Government of Western Australia
Department of Environment Regulation

Licence

Environmental Protection Act 1986, Part V

Licensee: Agnew Gold Mining Company Pty Ltd

Licence: L4611/1987/11

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

ACN: 098 385 883

Premises address: Agnew Gold Mine
Mining tenements M36/27, M36/32, M36/53, M36/55, M36/65, M36/150, M36/174, M36/248, M36/314, M36/450 and L36/174
LEINSTER WA 6437
As depicted in Schedule 1 of the licence.

Issue date: Thursday, 17 October 2013

Commencement date: Friday, 18 October 2013

Expiry date: Monday, 17 October 2022

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: premises on which – (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	50 000 tonnes or more per year	1 300 000 tonnes per annual period
6	Mine dewatering: premises on which water is extracted and discharged to the environment to allow mining of ore.	50 000 tonnes or more per year	1 200 000 tonnes per annual period
89	Putrescible landfill site: premises on which waste as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial.	More than 20 but less than 5 000 tonnes per year	4 000 tonnes per annual period

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

Date signed: 26 May 2016
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Tim Gentle
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Contents

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

Agnew Gold Mining Company Pty Ltd is wholly owned by Goldfields Limited; an international producer of gold with operating mines in Australia, Ghana, Peru and South Africa. Agnew Gold has operated its Agnew Gold Mine (Agnew) under this licence since October 2013.

Agnew Gold Mine is located approximately 26km south-west of Leinster, in Western Australia. Agnew consists of the Genesis, New Holland and Waroonga underground mine operations with groundwater abstracted and pumped to the surface for discharge within the Premises boundary. Agnew discharges settled water from the Waroonga and New Holland underground to the Hidden Secret Pit (via settlement ponds). SongVang open pit dewatering is directed to settling ponds prior to use for dust suppression and in the site office. Any extra dewater is pumped to the Hidden Secret Pit via settlement ponds. The operators of the nearby Vivien Pit, also discharge their mine dewater into Hidden Secret Pit.

Two borefields, Fairyland and New Woman, are used as a water supply source. Borefield water is pumped via pipelines or trucked to site. Water is also used from Hidden Secret, Daisy Queen and Song Vang pits. Water is utilised in the process plant, for dust suppression, drinking water and in site offices. The operation rely on groundwater from fractured rock aquifers and dewatering activities for water supply that are subject to the terms and conditions of groundwater licenses managed by the Department of Water.

Agnew's Emu process plant uses a carbon-in-leach (CIL) process to separate gold from primary ores. Ore is milled and mixed with chemicals to form slurry which is passed through a leach and absorption circuit.

Tailings (processing wastes) are pumped along a bunded pipeline corridor to Redeemer In-pit Tailings Storage Facility (TSF). The tailings are discharged in a manner that maximises solids consolidation and recovery of process water. To ensure the TSF maintains compliance with the International Cyanide Management Code (ICMC), the tailings have a cyanide concentration less than 50 parts per million (ppm) when discharged.

Agnew has three landfill locations:

- an inert waste (Type 1 and 2) landfill on top of New Holland Waste Rock Landform;
- a combined putrescible and inert waste (Type 1 and 2) landfill in Waroonga landfill; and
- a special wastes (Type 1 and 2) landfill at Redeemer Waste Rock Landform (asbestos and biomedical containers).

A biomax microbial waste water treatment facility operates at Waroonga, with treated water discharged onto the nearby waste rock landform. In Waroonga and New Holland Underground, chemical toilets are used and emptied on a regular basis by a licensed offsite contractor for disposal. Septic tanks are used at New Holland and EMU plant area and are emptied if required.

AGM has been assessed as a "prescribed premises" under category 5 (processing or beneficiation of metallic or non-metallic ore), 6 (mine dewatering) and 89 (putrescible landfill site) under Schedule 1 of the *Environmental Protection Regulations 1987.*

May 2016 Amendment

This licence amendment is proponent initiated to add mining tenements from adjacent Lawlers Gold Mine Licence (L5110/1988/10), specifically to add the tenements for the New Holland

underground operation and therefore add category 6 to the Licence. The amendment of tenements has also resulted in the revision and replacement of Schedule 1 maps and figures. This amendment also includes the approval to increase the size of the Redeemer, New Holland and Waroonga landfills plus an opportunity to address redundant conditions and align this licence with the new licence format.

The licences and works approvals issued for the premises since 23/08/2004;

Instrument log		
Instrument	**Issued**	**Description**
L4611/1987/9	23/08/2004	Licence reissue for 5 years tenure.
W4029/2014/1	13/09/2004	Works approval for construction of Acid Plant completed and closed.
L4611/1987/10	15/10/2009	Licence reissue for 4 years tenure.
W5236/2012/1	1/11/2012	Works Approval for construction of Waroonga Landfill completed and closed.
L4611/1987/11	17/10/2013	Licence transfer and reissue with 5 year tenure.
W5768/2014/1	19/02/2015	Works Approval for construction of replacement landfill for Waroonga and New Holland still current.
L4611/1987/11	26/05/2016	Licence amendment – Addition of mining tenements from L5110 and prescribed activity category 6. Abandoned monitoring bores and redundant licence conditions were removed plus alignment to most recent licence format.

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;*

'acceptance criteria' has the meaning defined in Landfill Definitions;

'annual period' means the inclusive period from 1 January until 31 December in the following 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 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters;*

'clean fill' has the meaning defined in Landfill Definitions;

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

'CEO' for the purpose of correspondence means;

Chief Executive Officer
Department Administering the Environment Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: info@der.wa.gov.au

'contaminated solid waste' has the meaning defined in Landfill Definitions;

'controlled waste' has the definition in Environmental Protection (Controlled Waste) Regulations 2004;

'environmentally hazardous materials' means material (either solid or liquid raw material, materials in the process of manufacture, manufactured products, products used in the manufacturing process, by-products and waste) which if discharged into the environment from or within premises may cause pollution of environmental harm;

'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 Landfill Definitions;

'inert waste type 2' has the meaning defined in Landfill Definitions;

'hardstand' means a surface with a permeability of 10^{-9} metres/second or less;

'Licence' means this licence numbered L4611/1987/11 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 April to 30 June, 1 July to 30 September, 1 October to 31 December and in the following year, 1 January to 31 March;

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

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

'six monthly' means the 2 inclusive periods from 1 April to 30 September and 1 October to 31 March in the following year;

'special waste type 1' has the meaning defined in Landfill Definitions;

'special waste type 2' has the meaning defined in Landfill Definitions;

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

'TSF' means Tailings Storage Facility.

