/m ³	USEPA Method 7E or 7D
	Carbon monoxide	mg/m ³	USEPA Method 10
Stage 2: From the emission stacks of at least 5 LNG engines	Volumetric flow rate	m ³ /s	USEPA Method 2
	Particulates	mg/m ³	USEPA Method 5 or USEPA Method 17
	Sulfur dioxide	mg/m ³	USEPA Method 6
	Nitrogen oxides	mg/m ³	USEPA Method 7E or 7D
	Carbon monoxide	mg/m ³	USEPA Method 10

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.

3.3 Monitoring of point source emissions to surface water

- 3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of point source emissions to surface water				
Emission point reference	Parameter		Units	Frequency
W1 and W2	Discharge water	pH	pH units	Quarterly (ending February, May, August and November)
		Total Dissolved Solids	mg/L	
		Total Suspended Solids	mg/L	
		Copper (Cu), Sodium, (Na), Chloride (Cl), Aluminium (Al), Cadmium (Cd), Iron (Fe), Magnesium (Mg), Calcium (Ca), Potassium (K), Manganese (Mn), Selenium (Se), Cobalt (Co), Lead (Pb), Copper (Cu), Nickel (Ni), Zinc (Zn), Arsenic (As), Chromium (Cr)	mg/L	

3.4 Monitoring of point source emissions to groundwater

- 3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table.

Table 3.4.1: Monitoring of point source emissions to groundwater				
Emission point reference	Parameter	Limit	Units	Frequency



GMB1 – GMB4	pH ¹	-	pH units	Quarterly
	SWL	-	mbgl	
	Total dissolved solids	-	mg/L	
	Total suspended solids	-		
	Weak acid dissociable cyanide and Total Cyanide ²	0.5 mg/L WAD CN 1 mg/L Total cyanide		
	chloride, sulphate, bicarbonate, nitrate	-		
	calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium and nickel	-		
Goanna pit water	Pit lake elevation	419 mRL	mAHD	Quarterly
	pH ¹	6-8	-	
	Weak acid dissociable cyanide and Total Cyanide ²	0.5 mg/L WAD CN 1 mg/L Total cyanide	mg/L	
Granny pit water	Pit lake elevation	415 mRL	mAHD	Quarterly
	pH ¹	6-8	-	
	Weak acid dissociable cyanide and Total Cyanide ²	0.5 mg/L WAD CN 1 mg/L Total cyanide	mg/L	

Note 1: In-field non-NATA accredited analysis permitted

Note 2: ISO-5667.3 2012 sampling methods permitted.

3.5 Monitoring of emissions to land

3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Monitoring of emissions to land			
Emission point reference	Parameter	Units	Frequency
L1	Biochemical oxygen demand	mg/L	Monthly
	Total suspended solids	mg/L	
	Total nitrogen	mg/L	
	Total phosphorous	mg/L	
	Thermotolerant coliforms (including <i>E.coli</i>)	cfu/100 mL	
	pH ¹	-	
	Effluent flow rate	kL/day	Continuous

Note 1: In-field non-NATA accredited analysis permitted

3.6 Process monitoring

3.6.1 The Licensee shall undertake the monitoring in Table 3.6.1 according to the specifications in that table.

Table 3.6.1: Process monitoring					
Process description	Parameter	Limit	Units	Frequency	Method
Tailings deposition	Volumes of tailings deposited into the TSF	-	tonnes	Continuous	None specified
	Volumes of water recovered from the TSF	-			
	Volumes of seepage recovered and reused to	-			



	Process Plant				
Seepage discharge from TSF Trench I	Cumulative volumes of seepage discharged to Goanna Pit	-	kL	Continuous	None specified
	Cumulative volumes of seepage discharged to Granny Pit	-			
	pH ¹	6-8	-	Quarterly	Spot sample

Note 1: In-field non-NATA accredited analysis permitted

3.7 Ambient environmental quality monitoring

3.7.1 The Licensee shall undertake the monitoring in Tables 3.7.1 and 3.7.2 according to the specifications in that table-

