



Licence number L8464/2010/2

Licence holder FMG Solomon Pty Ltd

ACN 128 959 179

DWER file number DER2013/001363-2

Duration 18/10/2015 to 17/10/2025

Premises details Solomon Mine

E47/1011, E47/1334, E47/1532, M47/1409, M47/1410, M47/1411, M47/1413, M47/1431, M47/1453, M47/1466, M47/1473, M47/1474, M47/1475, L47/293, L47/294, L47/296, L47/301, L47/351, L47/360, L47/362, L47/363, L47/367, L47/381, E47/382, L47/391, L47/392, L47/397, L47/471, L47/472, L47/710, L47/711, L47/813, L47/814, P47/1279, P47/1286, P47/1287, P47/1304, P47/1305, P47/1735, P47/1736 and portion of E47/1319, E47/1333, E47/1398, E47/1399, E47/1447, E47/3094, E47/3464, L47/361 and L47/713

MT SHEILA WA 6751

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Approved premises production or design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	Not more than 95,300,000 tonnes per annual period
Category 6: Mine dewatering	25,000,000 tonnes per annual period
Category 54: Sewage facility	Not more than 1,178 cubic metres per day
Category 57: Used tyre storage (general)	2500 tyres
Category 61: Liquid waste facility	110,000 tonnes per annual period
Category 62: Solid waste depot	6,000 tonnes per annual period
Category 64: Class II putrescible landfill site	14,000 tonnes per annual period
Category 73: Bulk storage of chemicals	Not more than 9,560 cubic metres in aggregate

This licence is granted to the licence holder, subject to the attached conditions, on 14 June 2022, by:

ALANA KIDD
MANAGER, RESOURCE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986 (WA)*

Licence history

Date	Reference number	Summary of changes
22 April 2010	W4645/2010/1	Works approval for construction of Castle Camp WWTP
14 October 2010	L8464/2010/1	New licence for Castle Camp WWTP
3 March 2011	W4846/2010/1	Works approval for Castle Camp upgrade to category 54
3 November 2011	W4881/2011/1	Works approval for Dally Camp WWTP
23 June 2011	W4900/2011/1	Works approval for Direct Shipping Ore Processing Plant
4 August 2011	W4930/2011/1	Works approval for Mobile Crushing Plant
4 August 2011	W4932/2011/1	Works approval for Stockyard Mobile Crushing Plant
4 August 2011	W4940/2011/1	Works approval for Ellie Camp WWTP
9 February 2012	W5088/2011/1	Works approval for Kangi Camp WWTP and waste transfer station
9 February 2012	L8464/2010/1	Licence amendment increase capacity
3 November 2011	W5110/2011/1	Works approval for Processing plant and tailings facility
14 June 2012	L8464/2010/1	Licence amendment increase capacity
19 July 2012	W5192/2012/1	Works approval for Bulk fuel facility
1 November 2012	W5246/2012/1	Works approval for Central Facilities Infiltration trench
21 February 2013	L8464/2010/1	Licence amendment add category 5, 12 and 73
7 July 2013	W5407/2013/1	Works approval for an additional Ore Mobile Crushing Facility
29 August 2013	W5429/2013/1	Landfill and Waste Transfer Station
5 December 2013	L8464/2010/1	Licence amendment increase capacity category 5 and update the licence template

25 September 2014	W5690/2014/1	Works approval for construction of three OPFs (two at Kings and one at Firetail)
12 February 2015	L8464/2010/1	Licence amendment to increase capacity of categories 5 and 73, and add category 64
23 April 2015	L8464/2010/1	Licence amendment to include categories 57 and 61
15 October 2015	L8464/2010/2	Licence renewal and amendment to upgrade Dally Camp WWTP, include discharges from OWS as emissions to land, change the TSF monitoring requirements and update the prescribed premises boundary
2 June 2016	L8464/2010/2	Licence amendment for works approval to construct landfill and waste transfer station
15 May 2017	L8464/2010/2	Licence amendment to approve TSF embankment lift, remove OWS discharge and monitoring locations, increase category 57 and 73 approved design capacities and include additional inert waste disposal location
19 June 2017	L8464/2010/2	Licence amendment to remove the Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAC) monitoring requirements from Tables 2.2.2, 3.2.1 and 3.4.1
18 January 2018	L8464/2010/2	Licence amendment to remove ambient groundwater monitoring bore GQ8 (WF-MB001S) at the landfill from Table 3.5.1
7 December 2018	L8464/2010/2	Licence amendment for upgrades to the Dally Camp WWTP
15 May 2019	L8464/2010/2	Licence amendment to include category 6 (mine dewatering) including emissions points and associated monitoring requirements and to change the premises boundary
15 January 2020	L8464/2010/2	Licence amendment for: <ul style="list-style-type: none"> • Additional water infrastructure for storage and disposal of groundwater abstraction through mine dewatering • Installation of the Queens Crushing Facility • Additional fuel storage at Solomon Stores Removal of two upstream tailings storage facility (TSF) 1 groundwater monitoring bores
14 June 2022	L8464/2010/2	Licence amendment for: <ul style="list-style-type: none"> • Additional Tailings Storage Facility (TSF) decant infrastructure; • New dewatering disposal option; and • Additional groundwater supplementation bores.

Interpretation

In this licence:

- (a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;
- (b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (c) where tables are used in a condition, each row in a table constitutes a separate condition;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this licence:
 - (i) if dated, refers to that particular version; and
 - (ii) if not dated, refers to the latest version and therefore may be subject to change over time;
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and
- (f) unless specified otherwise, all definitions are in accordance with the EP Act.

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

Licence conditions

General

1 The licence holder must ensure the limits specified in Table 1 are not exceeded.

Table 1: Production or design capacity limits¹

Category ¹	Category description ¹	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	95,300,000 tonnes of ore per annual period
6	Mine dewatering	25,000,000 tonnes per annual period
61	Liquid waste facility	110,000 tonnes per annual period
62	Solid waste depot	6,000 tonnes per annual period
73	Bulk storage of chemicals	9,560 m ³ in aggregate

Note 1: *Environmental Protection Regulations 1987, Schedule 1.*

Infrastructure and equipment

2 The licence holder must ensure that all pipelines (or sections of pipelines) containing tailings are either:

- equipped with telemetry; or
- equipped with automatic cut-outs in the event of a pipe failure; and/or
- provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

3 The licence holder must ensure that waste material is only stored and/or treated within the vessels or compounds listed in Table 2 and identified on the map of containment infrastructure in Schedule 1, in accordance with the requirements specified within Table 2.

Table 2: Containment infrastructure

Storage vessel or compound	Material	Requirements
Category 5		
TSF1	Tailings	<ul style="list-style-type: none"> Maintain a minimum freeboard of 500 mm as measured from the operational pond surface to lowest elevation of perimeter embankment. Provide additional sufficient freeboard to minimise the likelihood of erosion of the embankments by wave action.

Storage vessel or compound	Material	Requirements
		<ul style="list-style-type: none"> Install and maintain a seepage collection and recovery system. Crest elevation to Relative Level 605 mAHD.
TSF1 Gravity Decant Water Storage Pond	Tailings supernatant liquor/ decant liquor/ tailings leachate/ seepage	<ul style="list-style-type: none"> HDPE liner. Maintain vertical freeboard of 300 mm.
Gee-Pit	Tailings decant water mixed with stormwater	<ul style="list-style-type: none"> Contingency discharge of TSF decant water/stormwater to Gee-Pit Creek during high rainfall events.
Category 6		
<ul style="list-style-type: none"> 17 ML raw water storage facility 7 ML raw water storage facility 	Fresh to marginal water sourced from mine pit dewatering and water supply borefields	<ul style="list-style-type: none"> Earthen ponds; and Minimum vertical freeboard of 100 mm
Queens Turkeys Nest		<ul style="list-style-type: none"> Pre-stressed concrete panel containment structure

- 4 The licence holder must ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 3.