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.

1.2 Premises operation

1.2.1 The Licensee shall ensure that tailings, decant water, dewater effluent and hydrocarbon contaminated soil are only discharged into containment cells and/or a turkey's nest with the relevant infrastructure requirements and at the locations specified in Table 1.2.1 and identified in Schedule 1.

Table 1.2.1: Containment infrastructure

Vessel or compound	Material	Requirements
Redeemer In-Pit TSF3	Tailings	In-pit facility with monitoring bore network to identify any environmental impacts Operate to final height of 472 m RL (2 m below surrounding surface).
TSF2[1]	Tailings	Lined with 200mm of compacted clay.

Waroonga Turkeys Nest	Mine dewater from Waroonga underground operations	Lined with 200mm of compacted clay, or 150mm of compacted clay and 1.5mm HDPE liner to achieve a permeability of $<10^{-9}$m/s or equivalent
New Holland Turkeys Nest	Mine dewater from New Holland underground operations	Lined with 200mm of compacted clay, or 150mm of compacted clay and 1.5mm HDPE liner to achieve a permeability of $<10^{-9}$m/s or equivalent
TSF2 Process Water Pond	Redeemer In-Pit TSF return water and Song Vang pit water	Lined with 200mm of compacted clay, or 150mm of compacted clay and 1.5mm HDPE liner to achieve a permeability of $<10^{-9}$m/s or equivalent
Redeemer TSF Return Pond	Redeemer In-Pit TSF Return water	Lined with 200mm of compacted clay, or 150mm of compacted clay and 1.5mm HDPE liner to achieve a permeability of $<10^{-9}$m/s or equivalent
Hidden Secret Pit	Mine dewater from Waroonga, Genesis, New Holland and Vivien underground operations. Mine dewater from SongVang Pit	In-pit facility with water discharge monitoring to identify any environmental impacts
SongVang Turkeys Nest	SongVang pit water	Lined with 200mm of compacted clay, or 150mm of compacted clay and 1.5mm HDPE liner to achieve a permeability of $<10^{-9}$m/s or equivalent
New Holland Bioremediation pad	Hydrocarbon contaminated soil	Hydrocarbon contaminated material are either put in bioremediation area or taken off site by a licenced contractor. Any contaminated runoff from the treatment cell is contained.
Waroonga Bioremediation pad	Hydrocarbon contaminated soil	Hydrocarbon contaminated material are either put in bioremediation area or taken off site by a licenced contractor. Any contaminated runoff from the treatment cell is contained.

Note 1: TSF2 currently decommissioned and not operational.

1.2.2 The Licensee shall manage containment infrastructure in Table 1.2.1 such that a minimum top of embankment freeboard of 300mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained.

1.2.3 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; 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**
Mine dewater pipelines	Visual integrity	Daily when operating or weekly

Tailings delivery pipelines	Visual integrity	when not operating.
Tailings return water lines	Visual integrity	
Tailings deposition	Visual assessment of beaching	
Decant Pond	Visual assessment of pond, size and location	
Internal embankment freeboard of the TSF	Visual to confirm required freeboard capacity is available	

1.2.4 The Licensee shall ensure that all pipelines containing environmentally hazardous materials are either:
(a) equipped with automatic cut-outs in the event of a pipe failure; and/or
(b) provided with a secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; and/or
(c) equipped with telemetry systems and pressure sensors along pipelines allowing the detection of leaks and failures.

1.2.5 The Licensee shall ensure that where wastes produced on the Premises are not taken to third party Premises for lawful use or disposal, they are managed in accordance with the requirements in Table 1.2.3. Additional trenches may be constructed and operated as required, providing they are done so in accordance with Table 1.2.3.

Table 1.2.3: Management of waste

Waste type	Waste Code	Management strategy	Requirements [1,2]
Clean fill Contaminated Solid Waste Inert Waste Type 1 Inert Waste Type 2 Putrescible waste Special Waste Type 1 Special Waste Type 2	N/A	Storage, handling and disposal of waste by landfilling	**All waste types except sewage** • No more than 4 000 tonnes per year of all waste types cumulatively shall be disposed of by landfilling; • Disposal of waste by landfilling shall only take place within the landfill areas shown on the map of emission points in Schedule 1; • Waste shall be placed in a defined trench, with the active tipping area restricted to a maximum linear length of 70 m and a width of 30 m; • The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3m; and • Must meet the acceptance criteria for Class II landfills. **Asbestos Waste** • Only to be disposed of into a designated asbestos disposal area within the landfill; • Not to be deposited within 2 m of the final tipping surface of the landfill; and • No works shall be carried out on that landfill that could lead to a release of asbestos fibres.
Treated wastewater from Biomax facility	K210	Biological, physical and chemical treatment	Weekly inspection of discharge site to ensure no runoff from dump.

		and discharge to waste rock dump.	

Note 1: Requirements for landfilling tyres are set out in Part 6 of the Environmental Protection Regulations1987.
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.

1.2.6 The Licensee shall ensure that cover is applied to waste in the tipping area in accordance with Table 1.2.4 and that sufficient stockpiles of cover are maintained on site at all times for the tipping area of the site to be covered, in accordance with this condition, at least twice.

Table 1.2.4: Cover requirements

Waste Type	Material	Depth	Timescales
Clean Fill	No cover required	N/A	N/A
Inert Waste Type 1	No cover required	N/A	N/A
Inert Waste Type 2	Inert waste type 1, soil or clay	100mm	By the end of the fortnight in which the waste was deposited. Plastic waste with the potential to become windblown shall be covered as soon as practicable after deposit.
Putrescible waste	Inert Waste Type 1, soil or clay	150mm	To be covered by the end of the week in which the waste was deposited 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.
Special Waste Type 1	Inert waste type 1 or clean fill	Progressive cover 300mm	Following deposition and prior to compaction.
	Solid waste or soil	Final Cover 1000mm	By the end of the working day in which the waste was deposited.

1.2.7 The Licensee shall ensure that wind-blown waste is contained within the boundary of the landfill and that wind-blown waste is returned to the tipping area on at least a monthly basis.