Table 3.7.1: Monitoring of ambient groundwater environmental quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
TSF cell one: MB13 TSF cell two: MB22, MB26 and MB27 TSF cell three: MB29, MB30, MB31, MB32, MB33, MB36, MB37, MB39, MB40, MB46, MB48, MB50, MB52, MB53, MB53, MB56, MB57, MB58, MB62, MB63, MB64, MB65, MB66, MB67, PB1, PB2, PB3 and PB4	Standing water level	mbgl	Spot sample	Quarterly
	pH ¹	pH units		
	Electrical conductivity	µS/cm		
	Total dissolved solids	mg/L		
	Total cyanide ²			
	Weak acid dissociable cyanide ²			
	Chloride, sulphate, bicarbonate, nitrate			
	Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel			
MB25, MB38, MB49, MB51, MB54, MB55, MB59, MB60, MB61, MB68 and MB69	Standing water level	mbgl	Spot sample	Annually
	pH ¹	pH units		
	Electrical conductivity	µS/cm		
	Total dissolved solids	mg/L		
	Total cyanide ²			
	Weak acid dissociable cyanide ²			
	Chloride, sulphate, bicarbonate, nitrate			
	Calcium, magnesium, sodium, potassium, lead, zinc, iron, copper, aluminium, cadmium, cobalt, chromium, nickel			

Note 1: In-field non-NATA accredited analysis permitted.

Note 2: ISO-5667.3 2012 sampling methods permitted.

Table 3.7.2: Monitoring of ambient sediment quality

Monitoring point reference	Parameter	Units	Frequency
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and location			
W1 and W2	Total crust thickness	mm	Annual
	pH ¹	pH units	Annual
	Total discharge volumes	kL	Monthly
	Discharge rates	L/s	Continuous
	Copper (Cu), Sodium, (Na), Chloride (Cl), Aluminium (Al), Cadmium (Cd), Iron (Fe), Magnesium (Mg), Calcium (Ca), Potassium (K), Manganese (Mn), Selenium (Se), Cobalt (Co), Lead (Pb), Copper (Cu), Nickel (Ni), Zinc (Zn), Arsenic (As), Chromium (Cr)	mg/L	Annual

Note 1: In-field non-NATA accredited analysis permitted.

4 Information

4.1 Records

- 4.1.1 All information and records required by the Licence shall:
- be legible;
 - if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - except for records listed in 5.1.1(d) 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
 - for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - off-site environmental effects; or
 - matters which affect the condition of the land or waters.
- 4.1.2 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 4.1.3 The Licensee 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.

4.2 Reporting

- 4.2.1 The Licensee 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 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form ¹
-	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
Table 3.3.1	Monitoring of point source emissions to surface water	None specified
Table 3.4.1	Monitoring of point source emissions to groundwater	None specified



Table 3.5.1	Monitoring of emissions to land	None specified
Table 3.6.1	Process monitoring and target exceedances	None specified
Table 3.7.1	Ambient groundwater quality monitoring	None specified
Table 3.7.2	Ambient sediment quality monitoring	
-	TSF Cell three seepage management update report	None specified
N/A	Annual report addressing the environmental effects of mine dewater discharge to Lake Carey.	None specified
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

- 4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
- any relevant process, production or operational data; and
 - an assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets.

- 4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form ¹
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties

Note 1: Forms are in Schedule 2

4.3 Notification

- 4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
2.1.1	Breach of any limit specified in the Licence	No later than 5pm of the next usual working day.	N1

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

- 4.3.2 The Licensee shall submit a compliance document to the CEO, following the construction of the works listed in conditions 1.3.14 and 1.3.16 and prior to commissioning of the same.
- 4.3.3 The compliance documents shall:
- certify that the works were constructed in accordance with the conditions of the Licence;
 - be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.