Table 3: Management of waste

Waste type	Management strategy	Requirements ^{1,2}
Sewage	Biological and physical	Not to exceed 1,178 m ³ /day
Treated wastewater	Chemical treatment (disinfection) prior to onsite irrigation	Not applicable
Sewage sludge	Storage (enclosed tanks) and sludge press	Not applicable
Reverse Osmosis (RO) Reject Stream	Onsite irrigation, dust suppression, garden reticulation and process water	<ul style="list-style-type: none"> Not more than 360kL/day of RO Reject Stream to be reused on the premises. Subject to requirements specified in: <ul style="list-style-type: none"> ➤ Condition 14, Table 9; ➤ Condition 21, Table 13; and ➤ Condition 23, Table 15.
	Direct discharge to surface water	

Waste type	Management strategy	Requirements ^{1,2}
	via existing supplementation network	
	Direct discharge to groundwater via existing reinjection network	
Used tyres	Storage	<ul style="list-style-type: none"> • Not more than 2,500 used tyres shall be stored at the Premises at any one time. • Used tyres shall not be stored closer than 6 m from any other tyre stack.
Clean Fill	Receipt, handling and disposal by landfilling	<ul style="list-style-type: none"> • No more than 14,000 tonnes per year (combined with Inert Waste Type 2) shall be disposed of by landfilling. • Disposal of waste by landfilling shall only take place within the prescribed premises in the locations as shown in the Map of disposal points in Schedule 1. • Waste shall be placed in a defined trench or within an area enclosed by earthen bunds. • All disposal locations are to be surveyed and the latitude and longitude recorded. • The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2 m.
Inert Waste Type 1	Receipt, handling and disposal by landfilling	<u>Untreated wood</u> <ul style="list-style-type: none"> • Disposal of Untreated Wood is to be to the Solomon Landfill, Firetail North Waste Dump, Firetail Waste Wood Disposal Area and Kings Waste Dump (as depicted in the map of disposal points in Schedule 1).
Putrescible Waste		Burial of waste shall only take place within the prescribed premises in the Solomon Landfill, Kings Mine Pit, Kings Waste Dump, Firetail South Waste Dump, Firetail South Mine Pit, Firetail North Mine Pit, Trinity Waste Dump and Trinity Mine Pit as shown in the Map of disposal points in Schedule 1. Cell locations where tyres and other waste rubber are to be buried will be surveyed and the latitude and longitude recorded.
Inert Waste Type 2		
Tailings decant water	Storage and reuse in processing	Discharged to the: <ul style="list-style-type: none"> • Decant Pond; • Contingency discharge of TSF decant water/stormwater to Kangeenarina Creek during high rainfall events; and

Waste type	Management strategy	Requirements ^{1,2}
		<ul style="list-style-type: none"> Contingency discharge of TSF decant water/stormwater to Gee-Pit during high rainfall events

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*.

5 The licence holder must ensure that the irrigation of treated wastewater meets the following:

- (a) no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the designated irrigation areas, as identified in the map of emissions points (L1 and L2) depicted in Schedule 1;
- (b) 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) a healthy vegetation cover is maintained over the wastewater irrigation areas.

6 The licence holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 4 and that sufficient stockpiles of cover are maintained on site at all times.

Table 4: Cover requirements¹

Waste Type	Material	Depth	Timescales
Clean Fill	No cover required		
Inert Waste Type 1			
Inert Waste Type 2	Inert and incombustible material	Sufficient to ensure waste is totally covered and no waste is left exposed	At least weekly
Putrescible waste		1,000 mm	Within 3 months of achieving final waste contours

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

7 The licence holder must:

- (a) undertake inspections as detailed in Table 5;
- (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 5: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Tailings pipelines	Visual integrity	Daily
Tailings return water lines	Visual integrity	Daily
TSF1 embankment freeboard	Visual to confirm required freeboard capacity is available	Daily

- 8 The licence holder must undertake an annual water balance for the TSF. The water balance shall as a minimum consider the following:
- site rainfall;
 - evaporation;
 - tailings return water recovery volumes;
 - seepage recovery volumes; and
 - volumes of tailings deposited.
- 9 The licence holder must construct the TSF embankment lift, Gee-Pit decant infrastructure and mine dewatering infrastructure in accordance with the requirements specified in the infrastructure requirements detailed in Table 6. The licence holder must not depart from the design and construction requirements specified in Table 6 except:
- where such departure is minor in nature and does not materially change or affect the infrastructure; or
 - where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment; and
 - all other conditions in this licence are still satisfied.

Table 6: Infrastructure requirements¹

Infrastructure	Requirements (Design and construction)
Category 5	
TSF embankment lift	<ul style="list-style-type: none"> Designed to contain rainfall associated with a 1 in 100 year, 72 hours storm event and maintain a 500 mm freeboard. Staged embankment lift up to Relative Level 605 mAHD, and length of 1,100 m.
Tailings delivery	<ul style="list-style-type: none"> Steel or HDPE pipeline from the Kings Ore Processing facility. Spigots located along TSF embankment.
Decant facility	<ul style="list-style-type: none"> Use of existing gravity decant tower. Two additional decant towers and/or skid mounted pumps with floating intakes.
Decant line to Gee-Pit	<ul style="list-style-type: none"> Pump driven.
Gee-Pit	<ul style="list-style-type: none"> Disused open mine void; and 1,400,000 m³ storage capacity.

Infrastructure	Requirements (Design and construction)
Category 6	
Weelumurra Creek borefield	<ul style="list-style-type: none"> Duplicated injection borefield west of existing Weelumurra Creek supplementation borefield. Duplicated injection borefield east of existing Weelumurra Creek supplementation borefield.
Kings East Managed Aquifer Recharge	<ul style="list-style-type: none"> Up to four parallel buried diffusion lines installed within the backfill of the Kings East Pit.
17 ML raw water storage facility 7 ML raw water storage facility	<ul style="list-style-type: none"> Earthen ponds; and Minimum vertical freeboard of 100 mm.
Queens Turkeys Nest	<ul style="list-style-type: none"> Pre-stressed concrete panel containment structure.

Note 1: Where the details and commitments of the documents listed in condition 9 are inconsistent with any other condition of this licence, the conditions of this licence shall prevail.

- 10 The licence holder must operate the TSF embankment lift, Gee-Pit decant infrastructure and mine dewatering infrastructure, in accordance with the conditions of this Licence, following submission of the compliance documents required under condition 33.
- 11 The licence holder must maintain the following infrastructure to ensure that stormwater from operational areas is diverted for treatment prior to disposal or discharge:
- sediment basins at the Sizing Hubs, Kings and Firetail Ore Processing Facilities, Direct Shipping Ore Processing Plant, Rail Stockyard, Queens Crushing Facility and Mobile Crushing Facilities;
 - diversion drain to the north-east of the stockyard; and
 - drains and sealed collection sumps around satellite fuel facilities and maintenance workshops, excluding roofed and bunded facilities.

Emissions and discharges

Authorised discharge points for emissions

- 12 The licence holder must ensure that where waste is emitted to surface water from the emissions points in Table 7 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 7: Point source emissions to surface water

Emission point reference and location on Map of emissions points	Description	Source, including any abatement
Contingency discharge pipeline to Kangeenarina Creek	<ul style="list-style-type: none"> Contingency discharge of TSF decant water/stormwater to 	<ul style="list-style-type: none"> Decant water/stormwater

Emission point reference and location on Map of emissions points	Description	Source, including any abatement
	Kangeenarina Creek during high rainfall events	
Kangeenarina Creek Supplementation System SOL-FM012 SOL-FM013	<ul style="list-style-type: none"> Water discharged via a pipeline to up to 4 spigots on Kangeenarina Creek for the purpose of supplementation 	<ul style="list-style-type: none"> Mine dewater from mine pits within the prescribed premises boundary or groundwater sourced from water supply borefields discharged to Kangeenarina Creek

13 The licence holder must ensure that where waste is emitted to groundwater from the emissions points in Table 8 and identified on the map of emission points in Schedule 1, it is done so in accordance with the conditions of this licence.

Table 8: Point source emissions to groundwater

Emission point reference and location on Map of emission points	Description	Source, including any abatement
Kangeenarina Creek Infiltration System	Water discharged via buried, slotted pipelines to Kangeenarina Creek for the purpose of supplementation	Mine dewater from mine pits within the prescribed premises boundary or groundwater sourced from water supply borefield discharged to Kangeenarina Creek
Weelumurra North Supplementation Injection Bores WIN001 WIN002 WIN003 WIN004 WIN005 WIN006 WIN007 WIN008 WIN009 SM_WM_IJ_10 SM_WM_IJ_11 SM_WM_IJ_12 SM_WM_IJ_13	Mine dewater discharged to up to 25 of the Weelumurra North Supplementation Injection Bores in Weelumurra Creek for the purpose of supplementation	Mine dewater sourced from mine pits within the prescribed premises boundary or groundwater sourced from a water supply borefield discharged to Weelumurra Creek

Emission point reference and location on Map of emission points	Description	Source, including any abatement
SM_WM_IJ_14 SM_WM_IJ_15 SM_WM_IJ_16 SM_WM_IJ_24 SM_WM_IJ_25 SM_WM_IJ_26 SM_QU_IJ_01 SM_QU_IJ_02 SM_QU_IJ_03 SM_QU_IJ_04 SM_QU_IJ_05 SM_QU_IJ_06		
Karijini Supplementation Injection Bores KIN002R2 KIN003	Mine dewater or groundwater sourced from water supply borefields discharged to up to two Karijini Supplementation Injection Bores near the boundary of Karijini National Park for the purpose of supplementation	Mine dewater sourced from mine pits within the prescribed premises boundary to groundwater sources from a water supply borefield discharged to the boundary of Karijini National Park.
Kings East Managed Aquifer Recharge	Mine dewater discharged to backfilled pit for the purpose of managed aquifer recharge and excess water management	Mine dewater sourced from mine pits within the prescribed premises boundary

- 14 The licence holder must ensure that where waste is emitted to land from the emission points in Table 9 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this licence.