2 Emissions

2.1 General

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

2.2 Point source emissions to groundwater

2.2.1 The Licensee shall ensure that where waste is emitted to groundwater from the emission points in Table 2.2.1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1:Point source emissions to groundwater		
Emission point reference	**Description**	**Source including abatement**
Hidden Secret Pit	Receiving environment – previously mined pit	Water from dewatering operations of Agnew mine operations
Hidden Secret Pit	Receiving environment – previously mined pit	Water from dewatering operations of Vivien mine operations (in the same aquifer)

3 Monitoring

3.1 General monitoring

3.1.1 The Licensee shall ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
(c) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured (unless indicated otherwise in the relevant table).

3.2 Monitoring of point source emissions to groundwater

3.2.1 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 groundwater			
Emission point reference	**Parameter**	**Units**	**Frequency**
Mine dewater discharged from Vivien Pit to Hidden Secret Pit, at the Hidden Secret outlet.	pH	-	Six monthly[1]
	Electrical conductivity at 25 °C	µS/cm	
	Total dissolved solids	mg/L	
	Arsenic Cadmium Copper Mercury Selenium		
Mine dewater from Agnew operations to Hidden Secret Pit, at the Hidden Secret outlet.	pH	-	Six monthly[1]
	Electrical conductivity at 25 °C	µS/cm	
	Total dissolved solids	mg/L	
	Arsenic Cadmium Copper Mercury Selenium		

Note 1: Six monthly monitoring to be undertaken at least 5 months apart.

3.3 Monitoring of inputs and outputs

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 inputs and outputs			
Input/Output	**Parameter**	**Units**	**Frequency**
Mine dewater discharged from Agnew operations to Hidden Secret Pit.	Cumulative volume	kL	Quarterly[1]
Mine dewater discharged from Vivien Pit to Hidden Secret Pit.	Cumulative volume	kL	Quarterly[1]

Note 1: Quarterly monitoring is undertaken at least 45 days apart.

3.4 Ambient environmental quality monitoring

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table and record and investigate results that do not meet any target specified.

Table 3.4.1: Monitoring of ambient groundwater quality					
Monitoring point reference and location	**Parameter**	**Limits**	**Units**	**Averaging period**	**Frequency**
EC473, EC476, EC477, EWB61, EWB62, EWB66, EWB67, EWB68	pH[1]	6.0 to 9.0	-	Spot sample	Quarterly[3]
	Electrical Conductivity (EC)	-	µg/cm		
	Standing water level (SWL)[2]	-	mbgl		
	Total dissolved solids[1] (TDS)	-	mg/L		Six monthly[4]
	Major Ions[5]	-			
	Total cyanide	-			
	Weak acid dissociable cyanide	0.5			
	Selenium	-			
	Thallium	-			
REDIPMW1, REDIPMW2, REDIPMW3, REDIPMW5, REDIPMW6, REDIPMW7, REDIPMW8, REDIPMW9, REDIPMW10.	pH[1]	6.0 to 9.0	-	Spot sample	Quarterly[3]
	Electrical Conductivity (EC)	-	µg/cm		
	Standing water level (SWL)[2]	-	mbgl		
	Total dissolved solids[1] (TDS)	10 000	mg/L		Six monthly[4]
	Major Ions[5]	-			
	Total cyanide	-			
	Weak acid dissociable cyanide	0.5			
	Selenium	-			
	Thallium	-			

Note 1: Field sample results are to be reported as per condition 4.2.1. An exemption from NATA laboratory analysis is allowed given geographical remoteness of the sample site and the short holding time of the parameter.
Note 2: Standing water level shall be determined prior to collection of water samples.
Note 3: Quarterly monitoring is undertaken at least 45 days apart.
Note 4: Six monthly monitoring is undertaken at least 165 days apart.

Note 5: Major Ions include elements; Ca, Na, Mg, K, Fe, SO_4, Cl, SiO_2 , NO_3, HOC_3, CO_3, Al, Sb, As, B, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Hg, Ni, Mo, Se, Ag, Sn, and Zn.

3.4.2 The Licensee shall, upon becoming aware that groundwater quality exceeds the limits in Table 3.4.1, design and implement a groundwater recovery plan.

3.4.3 The Licensee shall ensure that the groundwater recovery plan required by condition 3.4.2 of this licence includes:
(a) notification to the CEO in writing of when and in how many bores the limit could not be met;
(b) any significant environmental impacts observed;
(c) strategies to achieve the groundwater quality limit, including predicted increases in groundwater recovery and any additional recovery bores or trenches required;
(d) predicted timeframes to achieve the groundwater quality limit; and,
(e) strategies to ensure the limit will be met in the future.

3.4.4 The groundwater recovery plan outlined in condition 3.4.3 shall be submitted to the CEO for review prior to implementation.

4 Information

4.1 Records

4.1.1 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) except for records listed in 4.1.1(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
(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.

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 59 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
4.1.2	Compliance	Annual Audit Compliance Report (AACR)

4.1.3	Complaints summary	None specified
Table 3.2.1	Monitoring of point source emissions to groundwater	None specified
Table 3.3.1	Monitoring of inputs and outputs	None specified
Table 3.4.1	Monitoring of ambient groundwater quality	None specified
Table 3.4.1	Limit exceedances	N1

Note 1: Forms are in Schedule 2

4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
(a) an assessment of the information contained within the report against previous monitoring results and licence limits; and
(b) a list of any original monitoring reports submitted to the Licensee from third parties for the annual period and make these reports available on request.