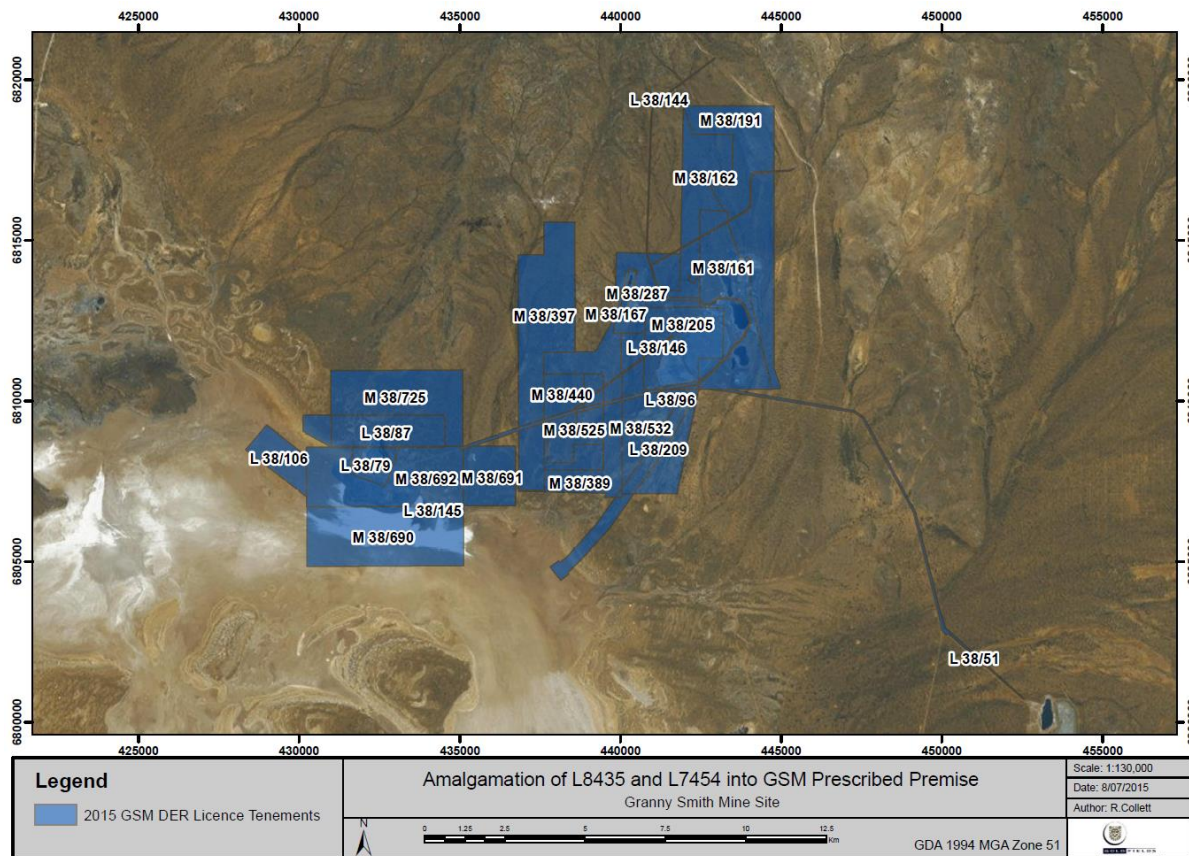
- 4.3.4 The Licensee shall submit a commissioning report for the LNG Power Station, to the CEO within 3 months of the completion of commissioning.
- 4.3.5 The Licensee shall ensure the commissioning report includes;
- (a) a list of any original monitoring reports submitted to the Licensee from third parties for the commissioning period;
 - (b) a summary of the environmental performance of the LNG Power Station as installed, against the design specification set out in the amendment application; and
 - (c) where they have not been met, measures proposed to meet the design specification, together with timescales for implementing the proposed measures.