Table 9: Emissions to land

Emission point reference and location on Map of emission points	Description	Source including abatement
L1	Discharge of treated wastewater to a 12.5 hectare irrigation field	Effluent from Castle/Dally Camp WWTP
L2	Discharge of treated wastewater and Reverse Osmosis reject water to a 16.3 hectare irrigation field, onsite dust suppression and landscape irrigation	Effluent from Kangi Camp WWTP and Reverse Osmosis reject water

Emission point reference and location on Map of emission points	Description	Source including abatement
L3	Discharge of treated wastewater	Bulk Fuel Facility oily water separator
L5	Mine dewater discharged to the Central Facilities Kangi Infiltration Trench Trench of approximately 130 m x 60 m in size where water infiltrates or evaporates	Mine dewater sourced from mine pits within the prescribed premises boundary or groundwater sourced from a water supply borefield Discharged to Kangi Infiltration Trench in the case that it is not required for supplementation purposes and exceeds the storage capacity of the site water distribution system
L12 Shown as Gee-Pit in Figure 13	Contingency discharge pipeline Contingency discharge of TSF decant water/stormwater to Gee-Pit during high rainfall events	Decant water/stormwater

15 The licence holder must not cause or allow emissions to land greater than the limits listed in Table 10.

Table 10: Emission limits to land

Emission point reference	Parameter	Limit (including units)	Averaging period
L3 (Oily water separator emission to land)	Total Recoverable Hydrocarbons	15 mg/L	Spot sample (when flowing)

Monitoring

General monitoring

- 16 The licence holder must ensure that:
- all water samples are collected and preserved in accordance with AS/NZS 5667.1 unless otherwise indicated;
 - all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
 - all surface water sampling is conducted in accordance with AS/NZS 5667.6;
 - all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
 - all microbiological samples are collected and preserved in accordance with AS/NZS 2031; and

- (f) 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.
- 17 The licence holder must ensure that:
- (a) Monitoring is undertaken in each weekly period such that there are at least 4 days in between the days on which samples are taken in successive weeks;
 - (b) Monitoring is undertaken in each monthly period such that there are at least 15 days in between the days on which samples are taken in successive months;
 - (c) Monitoring is undertaken in each quarterly period such that there are at least 45 days in between the days on which samples are taken in successive quarters;
 - (d) Monitoring is undertaken in each six-monthly period such that there are at least 5 months in between the days on which samples are taken in successive periods of six months; and
 - (e) Monitoring is undertaken in each annual period such that there are at least 9 months in between the days on which samples are taken in successive years.
- 18 The licence holder must ensure that all monitoring equipment is operated and calibrated in accordance with the manufacturer's specifications.

Discharge point monitoring

- 19 The licence holder must undertake the monitoring in Table 11 according to the specification in that table.

Table 11: Monitoring of point source emissions to surface water

Emission point reference and location on Map of emission points	Parameter	Units	Frequency
Contingency discharge pipeline to Kangeenarina Creek	Volume of water discharged to creek	kL	Continuous when discharge is occurring
	Total Dissolved Solids	mg/L	At commencement of discharge event and weekly thereafter while discharge is occurring
	Major cations and anions Sodium Potassium Calcium Magnesium Chloride Sulfate Dissolved metals Arsenic	mg/L	

Emission point reference and location on Map of emission points	Parameter	Units	Frequency
	Cadmium Cobalt Chromium Copper Mercury Nickel Lead Selenium Zinc		
Kangeenarina Creek Supplementation System SOL-FM012 (SSWE001) SOL-FM013 (SSWE002)	Cumulative water meter readings	m ³	Continuous
Delivery pipeline to the Kangeenarina Creek Supplementation System	pH ¹	pH units	Six monthly when discharge is occurring
	Electrical Conductivity	µS/cm	
	Total Dissolved Solids	mg/L	
	Major cations and anions Sodium Potassium Calcium Magnesium Chloride Sulfate Alkalinity Nitrate Metals, Metalloids and Non-metals Aluminium Antimony Arsenic Beryllium Boron Cadmium Cobalt Chromium	mg/L	

Emission point reference and location on Map of emission points	Parameter	Units	Frequency
	Copper Iron Manganese Mercury Nickel Lead Selenium Silver Zinc		

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

20 The licence holder must undertake the monitoring in Table 12 according to the specification in that table.

Table 12: Monitoring of point source emissions to groundwater

Emission point reference and location on Map of emission points	Parameter	Units	Frequency
Kangeenarina Creek Infiltration System Weelumurra North Supplementation Injection Bores WIN001 WIN002 WIN003 WIN004 WIN005 WIN006 WIN007 WIN008 WIN009 SM_WM_IJ_10 SM_WM_IJ_11 SM_WM_IJ_12 SM_WM_IJ_13 SM_WM_IJ_14 SM_WM_IJ_15 SM_WM_IJ_16	Cumulative water meter readings	m ³	Continuous

<p>SM_WM_IJ_24 SM_WM_IJ_25 SM_WM_IJ_26</p> <p>SM_QU_IJ_01 SM_QU_IJ_02 SM_QU_IJ_03 SM_QU_IJ_04 SM_QU_IJ_05 SM_QU_IJ_06</p> <p>Karrijini Supplementation Bores KIN002R2 KIN003</p>			
<p>Kangeenarina Creek Infiltration System</p> <p>Delivery pipeline to Weelumurra North Supplementation Injection Bores</p> <p>Delivery pipeline to Karrijini Supplementation Injection Bores</p> <p>Delivery pipeline to Kings East Managed Aquifer Recharge scheme</p>	<p>pH¹</p> <p>Electrical Conductivity</p> <p>Total Dissolved Solids</p> <p>Major cations and anions Sodium Potassium Calcium Magnesium Chloride Sulfate Alkalinity Nitrate</p> <p>Metals, Metalloids and Non-metals Aluminium Antimony Arsenic Beryllium Boron Cadmium Cobalt Chromium Copper Iron Manganese Mercury</p>	<p>pH units</p> <p>µS/cm</p> <p>mg/L</p> <p>mg/L</p>	<p>Six monthly</p>

	Nickel Lead Selenium Silver Zinc		
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Note 1: In-field non-NATA accredited analysis permitted.

21 The licence holder must undertake the monitoring in Table 13 according to the specifications in that table.

Table 13: Monitoring of emissions to land

Monitoring reference	point	Parameter	Units	Averaging Period	Frequency
L1 - L2		Cumulative volume of treated wastewater discharged from each WWTP	m ³	Cumulative monthly	Continuous
		Cumulative volume of Reverse Osmosis reject water stream discharged via irrigation	m ³	Cumulative monthly	Continuous
		pH ¹	pH units	Spot sample	Quarterly
		5-Day Biochemical Oxygen Demand	mg/L		
		Total Suspended Solids			
		Total Nitrogen			
		Total Phosphorus			
		<i>E.coli</i>	cfu/100 mL		
L3		Total Recoverable Hydrocarbons	mg/L	Spot sample (when flowing)	Quarterly
L5		Cumulative volume of dewater water	m ³	Cumulative for the period of discharge	For the period of discharge

Monitoring reference	point	Parameter	Units	Averaging Period	Frequency
		discharged to Central Facilities Kangi Infiltration Trench			
L12		Volume of water discharged to Gee Pit	kL	Spot sample (when flowing)	Continuous
		Total Dissolved Solids	mg/L		At commencement of discharge event and weekly thereafter while discharge is occurring
		Major cations and anions Sodium Potassium Calcium Magnesium Chloride Sulfate Dissolved metals Arsenic Cadmium Cobalt Chromium Copper Mercury Nickel Lead Selenium Zinc	mg/L		

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

22 The licence holder must undertake the monitoring in Table 14 according to the specifications in that table.

Table 14: Monitoring of inputs and outputs

Input/Output	Parameter	Units	Averaging Period	Frequency
Waste Inputs	Volume of Inert Waste Type 1, Inert Waste Type 2 (tyres/rubber waste and conveyor belts) and Putrescible waste	tonnes	Each load	Cumulative monthly total

- 23 The licence holder must undertake the monitoring in Table 15 according to the specifications in that table.

Table 15: Process monitoring

Monitoring point reference	Process description	Parameter	Units	Limit	Frequency	Method
TSF1	Tailings delivery to TSF	Volume and mass of tailings deposited into the TSF	m ³ and tonnes	N/A	Continuous	None specified
	TSF return line	Volumes of water recovered from the TSF	m ³ and kL			
L4 (Stockyard TK901 Storage Tank)	Treated wastewater accepted on site from the Solomon Power Station and used for dust suppression	Cumulative volume	m ³	N/A	Cumulative monthly	Continuous
		pH ¹	pH units	N/A	Quarterly	None specified
		Total Dissolved Solids	mg/L	<5,000		
		Total Recoverable Hydrocarbons	mg/L	<15		

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

- 24 The licence holder must undertake the monitoring in Table 16 according to the specifications in that table.