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

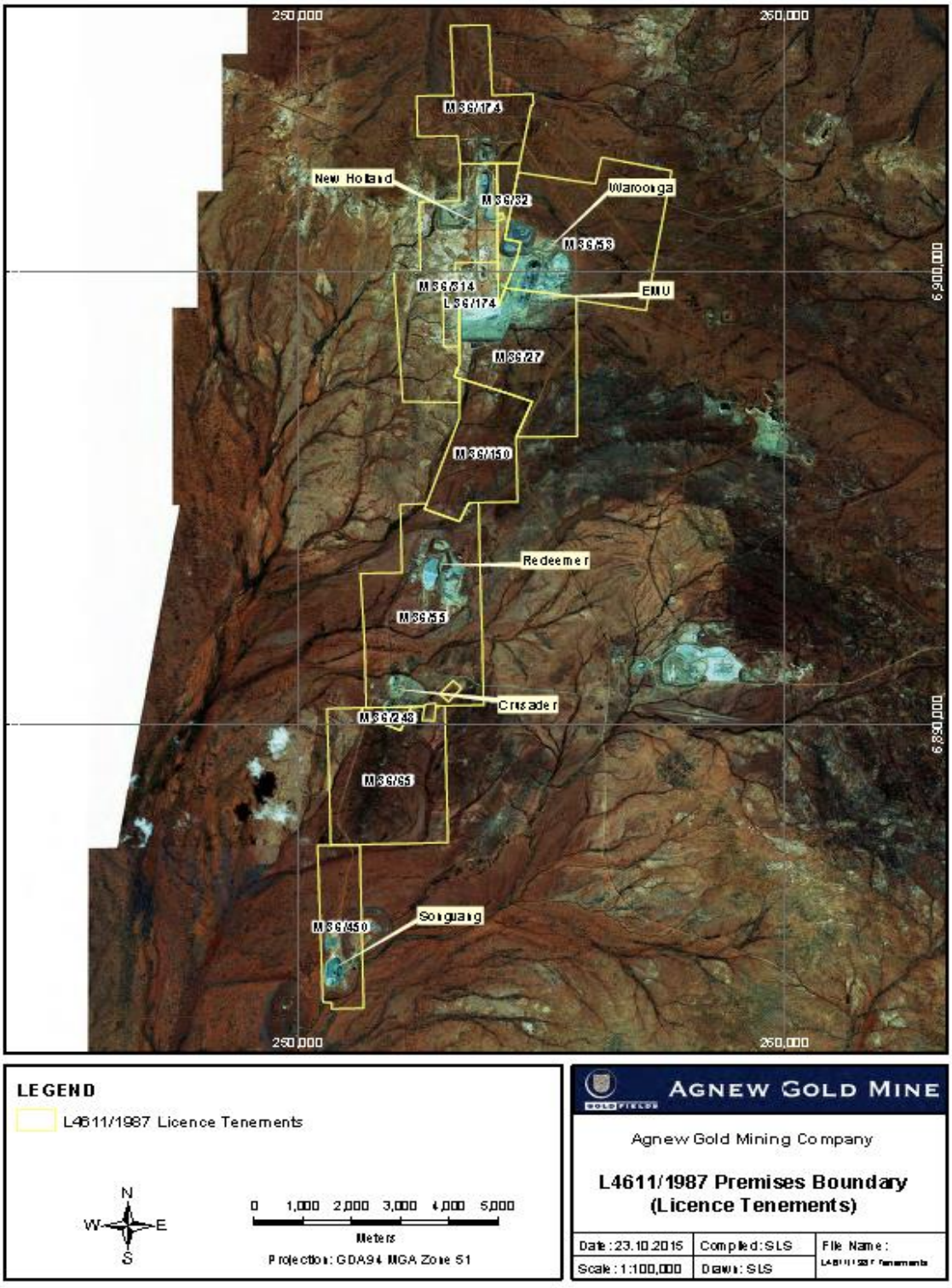
Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable but no later than 5pm of the next usual working day.	N1
3.4.1	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

Schedule 1: Maps

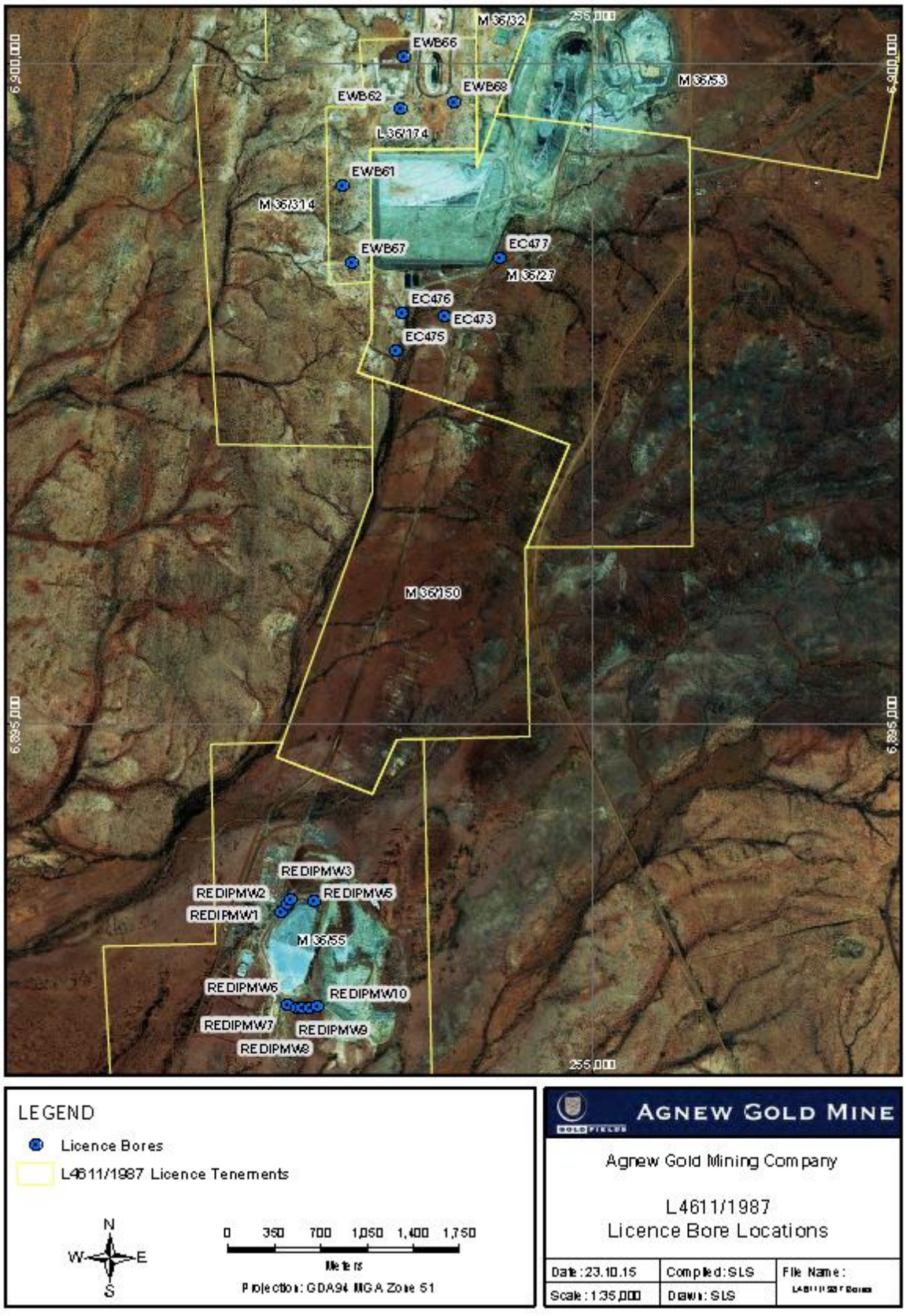
Premises map

The premises is shown in the map below. The yellow line depicts the premises boundary.