Schedule 1: Maps

Premises map

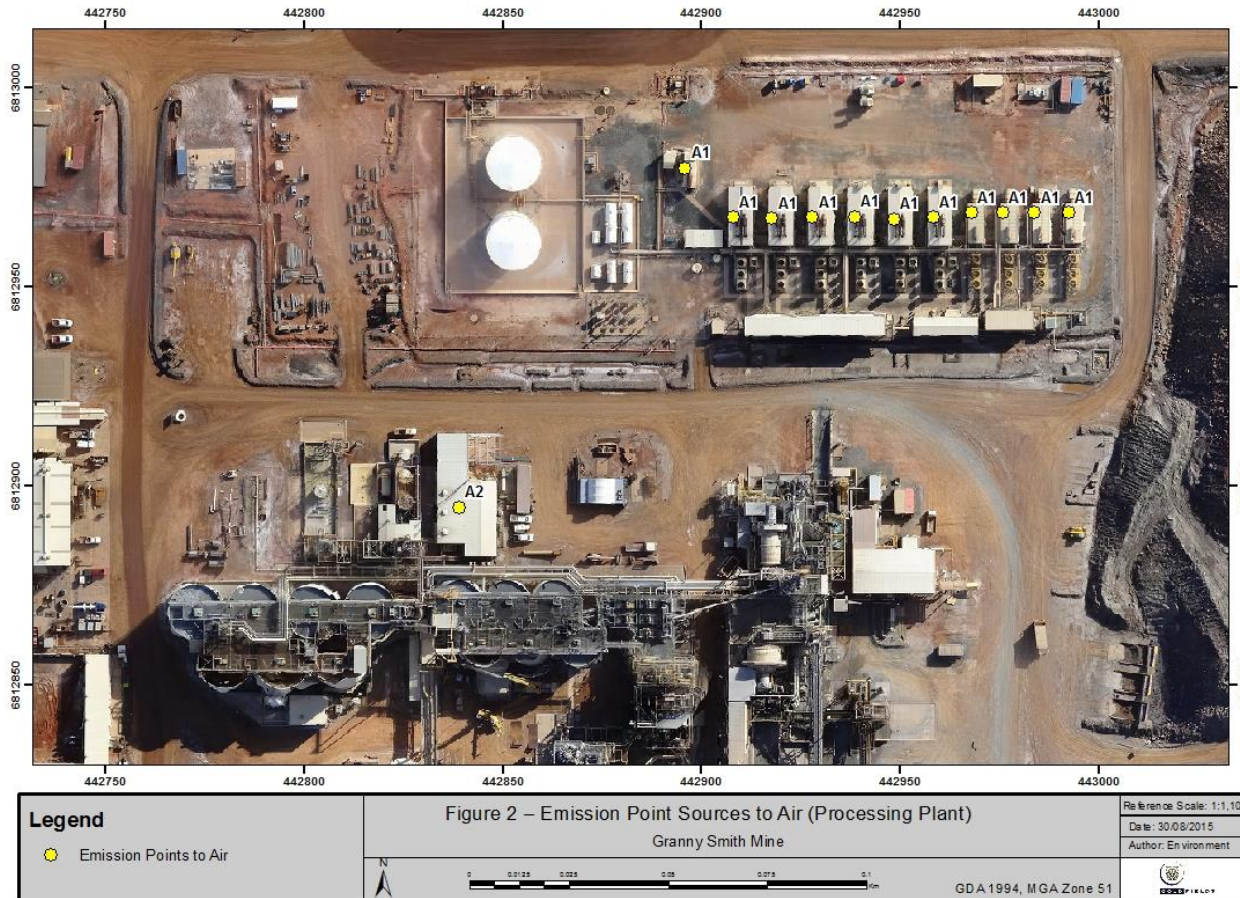
The Premises is shown in the map below. The blue shading depicts the Premises boundary.