Table 16: Monitoring of ambient groundwater quality

Monitoring point reference and location ²	Parameter	Units	Averaging period	Frequency
Bulk Fuel Facility groundwater monitoring bores				
GQ1 (FITL-MB-001)	Standing water level	mAHD mbgl	Spot sample	Six monthly
GQ2 (FITL-MB-002)	Total Recoverable Hydrocarbons	mg/L		
GQ11 ³ (FITL-MB-002D)				
TSF1 groundwater monitoring bores				
GQ3 (TSF1-MB-006D)	Standing water level	mAHD	Spot sample	Quarterly
GQ5 (TSF1-MB-004)	pH ¹	pH units		
	Electrical Conductivity	µS/cm		
GQ7 (TSF1-MB-005D)	Total Dissolved Solids	mg/L		
	Major cations and	mg/L	Spot sample	Quarterly

Monitoring point reference and location ²	Parameter	Units	Averaging period	Frequency
	anions Sodium Potassium Calcium Magnesium Chloride Sulfate Alkalinity Nitrate Ammonia			
	Dissolved metals, metalloids and non-metals Antimony Arsenic Boron Cadmium Cobalt Chromium Copper Iron Manganese Mercury Molybdenum Nickel Lead Selenium Strontium Uranium Zinc	mg/L	Spot sample	Quarterly
Landfill monitoring bores				
GQ9 (WF-MB001D)	Standing water level	mbgl	Spot sample	Quarterly
GQ10 (WF-MB002D)	pH ¹	pH units		
	Electrical Conductivity	µS/cm		
	Total Dissolved Solids	mg/L		
	Dissolved metals Arsenic Cadmium Chromium Copper	mg/L		

Monitoring point reference and location ²	Parameter	Units	Averaging period	Frequency
	Mercury			
	Lead			
	Nickel			
	Zinc			
	Nitrate	mg/L		
	Total Phosphorus	mg/L		

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

Note 2: No sample required if bore is dry.

Note 3: Sampling may be undertaken from GQ11 if GQ2 bore is unblocked or redrilled.

Information

- 25 The licence holder must maintain accurate and auditable books that include the following records, information, reports, and data required by this licence:
- the calculation of fees payable in respect of this licence;
 - the works conducted in accordance with condition 9, Table 6 of this licence;
 - any maintenance of infrastructure that is performed in the course of complying with the conditions of this licence;
 - monitoring programmes undertaken in accordance with condition 19 Table 11, condition 20 Table 12, condition 21 Table 13, condition 22 Table 14, condition 23 Table 15 and condition 24 Table 16 of this licence; and
 - complaints received under condition 28 of this licence.
- 26 The books specified under condition 25 must:
- be legible;
 - if amendment, be amended in such a way that the original version(s) and any subsequent amendments remain legible and area capable of retrieval;
 - be retained by the licence holder for the duration of the licence; and
 - be available to be produced to an inspector or the CEO as required.
- 27 The licence holder must:
- undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
 - prepare and submit to the CEO by no later than 31 March each year, after the end of that annual period, an Annual Audit Compliance Report in the approved form.
- 28 The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department of another party) about any alleged emissions from the premises:
- the name and contact details of the complainant, (if provided);
 - the time and date of the complaint;

- (c) the complete details of the complaint and any other concerns or other issues raised; and
- (d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

- 29 The licence holder must record and maintain a permanent record of all disposal sites authorised under condition 4.
- 30 The licence holder must submit to the CEO by no later than 31 March each year, after the end of each annual period, an Annual Environmental Report for that annual period for the conditions listed in Table 17, and which provides information in accordance with the corresponding requirement set out in Table 17.

Table 17: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Condition 4, Table 3	Untreated wood, used tyre and other waste rubber disposal locations	None specified
Condition 8	TSF annual water balance	None specified
Condition 15, Table 10	Limit exceedances	None specified
Condition 23, Table 15		
Condition 19, Table 11	Discharge to surface water monitoring	None specified
Condition 20, Table 12	Groundwater reinjection monitoring and infiltration discharge monitoring	None specified
Condition 21, Table 13	Monitoring of emissions to land, including an interpretation of results against plant design specifications for L1 and L2	None specified
Condition 22, Table 14	Monitoring of inputs and recording of quantities of waste disposed of at each site	None specified
Condition 23, Table 15	Mass of tailings deposited into TSF1, recovered water and recovered seepage water	None specified
	L3 monitoring results – treated wastewater used for dust suppression	
	L4 monitoring results – water accepted from Solomon Power Station used for dust suppression	
Condition 24, Table 16	Ambient groundwater monitoring results, and for GQ3, GQ5 and GQ7 (TSF monitoring bores) a comparison of results against the site specific trigger values detailed in the document, <i>Life of Mine Geochemistry Programme – Site Specific</i>	None specified

Condition or table (if relevant)	Parameter	Format or form
	<i>Trigger Values</i> (45-SY-EN-0001). Details of investigations conducted, including outcomes, environmental impacts and remedial actions, in relation to trigger exceedances and a discussion of any trends identified	
Condition 27	Compliance	None specified
Condition 22	Complaints summary	None specified

- 31 The licence holder must ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and licence limits.
- 32 The licence holder must submit the information in Table 18 to the CEO according to the specifications in that table.

Table 18: Non-annual reporting requirements

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

- 33 The licence holder must ensure that the parameters listed in Table 19 are notified to the CEO in accordance with the notification requirements of the table.

Table 19: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement	Format or form
-	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	N1
Condition 9, Table 6	The licence holder shall submit a compliance document to the CEO, following the construction of the TSF embankment lift, Gee-Pit decant infrastructure and mine dewatering infrastructure. The compliance document/s shall:	Within one month of completion of construction	None specified

Condition or table (if relevant)	Parameter	Notification requirement	Format or form
	(a) be certified by a suitably qualified engineer and certify that the works were constructed in accordance with the construction requirements specified in condition 9, Table 6; (b) provide a list of departures from the specified works certified by a suitably qualified engineer; and (b) be signed by a person authorised to represent the licence holder and contain the printed name and position of that person within the company		

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

Note 2: Forms are in Schedule 2

Definitions

In this licence, the terms in Table 20 have the meanings defined.

Table 20: Definitions

Term	Definition
ACN	Australian Company Number
Annual Compliance Audit Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 January to 31 December in the same year
ANZECC/ARMCANZ	means Australian and New Zealand Guidelines for Fresh and Marine Water Quality
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i>
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 <i>Water Quality – Sampling – Guidance on sampling of rivers and streams</i>
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i>
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling of groundwaters</i>
averaging period	means the time over which a limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Clean Fill	has the meaning defined in the Landfill Definitions

Term	Definition
controlled waste	has the definition in Environmental Protection (Controlled Waste) Regulations 2004
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
DWER	means Department of Water and Environmental Regulation
emission	has the same meaning given to that term under the EP Act.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point
HDPE	means high density polyethylene
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 " <i>Landfill Waste Classification and Waste Definitions</i> " published by the Chief Executive Officer of the Department of Water and Environmental Regulation as amended from time to time
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
mbgl	means metres below ground level
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	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises maps Figures 1 – 16.
prescribed premises	has the same meaning given to that term under the EP Act.

Term	Definition
putrescible waste	has the meaning defined in the Landfill Definitions
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December
RO	means reverse osmosis
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 January to 30 June and 1 July to 31 December
spot sample	means a discrete sample representative at the time and place at which the sample is taken
TSF	means Tailings Storage Facility
Uncontaminated Fill	has the meaning defined in the Landfill Definitions
µS/cm	means microsiemens per centimetre
waste	has the same meaning given to that term under the EP Act.
WWTP	means wastewater treatment plant