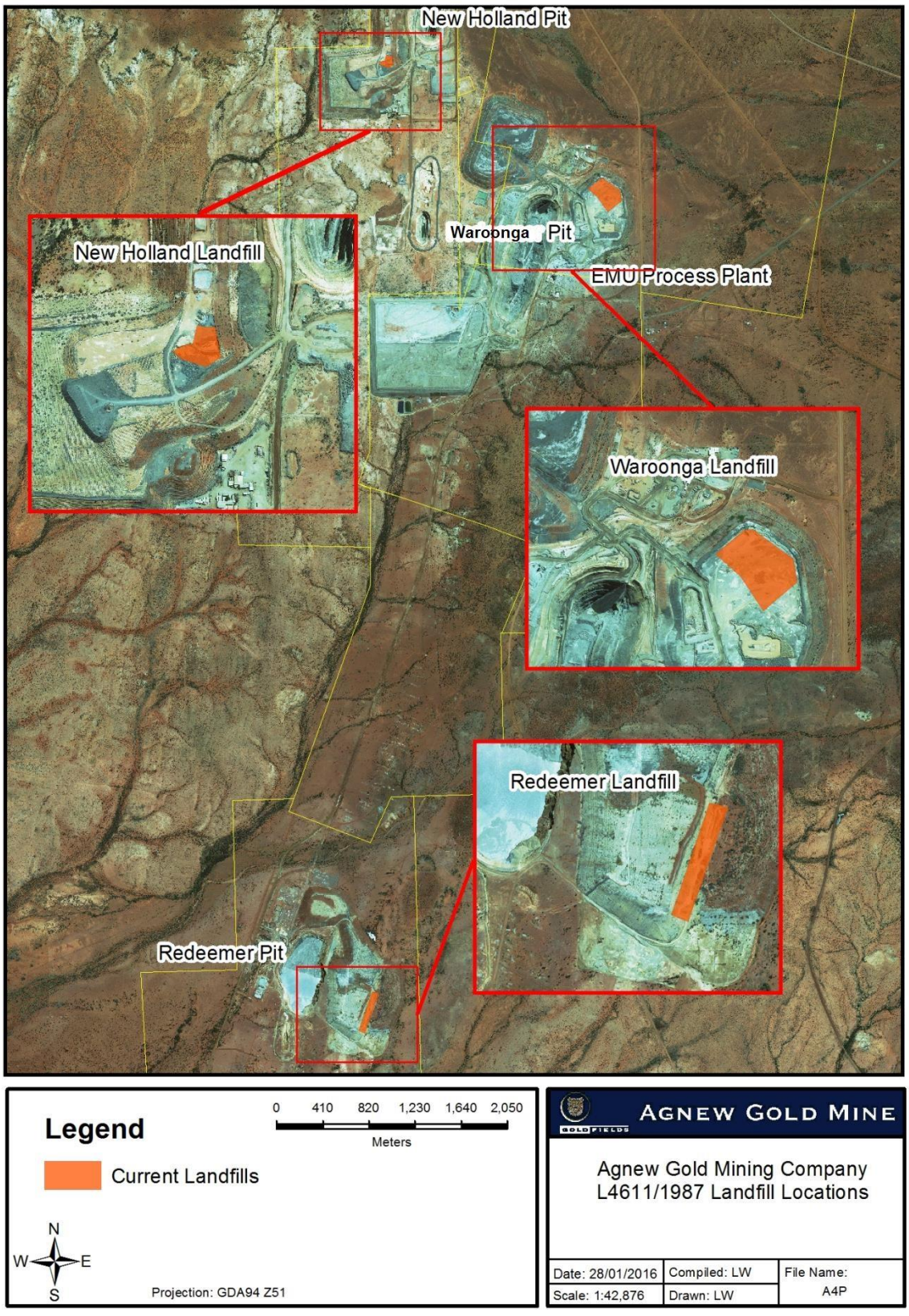
Map of monitoring locations

Site monitoring bores defined in Table 3.4.1 are shown below.



Map of Landfill Locations

Site of existing and proposed New Holland, Redeemer and Waroonga landfill sites.



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?:	
☐ Yes ☐ Reported to DER verbally Date _____ ☐ Reported to DER in writing Date _____	☐ 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	□	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	□	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	□	by affixing the common seal of the licensee in accordance with the *Corporations Act 2001*; 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)	□	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	□	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: _____/_____/_____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: _____/_____/_____

SEAL (if signing under seal)

Licence: L4611/1987/11 Licensee: Agnew Gold Mining Company 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.

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 Agnew Gold Mining Company Pty Ltd	
Date	

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Agnew Gold Mining Company Pty Ltd

Licence: L4611/1987/11

Registered office:	Level 5, 50 Colin Street WEST PERTH WA 6005
ACN:	098 385 883
Premises address:	Agnew Gold Mine Mining tenements M36/27, M36/32, M36/53, M36/55, M36/65, M36/150, M36/174, M36/248, M36/314, M36/450 and L36/174 LEINSTER WA 6437 As depicted in Schedule 1 of the licence.
Issue date:	Thursday, 17 October 2013
Commencement date:	Friday, 18 October 2013
Expiry date:	Monday, 17 October 2022

Decision
Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence amendment. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by:	Louise Lavery Senior Licensing Officer
Decision Document authorised by:	Tim Gentle Manager Licensing - Resources Industries

Contents

1 Purpose of this Document

This Decision Document explains how DER has assessed and determined the application for a licence amendment and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	5	1 300 000 tonnes per year
	6	1 200 000 tonnes per year
	89	4 000 tonnes per year
Application verified Application fee paid	Date: 09/12/2015 Date: N/A	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☒ No☐	

Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: N/A EPA Report No: N/A
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☒	
Is the premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, eg Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal

Premises description and licence summary

Agnew Gold Mining Company Pty Ltd (Agnew Gold) is wholly owned by Goldfields Limited; an international producer of gold with operating mines in Australia, Ghana, Peru and South Africa. Agnew Gold has operated its Agnew Gold Mine (AGM) under this licence since October 2013.