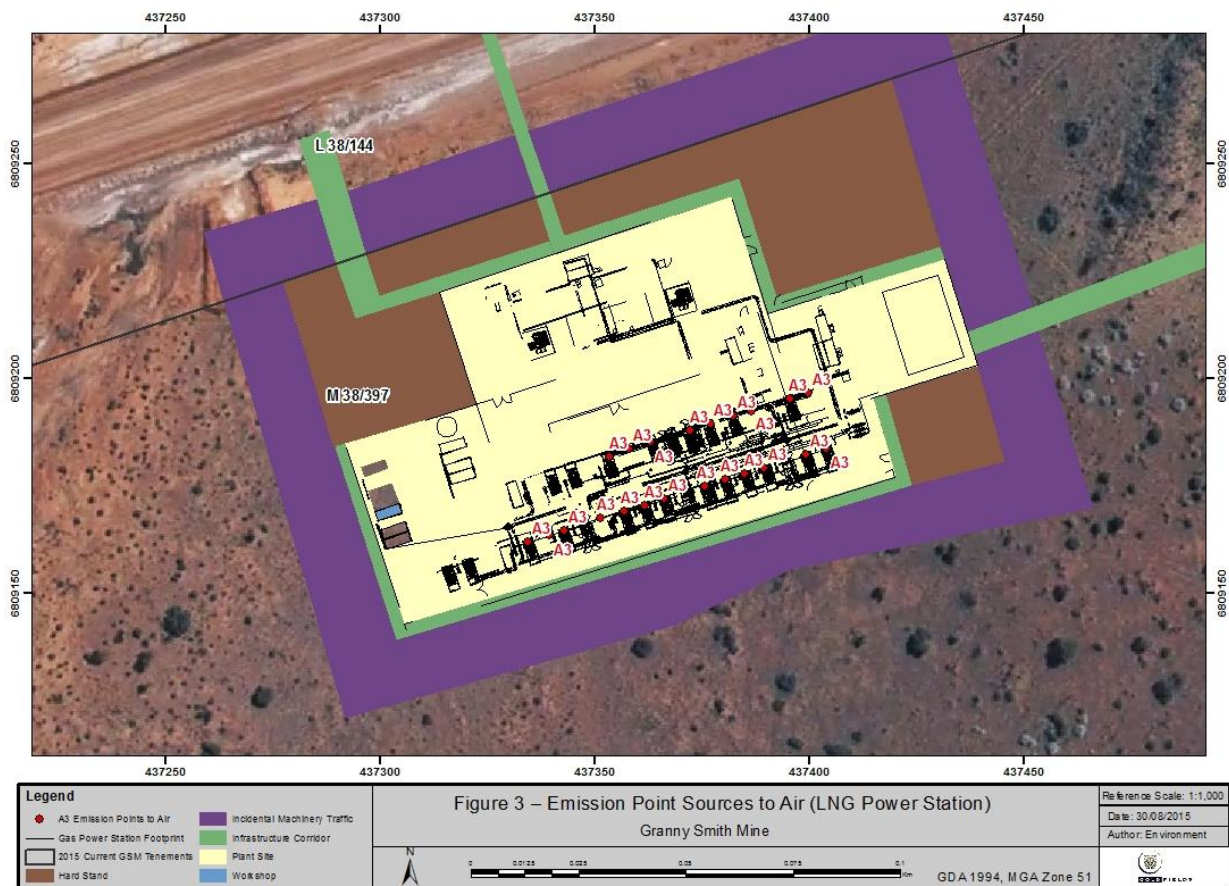
Map of emission points

The locations of the emission points defined in Table 2.2.1 are shown below.