Schedule 1: Maps

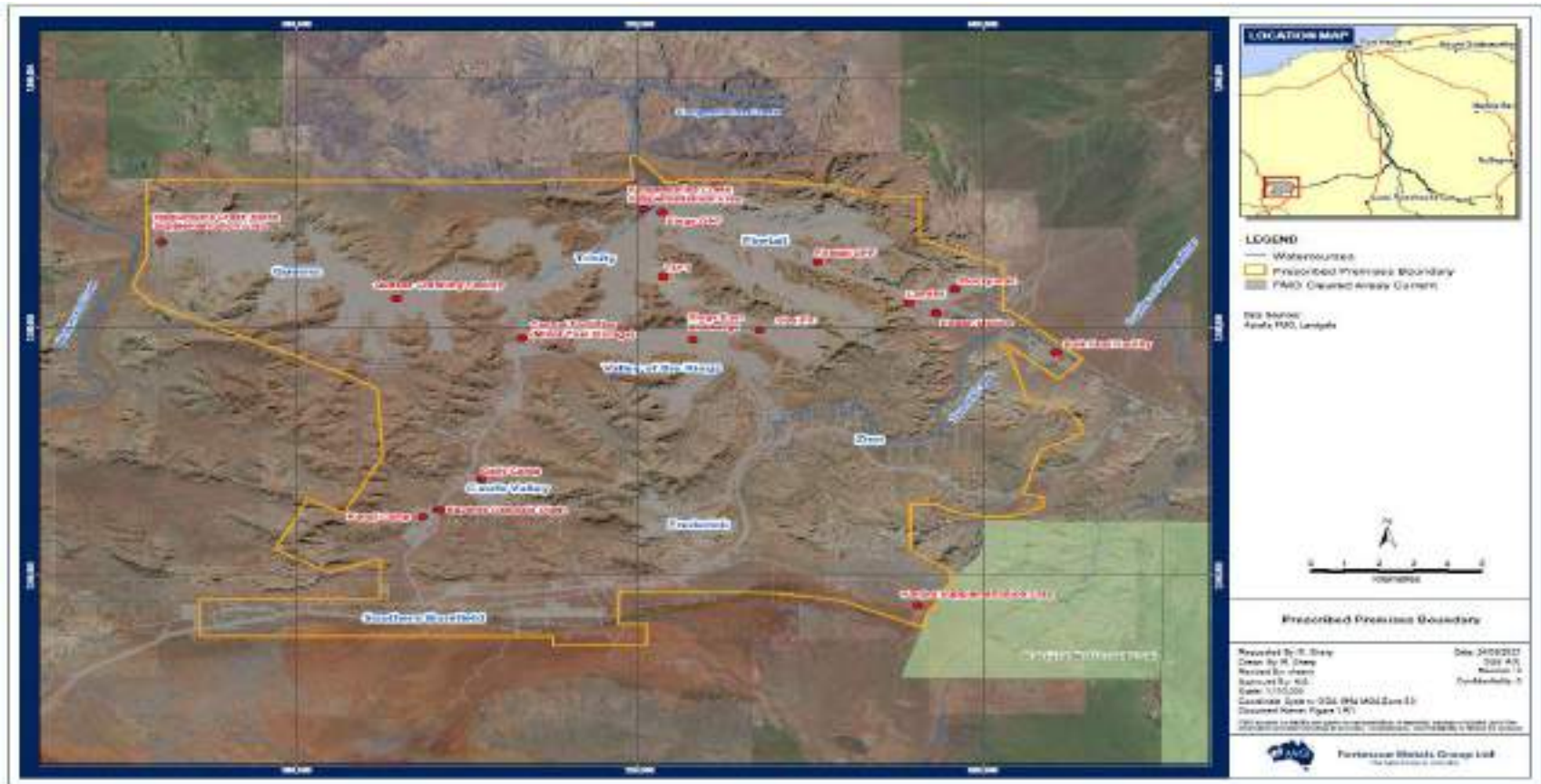


Figure 1: The Premises and Premises infrastructure. The yellow line depicts the Premises boundary

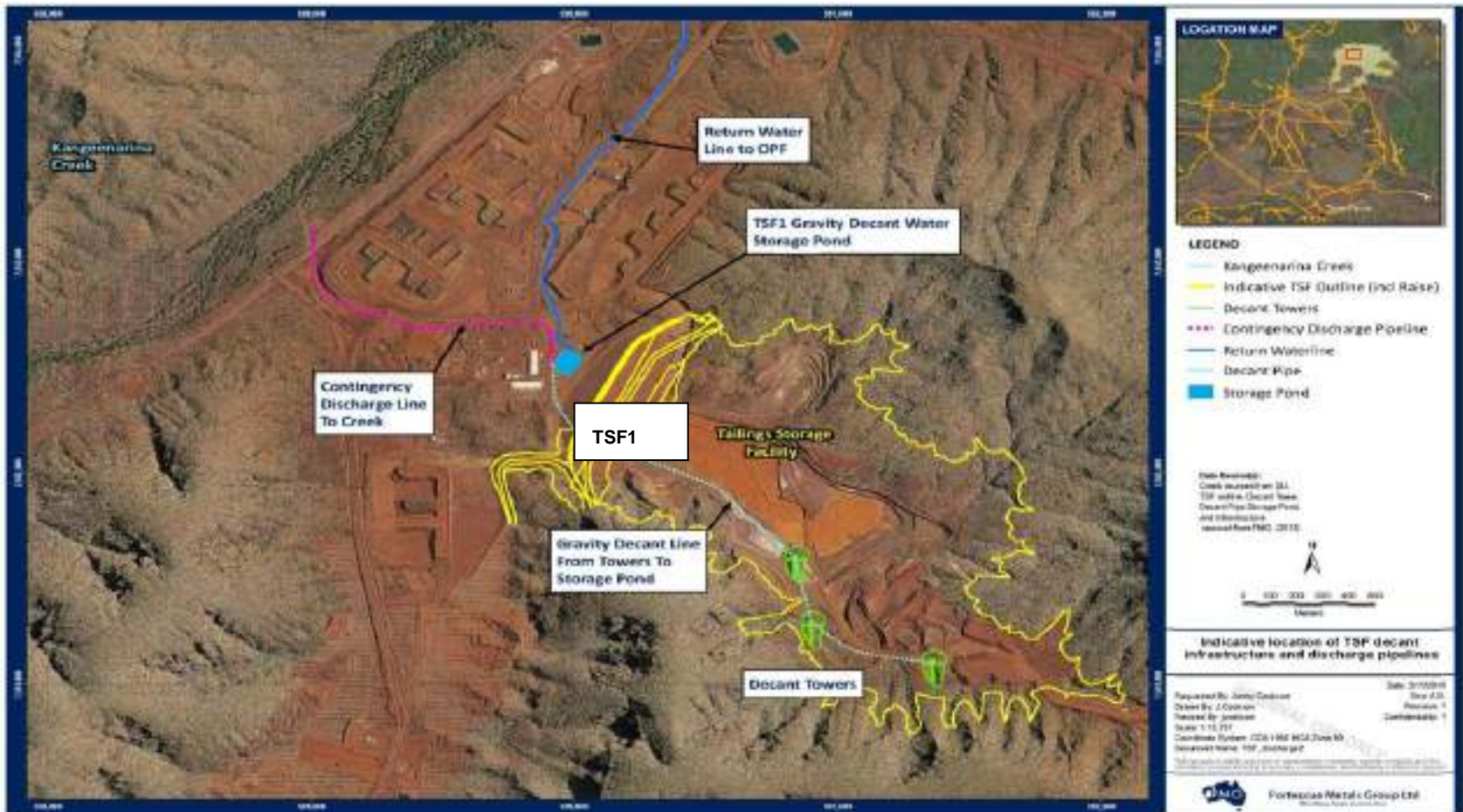


Figure 2: The location of the containment infrastructure defined in Condition 3, Table 2 and the contingency discharge pipeline defined in Condition 12, Table 7.