AGM is located approximately 26km south-west of Leinster, in Western Australia. AGM consists of the Genesis, New Holland and Waroonga underground mine operations with groundwater abstracted and pumped to the surface for discharge within the premises boundary. AGM discharges settled water from the Waroonga and New Holland underground to the Hidden Secret Pit (via settlement ponds). Song Vang open pit dewatering is directed to settling ponds prior to use for dust suppression and in the site office. Any extra dewater is pumped to the Hidden Secret Pit via settlement ponds. The operators of the nearby Vivien Pit, also discharge their mine dewater into Hidden Secret Pit.

Processing Plant:

Agnew's EMU process plant uses a Carbon in Leach gold methodology to separate gold from primary ore. Ore is milled and mixed with chemicals and water to form slurry which is passed through a leach and absorption circuit.

TSF operations:

Tailings (processing wastes) are pumped along a bunded pipeline corridor to Redeemer In-pit Tailings Storage Facility (TSF). The tailings are discharged in a manner to maximise solids consolidation and process water return. To ensure the TSF maintains compliance with the International Cyanide Management Code the tailings have a concentration of less than 50 parts per million (ppm) when discharged.

Dewatering Operations:

Dewatering occurs from the Waroonga, Genesis and New Holland underground operations, with water abstracted and pumped to the surface for use onsite. Dewater is pumped to Hidden Secret Pit via settlement ponds. A third party owns Vivien Pit, which discharges dewater into Hidden Secret Pit.

Groundwater Resources Management:

Two borefields are used as a water source – Fairyland (on neighbouring Premises Lawlers Gold Mine) and New Woman. Borefield water is pumped to site via pipelines or trucked. Water is also used from Hidden Secret, Daisy Queen (located within the neighbouring Premises Lawlers Gold Mine) and Song Vang Pits. Water is used in the processing plant, dust suppression, drinking water and in site offices.

Waste Management:

A biomax microbial waste water treatment facility operates at Waroonga, with treated water discharged onto the nearby waste rock landform. In Waroonga and New Holland Underground, chemical toilets are used and emptied on a regular basis by a licensed offsite contractor for disposal. Septic tanks are used at New Holland and EMU plant area and are emptied if required.

Agnew has three landfill locations:

- an inert waste (Type 1 and 2) landfill on top of New Holland Waste Rock Landform;
- a combined putrescible and inert waste (Type 1 and 2) landfill in Waroonga landfill; and
- a special wastes (Type 1 and 2) landfill at Redeemer Waste Rock Landform (asbestos and biomedical containers).

May 2016 Amendment

This licence amendment is proponent initiated to add mining tenements from adjacent Lawlers Gold Mine Licence (L5110/1988/10), which subsequently effects requiring amendments to licence conditions relevant to those tenements removed. The amendment of tenements has also resulted in the revision and replacement of schedule 1 maps and figures. This amendment also provides the opportunity to address redundant conditions and align this licence with the new licence format.

4 Decision table

All applications are assessed under the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and the risk matrix attached to this Decision Document in Section 6 and DER's Industry Regulation Emissions and Discharges Assessment Framework. Where other references have been used in making the decision they are detailed in the decision table.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Tenement amendment and requested amendments	N/A	Tenements M36/174 and M36/314, have been inserted to this licence as requested in the amendment application. This amendment updates former condition W8(a) and Table 2 and includes an assessment for the expansion of the existing landfills covered under the section discharge to land and monitoring. The maps in Schedule 1 of the Licence have been replaced to reflect the changes in the Premises boundary. Schedule 2 Form ET1 has been removed and substituted by existing form N1.	Application documentation
Interpretation and Preamble	L1.1.3, L1.1.4.	The preamble to existing licence will be incorporated into the process descriptions and the categories and throughputs will now appear on the front page of the amended licence. The definitions of the existing licence have been changed to reflect correct definitions, included new licence definitions plus the correct contact details for this Department especially the CEO.	N/A
General conditions	L4.3.1, Table 4.3.1	Former Condition G1(a), G1(b), and G1(c) of the previous licence, which specified that the Licence limit exceedance reporting have been removed and are replaced by amended licence condition 4.2.1 and Table 4.2.1. The previous licence included conditions W7(a) to W7(d) which related to specified storage and clean-up requirements for environmentally hazardous chemicals and storage of materials have been removed from the licence as they are unclear and not enforceable. It is the Licensee's responsibility that environmentally hazardous materials are stored appropriately in a manner	*Environmental Protection (Unauthorised Discharges) Regulations 2004*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		which prevents discharge to the environment. Any discharges to the environment may be subject to the *Environmental Protection (Unauthorised Discharges) Regulations 2004.* Former condition W2 which relates to separation and diversion of stormwater from potential contamination sources is also not clear and potentially unenforceable so has been removed from the licence. Unauthorised stormwater discharges are also captured by the *Environmental Protection (Unauthorised Discharges) Regulations 2004.*	
Premises operation	L1.2.1, Table 1.2.1	L1.2.1 lists the authorised containment infrastructure for the Premises. L1.2.1 replaces previous licence condition W1. Refer to Appendix A for DER's assessment of risks and decision making associated with TSF operations.	*Environmental Protection Act 1986* DER Guidance Statement: *Licences and Works Approvals process* (September 2015)
	L1.2.2 L1.2.3	Former Condition W4 requiring maintenance of a freeboard for water storages and dams has been replaced by condition L1.2.2. Former Conditions W5(a), W5(b), W6(c) and W6(d) requiring inspections of key containment infrastructure and pipelines have been replaced by condition L1.2.3. Refer also to Appendix A for DER's assessment of risks and decision making associated with TSF operations.	
	L1.2.4	**Abnormal operation - Pipeline Failure** <u>Emission Description</u> *Emission:* Mine dewatering, tailings or tailings supernatant discharged to the environment due to a pipeline failure. *Impact:* Mine dewater, tailings and tailings supernatant are liquors or slurries (combination of solids and liquors) with elevated metals and metalloid concentrations, brackish salinity and alkaline pH. Tailings liquors also contain trace cyanide concentrations. These liquors have the potential to cause localised soil contamination and adverse impact on vegetation	*Environmental Protection Act 1986*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Controls: Tailings delivery and water return pipelines are situated within bunded drains that contain catchment pits situated at low points along the pipeline route for the containment of spills. In the event of a pipeline failure, the drains will be able to hold the spill within the sumps where it can be managed and recovered. A telemetry system with automatic cut-off sensors has been installed as part of the pipeline infrastructure which alerts operators to pipeline leaks and failures. Risk Assessment *Consequence:* Minor *Likelihood:* Possible *Risk Rating:* Low Regulatory Controls Condition 1.2.4 requires the Licensee to ensure pipelines are either bunded to contain spills and/or have provisions for automatic cut-outs in the event of failure. This condition replaces previous conditions W6(a) and W6(b). Residual Risk *Consequence:* Minor *Likelihood:* Rare *Risk Rating:* Low	