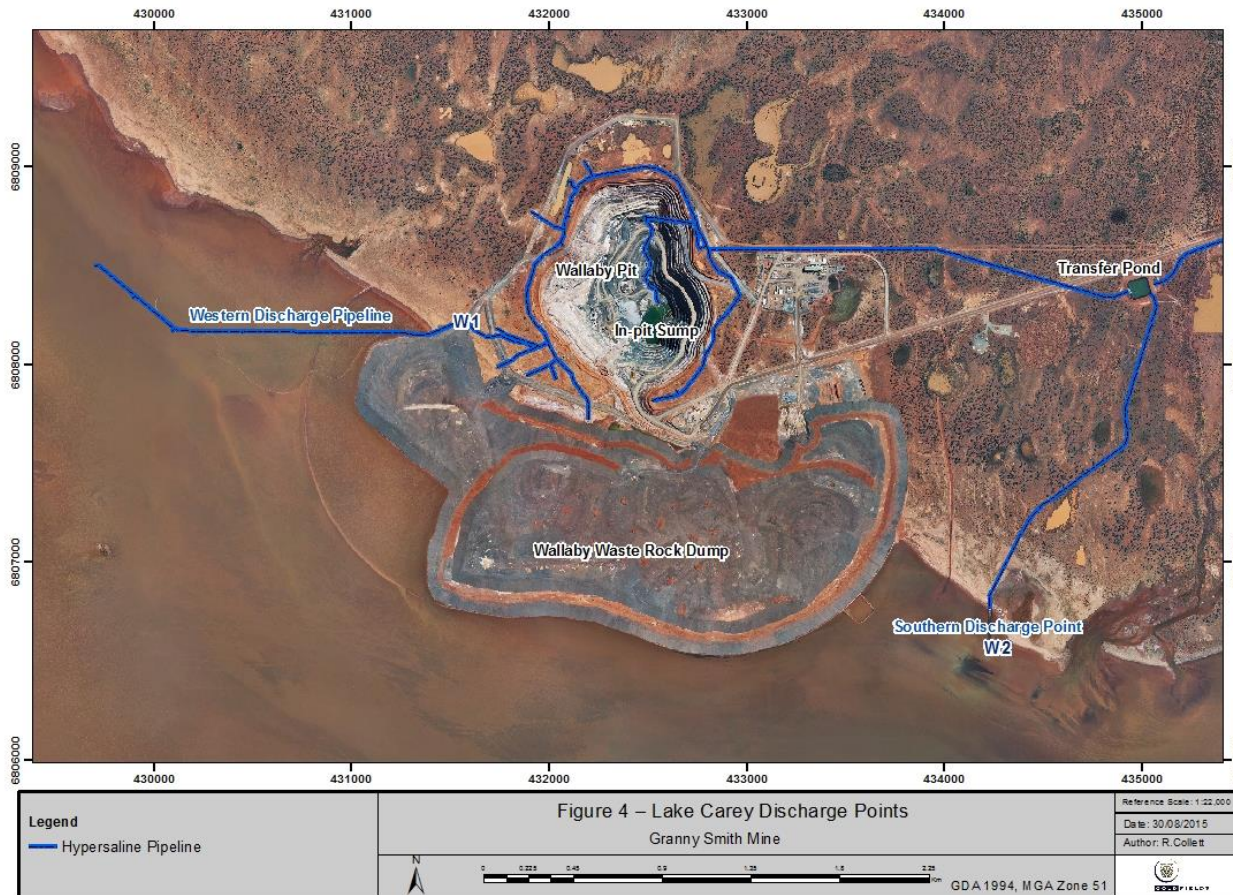
The locations of the emission points defined in Table 2.2.1 are shown below.





Map of emission points and monitoring locations

The locations of the emission points defined in Tables 2.3.1 and monitoring points defined in Tables 3.3.1 are shown below.