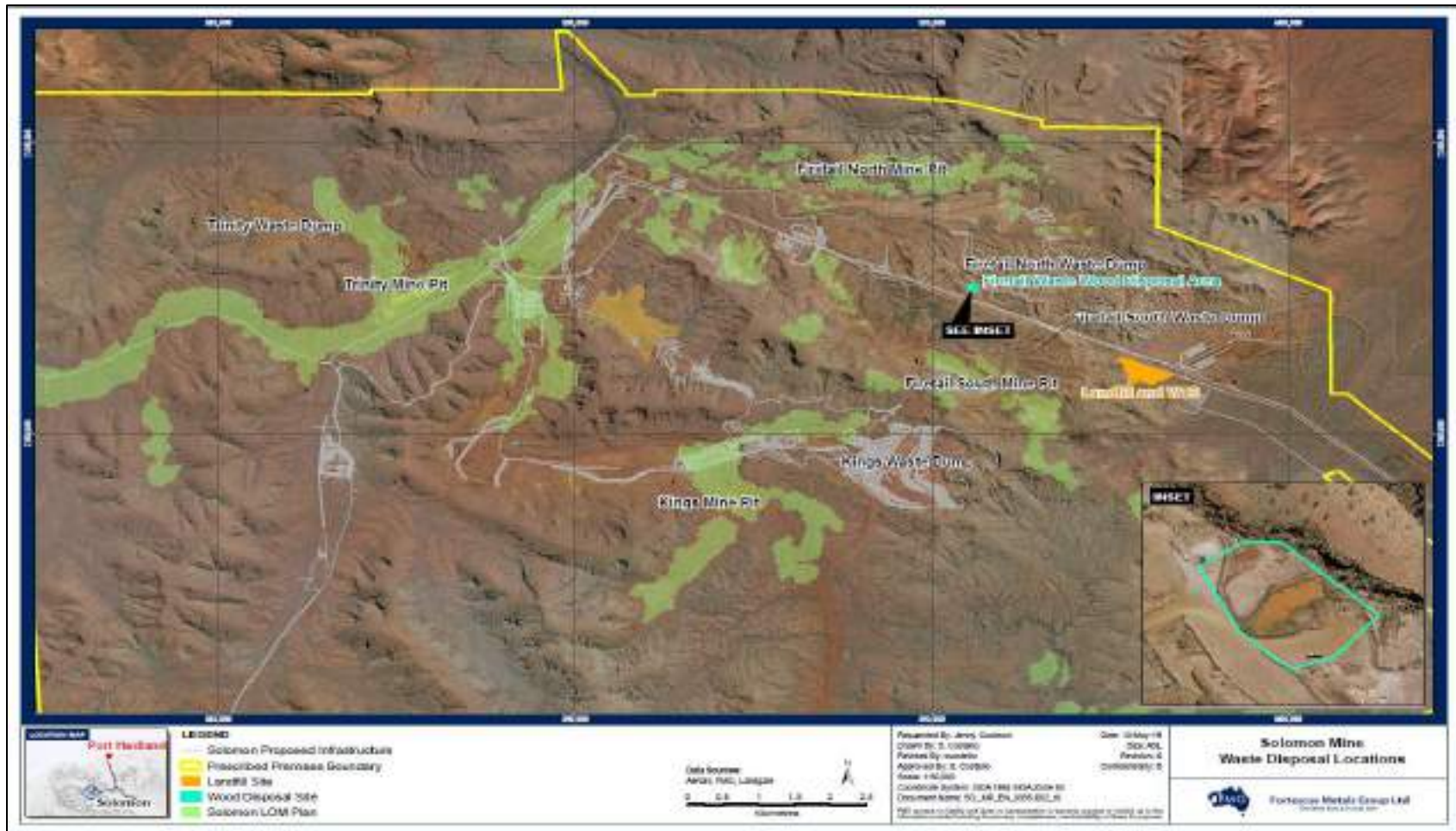


Figure 3: The used tyre and other waste rubber disposal sites as per Condition 4, Table 3. Firetail North Waste Dump and Firetail Waste Wood Disposal Area are for the disposal of untreated timber.

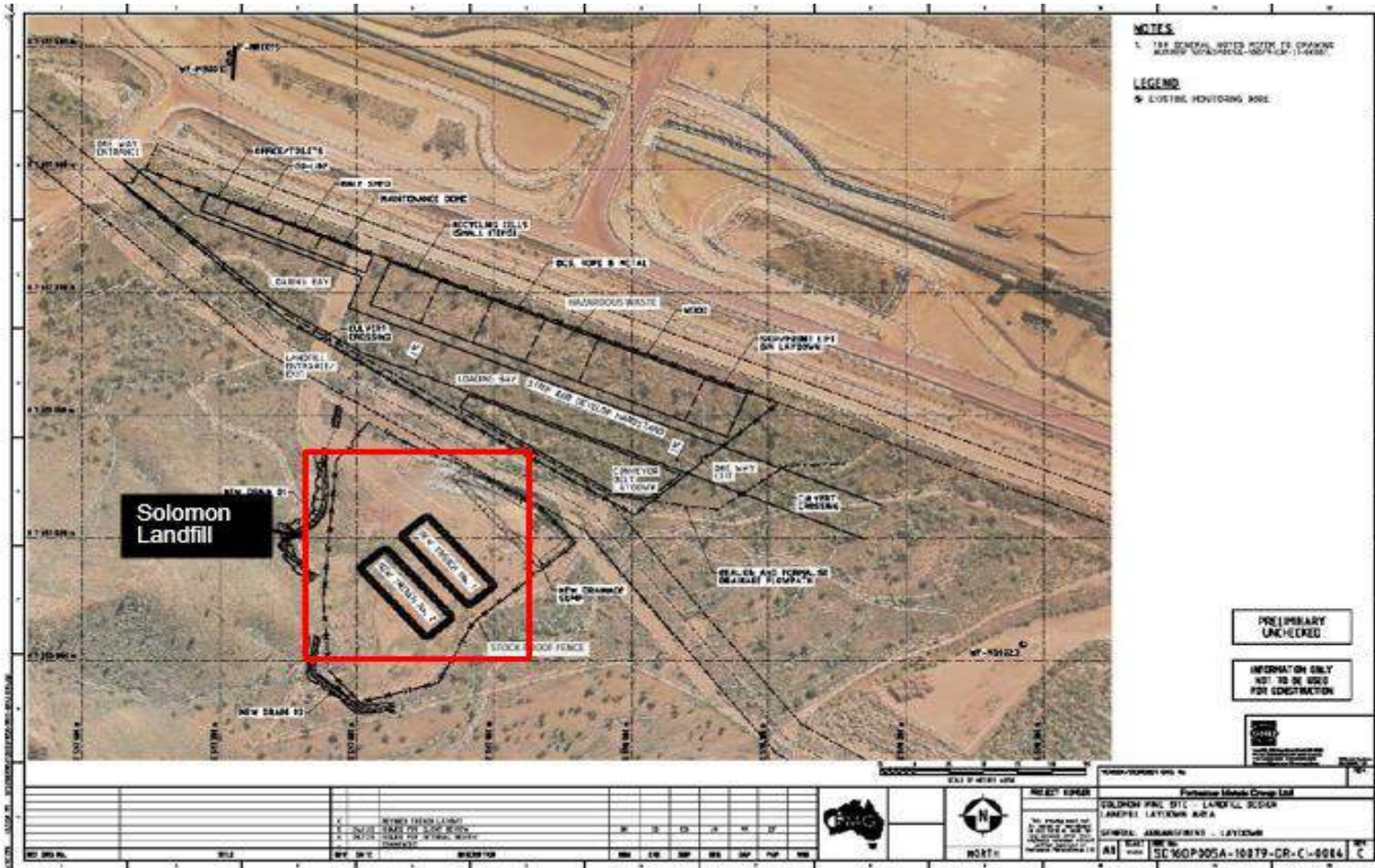


Figure 4: The used tyre and other waste rubber disposal sites as per Condition 4, Table 3. Firetail North Waste Dump and Firetail Waste Wood Disposal Area are for the disposal of untreated timber.



Figure 5: The location of emission and monitoring points defined in Condition 12, Table 7, Condition 13, Table 8, Condition 19, Table 11 and Condition 20, Table 12.