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
	L1.2.5 – L1.2.7	L1.2.5 – L1.2.7 replace previous licence condition S1. Recent amendments to the *Environmental Protection (Controlled Waste) Regulations 2004* include new waste codes for controlled wastes. Table 1.2.3 'Management of waste' has been amended to reflect the Controlled Waste changes and column titled 'Waste Code' has been inserted with Sewage waste type code 'K210' being included in this licence. Progressive development and operation of landfill trenches is authorised under the condition L1.2.5, providing it is conducted in accord with Table 1.2.3.	*Environmental Protection (Rural Landfill) Regulations 2002*
Emissions general	L2.1.1	This is a standard explanatory condition for Licensee response in regard to limits set in the Licence. It replaces previous licence condition G1(c) in part.	*Environmental Protection Act 1986*
Point source emissions to groundwater	L2.2.1 L3.2.1 L3.3.1	**Normal Operation – Dewatering from one pit to another pit.** Emission Description *Emission:* Supernatant liquor from mine dewatering discharge from one pit into an adjacent receiving pit, an emission to groundwater. *Impact:* Deposition of mine dewater is likely to cause a concentration of salts due to evaporation in the pit, increasing salinity of the water source over time and raising local groundwater levels due to increased water level height of the receival pit. *Controls:* The Licensee currently monitors the quality of mine dewatering discharge as this was previously included on adjacent Premises Licence L5110/1988/10. The previous condition required quarterly monitoring of the dewater quality. It is estimated that any impacts would be low risk due to the dewater being similar composition to the receiving environment. Risk Assessment *Consequence:* Minor *Likelihood:* Unlikely	*Environmental Protection Act 1986*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Risk Rating: Moderate Regulatory Controls L3.2.1 requires regular monitoring of the dewater quality and volumes being discharged from an external premises (Vivien Pit) and also internally from within Agnew Operations to the Hidden Secret Pit. The frequency has been amended to six monthly from quarterly frequency on the previous licence due to the low risk presented by dewatering and lack of environmental receptors. Condition L1.2.4 covers the operation of the infrastructure pipeline and leak detection addresses prevention and management of pipeline leaks. Refer to Premises Operation for further detail. Residual Risk *Consequence:* Minor *Likelihood:* Rare *Risk Rating:* Low	
Fugitive Emissions	N/A	Former Licence conditions A1 and A2 that covered fugitive dust emissions have been removed as DER considers that these conditions are not clearly enforceable.	*Environmental Protection Act 1986*
Noise	N/A	Noise generated from the Agnew operation originates from the crusher, milling circuit, haulage and mobile equipment associated with the processing plant. However, given the nearest sensitive receptor is located approximately 30km from the mine site (township of Leinster), the impact of any noise emissions is likely to be minimal. No specified conditions relating to noise are included in the licence and will be managed under the provisions of the *Environmental Protection (Noise) Regulations 1997*.	*Environmental Protection (Noise) Regulations 1997* *Environmental Protection Act 1986*
Monitoring	L3.1.1, L3.2.1	Former condition W3 has been replaced by requirements in condition L3.1.1.	*Environmental Protection Act 1986*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
general		Former conditions W8(b) and W8(c) are replaced by condition L3.1.1 and identifies the standards that spot testing, laboratory analysis and monitoring is required to be performed by the Licensee and remains unchanged.	
Monitoring of Point Source Emissions to Groundwater	L3.2.1 and Table 3.2.1	Former surface water monitoring requirements in previous licence condition W8(a), Table 2 have been incorporated into new condition L3.2.1 and Table 3.2.1. The reviewed condition requires only monitoring of the dewatering discharge point, modified to the Hidden Secret Pit Outlet to account for safety concerns regarding the monitoring site access.	N/A
Monitoring of inputs and outputs	L3.3.1 and Table 3.3.1	With the addition of New Holland tenements, Hidden Secret Pit is now part of the Agnew Gold Mine Premises. The application to amend requires the inclusion of 'Mine dewatering discharged from Vivien pit to Hidden Secret Pit' and requires recording of cumultative volumes via condition L3.3.1. For consistency recording of dewatering volumes from sources within the Agnew Premises has also been added to the condition.	*Environmental Protection Act 1986*
Ambient environmental quality monitoring	L3.4.1 and Table 3.4.1 L3.4.2, L3.4.3, L3.4.4	The groundwater monitoring requirements listed in former condition W8(a), Table 2 have been replaced by condition L3.4.1 and Table 3.4.1. Damaged and/or dry monitoring bores EC474, EC478, EC479, EWB63, EMSC1245, EMSC1246, EMSC1247, EMSC1248, EMSC1249 and REDIPMW4 have been removed from the Licence. Thallium has been added to the list of parameters for analysis in Table 3.4.1. Information provided by Smith (2007) suggests that thallium could be a contaminant of concern in leachate from ore processing and in groundwater due to the potential for this element to be mobile in groundwater under a wide range of geochemical conditions. Thallium is also potentially more toxic to humans and many environmental receptors than mercury, cadmium and lead and is commonly found in elevated concentrations in drainage from mine sites (Peter and Viraraghavan, 2005). Former Condition W9 placed groundwater quality limits in the vicinity of the TSF. These limits have been included in L3.4.1, with the exception of a limit in regard to increasing salinity. Data	*Environmental Protection Act 1986* Applicant submission documentation Smith, K.S., 2007. Strategies to predict metal mobility in surficial mining environments. *Geological Society of America Reviews in Engineering Geology,* **Vol XVII**,