Map of emission points

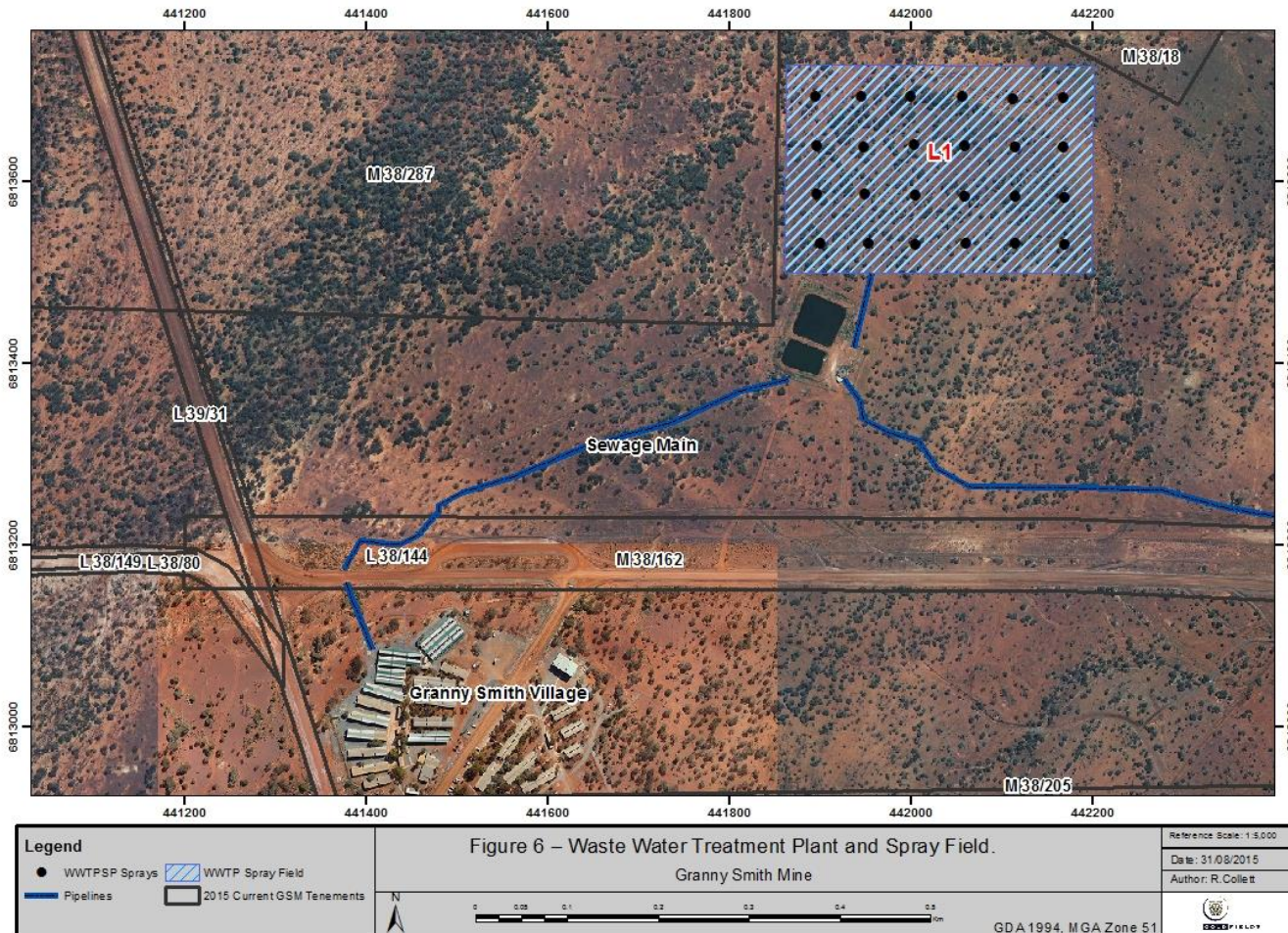
The locations of the emission points defined in Table 2.4.1 are shown below.





Map of emission points

The locations of the emission points defined in Tables 2.5.1 and 3.5.1 are shown below.





Map of monitoring locations

The locations of the monitoring points defined in Table 3.8.1 are shown below.





Map of monitoring locations

The locations of the monitoring points defined in Table 3.4.1 are shown below.