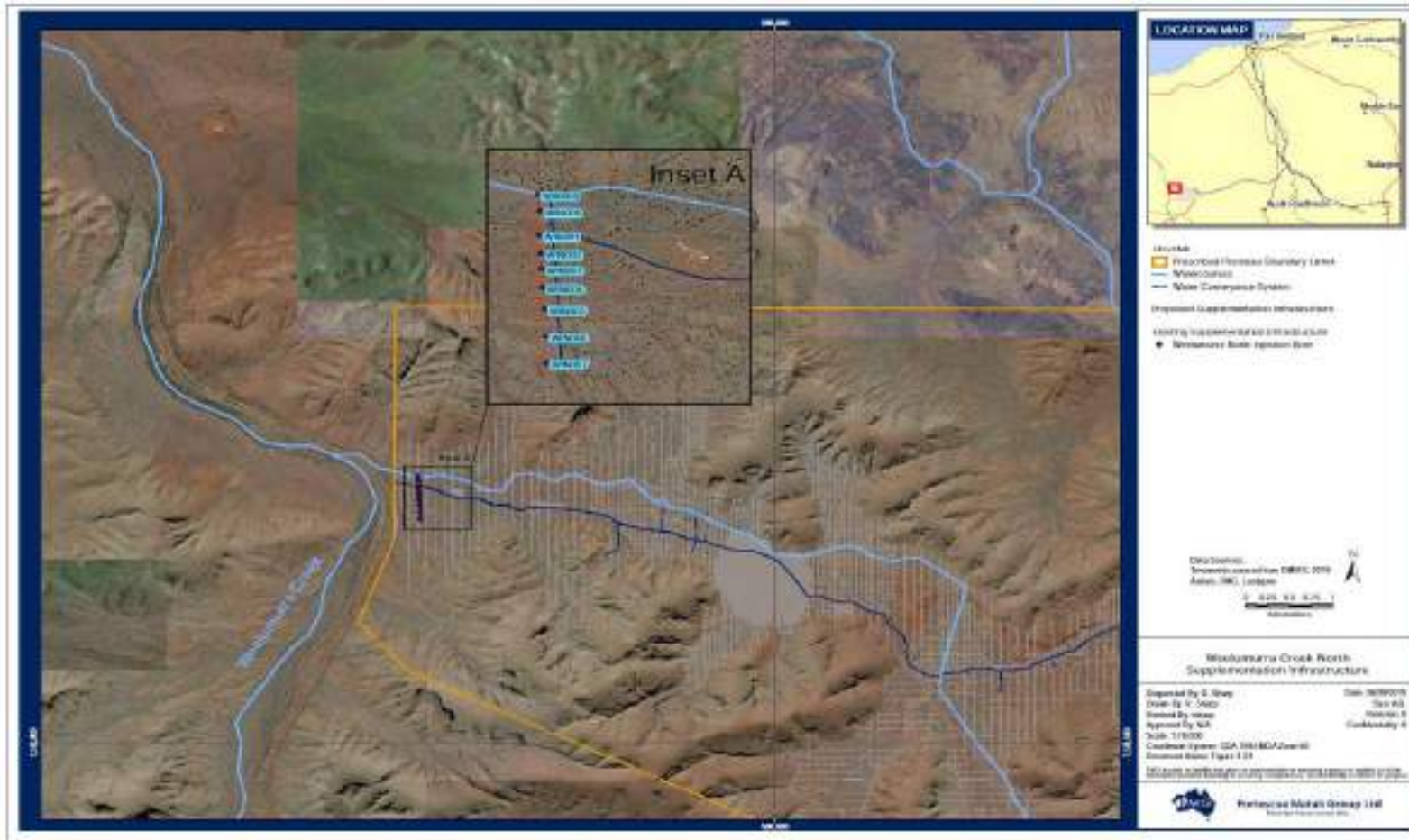


Figure 6: The location of emission and monitoring points defined in Condition 12, Table 7, Condition 13, Table 8, Condition 19, Table 11 and Condition 20, Table 12.



Figure 7: The location of emission and monitoring points defined in Condition 12, Table 7, Condition 13, Table 8, Condition 19, Table 11 and Condition 20, Table 12.



Figure 8: The locations of the emission points L1, L2 and L3, defined in Condition 14, Table 9, and location of the new bulk fuel facility.



Figure 9: The location of the monitoring point L4 defined in Condition 23, Table 15.

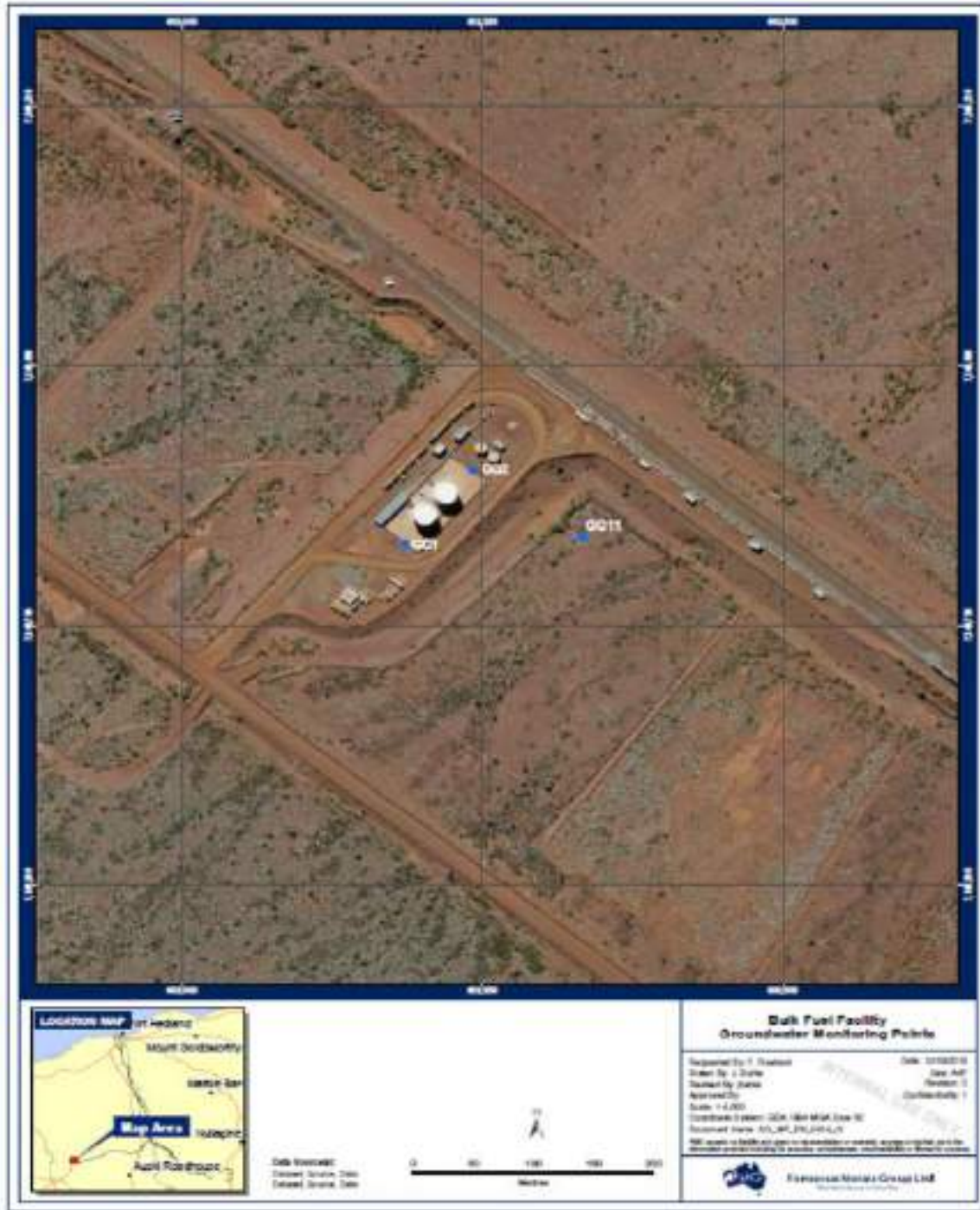


Figure 10: The locations of the Bulk Fuel Facility groundwater monitoring points defined in Condition 24, Table 16.

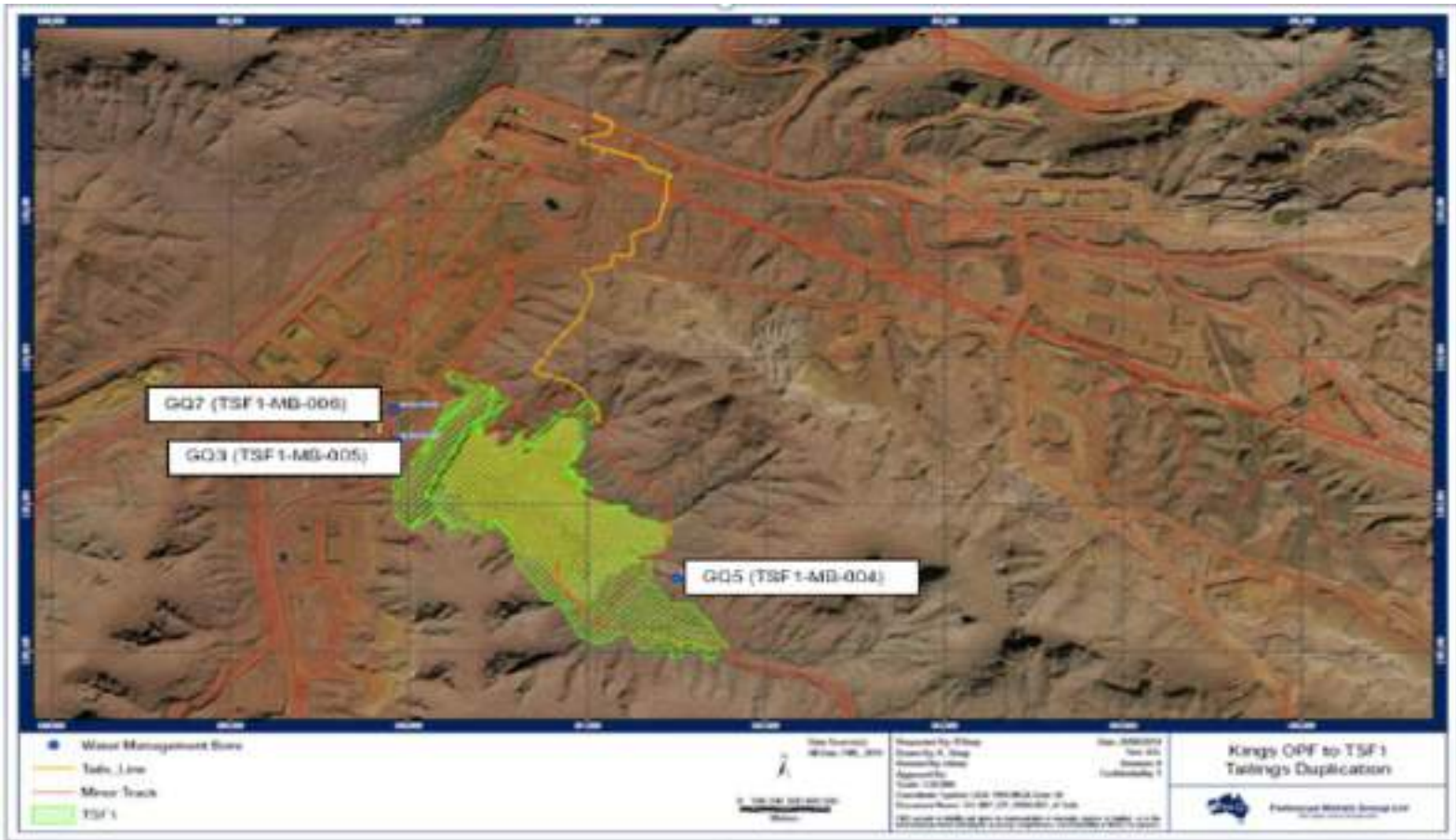


Figure 11: The locations of the TSF1 groundwater monitoring points defined in Condition 24, Table 16 and the tailings delivery pipeline.