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		submitted by the Licensee as part of the application demonstrated that the ambient groundwater salinity would be managed to not exceed the 10 000mg/L limit for total dissolved solids (TDS) and that if there was variation in trends during the deposition to the Redeemer In-pit TSF, the net impact would still not exceed the TDS limit and would be managed through the life of the In-pit TSF. DER deems retention of the TDS limit to be sufficient to manage the impact to groundwater quality posed by seepage. In the event that exceedances from W9 were recorded, former condition W10 required the development and implementation of a groundwater recovery plan. This requirement is now captured in conditions L3.4.2 – L3.4.4. Refer also to Appendix A for DER's assessment and decision making in regard to TSF operation.	25-45 Peter, A.L. and Viraraghavan, T., 2005. Thallium: a review of public health and environmental concerns. *Environment International*, **31**, 493-501
Information	L4.1.1 to L4.1.3, L4.2.1, L4.2.2 and Table 4.2.1 L4.3.1 and Table 4.3.1.	Former licence conditions G2 and G3 requiring the submission of an Annual Environmental Report and Annual Audit Compliance reports have been replaced with new conditions 4.1.2, 4.2.1 and Table 4.2.1. Former conditions G1(a), G1(b), G1(c), W6(e) and W7(d) are covered by condition L4.3.1.	*Environmental Protection Act 1986*
Licence Duration	N/A	The Licence expiry date has been extended to 17 October 2022 in line with the 29 April 2016 extension to licence expiry dates by CEO notice.	DER's Guidance Statement, *Licence duration* (Revised May 2015)

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
20/05/2016	Proponent sent a copy of draft instrument	Corrections to the premises description, amendment to the capacity under category 6, correction to bores in Table 3.4.1. Correction to application of limits to TSF2 groundwater monitoring bores. Replacement of landfill figure.	All comments adopted except for removal of pH and WAD cyanide limits to non-operational TSF2 monitoring bores. Actions in conditions 3.4.2 – 3.4.4 should also be taken in response to changes in groundwater quality if detected in TSF2 bores. Given historical TDS results for TSF2 bores, the limit has not been applied to TSF2 bores.

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

Premises Operation

Normal Operation – Tailings Storage Facility (TSF)

Emission Description
Emission: Tailings held in the TSF as a waste product from the gold processing include cyanide and elevated metals/metalloid concentrations. Seepage from the TSF into the surrounding groundwater occurs over time as tailings are deposited into the facility. The pH and salinity of receiving groundwater can also be affected by seepage.
Impact: Contamination of groundwater and surrounding soils. Groundwater mounding due to seepage can also result in inundation of the root zone of vegetation and potential vegetation death.
Controls: Adequate design of the TSF with management measures including regular monitoring of groundwater potentially impacted by seepage, regular inspections of TSF infrastructure.

Risk Assessment
Consequence: Moderate
Likelihood: Possible
Risk Rating: Moderate

Regulatory Controls
Licence condition 1.2.1 ensures that tailings are only deposited into the specified containment infrastructure.

Condition L1.2.3 ensures that required inspections of the TSF are taken; it also requires a visual assessment of pipeline infrastructure.

Condition L3.4.1 requires ambient monitoring of groundwater quality in the area of the TSF and provides limits for groundwater quality in monitoring bores.

Should groundwater quality not meet the limits in L3.4.1, a groundwater recovery plan is required according to conditions L3.4.2 – L3.4.4.

These conditions provide adequate protection.

Residual Risk
Consequence: Moderate
Likelihood: Unlikely
Risk Rating: Moderate

Emergency Operation – Tailings Storage Facility (TSF)

Emission Description
Emission: Overtopping of the Redeemer In-pit TSF, releasing tailings to land during a storm event or due to operator error.
Impact: Tailings contain elevated metals, metalloids and cyanide. A release of tailings can result in localised soil contamination. Spilled tailings liquor and solids have the potential to damage and destroy vegetation if released to undisturbed areas. Large releases can result in health impacts if released to areas where personnel are located.
Controls: The Licensee has committed to the following TSF infrastructure and management practices; minimum freeboard of 300mm on the internal embankment of the TSF at all times, groundwater monitoring around the TSF to monitor standing water levels (SWL) and groundwater quality, daily visual inspections of the TSF (external TSF walls, surface ponding and tailings deposition). The final

expected height for the Redeemer In-pit TSF is at 472 m RL, 2 m below the surrounding surface height.

Risk Assessment
Consequence: Moderate
Likelihood: Rare, more than 2 m of freeboard is available for the Redeemer In-pit TSF. TSF2 is not operation.
Risk Rating: Moderate

Regulatory Controls
L1.2.1 specifies the authorised containment infrastructure whilst L1.2.3 identifies the inspection frequency for that containment infrastructure. A minimum freeboard for all containment infrastructure has been specified in condition 1.2.2 (replacing previous condition W4) which ensures that capacity for a 1 in 100 year, 72 hour frequency rainfall event is available in the In-pit TSF at all times.

Residual Risk
Consequence: Moderate
Likelihood: Rare
Risk Rating: Moderate

Appendix B

Normal Operation – Waste facilities

Emission Description
Emission: Asbestos fibres and putrescible waste leachate released into environment.
Impact: Contamination of surrounding land impacting water resources and/or reduced local air quality. Health impacts to humans including asbestosis.
Controls: The proponent has dug a cell trench within the defined landfill cell in the Premises for the placement and containment of asbestos and asbestos containing material.
This asbestos cell is separate from the general landfilling activities and is clearly identifiable.
Asbestos waste is covered and left undisturbed to reduce the risk of asbestos fines being released.
All other landfill wastes are covered during the life of the landfill.

Risk Assessment
Consequence: Moderate
Likelihood: Unlikely
Risk Rating: Moderate

Regulatory Controls
Licence condition 1.25 identifies the waste produced at the premises and identifies the waste types, waste code (Controlled Waste Regulation), and process limits for the waste processed within the Premises.

The condition specifies:

- a separation limit to ensure a 3 metre vertical separation distance between the base of the landfill and the highest groundwater level;
- within designated areas indicated in the licence schedule;
- Placed in a defined trench with a restricted length of 70 metres and width of 30 metres;
- Accumulative volumes of waste produced shall not exceed 4 000 tonnes per year;
- Asbestos waste will be separated into a designated area greater than 2 metres from the landfill and will remain undisturbed;
- Sewerage waste to be disposed offsite to an appropriate facility couriered by a licensed contractor.

L1.2.6 specifies the cover material requirements and the timeframe the cover material shall be applied.

Condition L1.2.7 requires that wind-blown waste be contained and that any waste outside the landfill area be returned to the landfill on at least a monthly basis.

Residual Risk
Consequence: Moderate
Likelihood: Unlikely
Risk Rating: Moderate