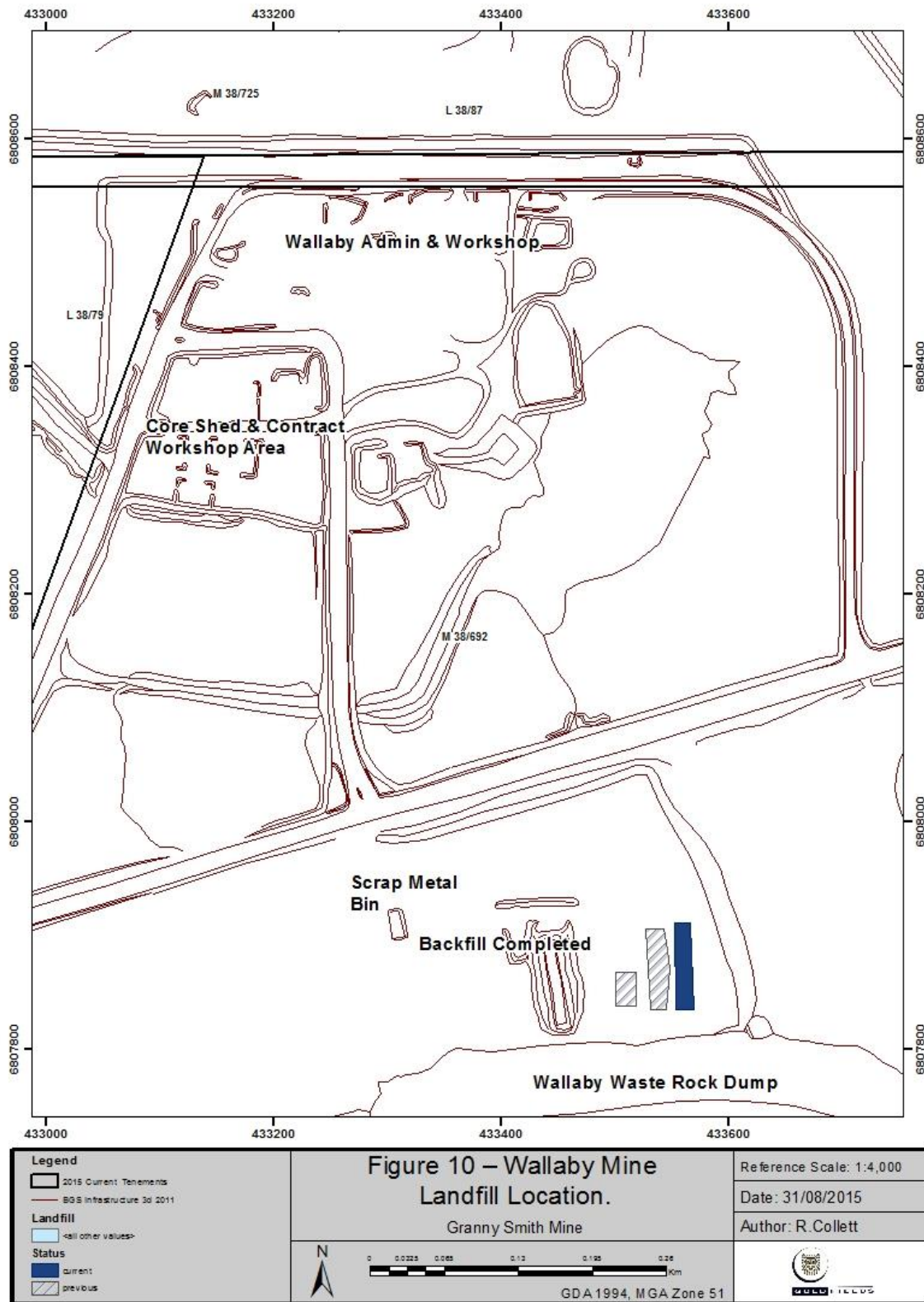
Map of landfill

The location of the landfills defined in Table 1.3.5 are shown below.





The location of the landfills defined in Table 1.3.5 are shown below.





Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:



SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____	<input type="checkbox"/> No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____

SEAL (if signing under seal)

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____



Licence: L8435/2010/3
Form: N1

Licensee: GSM Mining Company Pty Ltd
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.

These pages outline the information that the operator must provide.

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.

Part A

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	



Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of GSM Mining Company Pty Ltd	
Date	