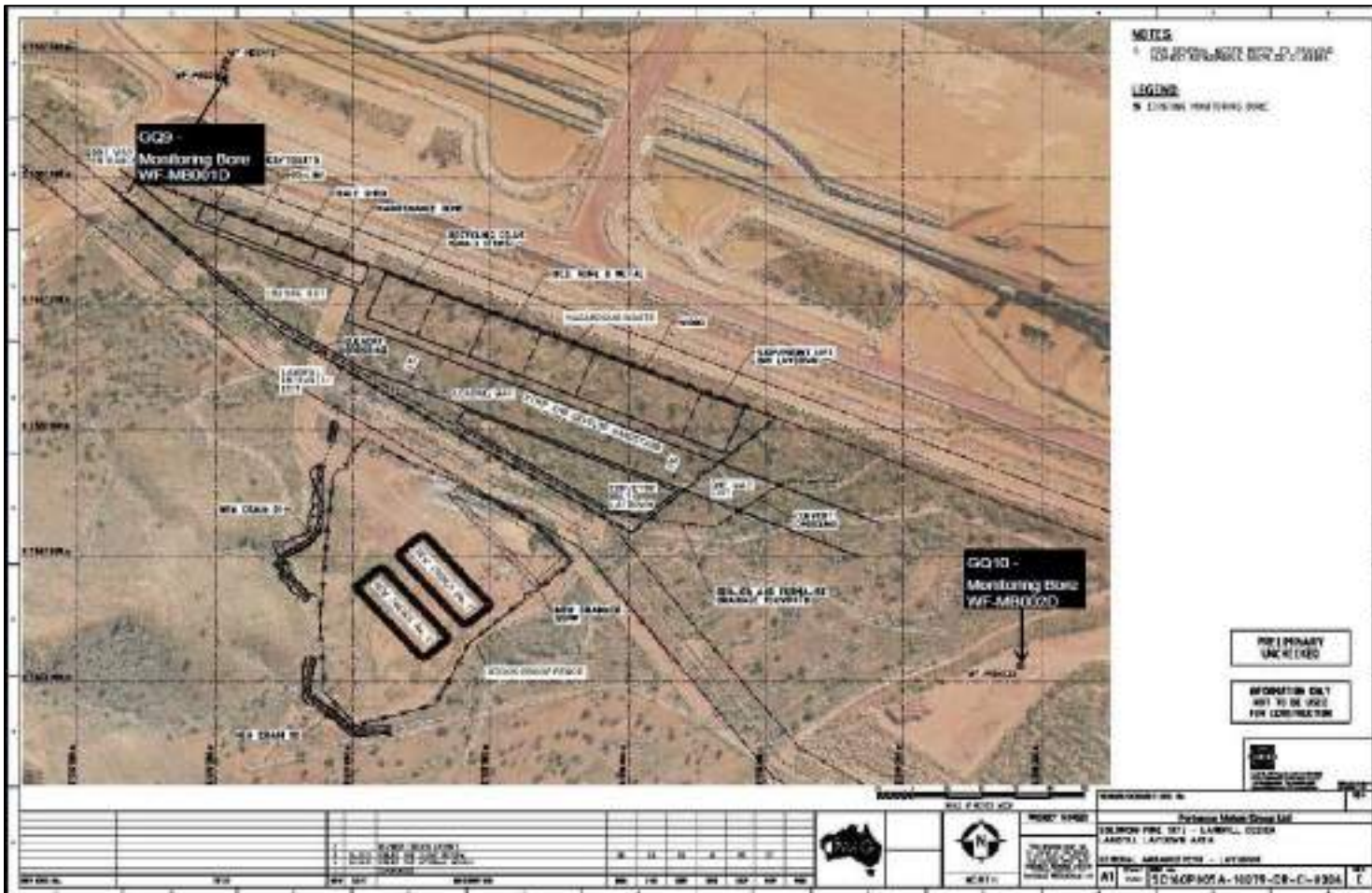


Figure 12: The locations of the Landfill monitoring points defined in Condition 24, Table 16.



Figure 13: Indicative Location of TSF Decant Infrastructure.

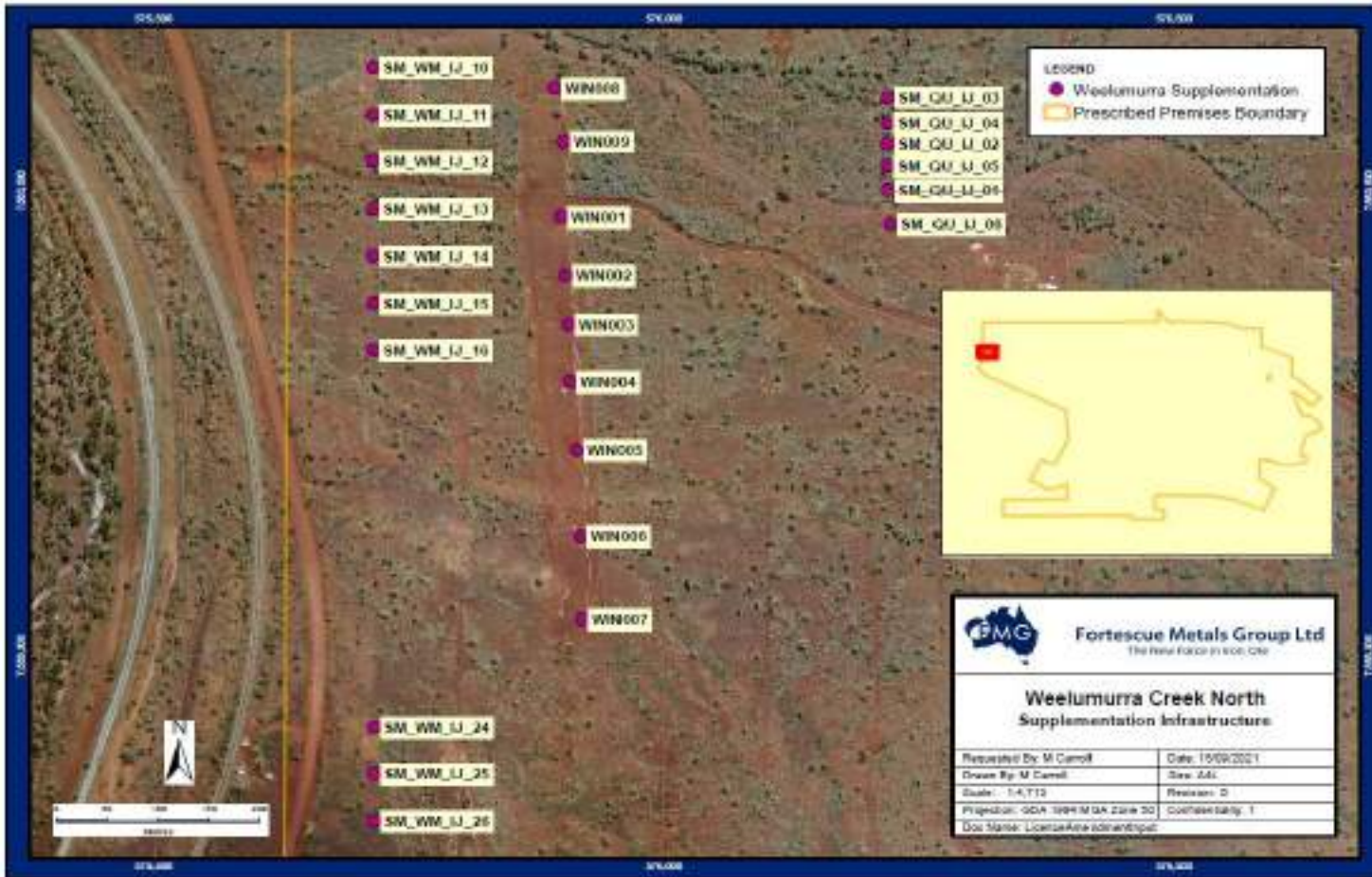


Figure 14: Weelumurra Creek North Supplementation Infrastructure.



Figure 15: Karijini National Park Supplementation Infrastructure.



Figure 16: Indicative Location of Kings East Aquifer Recharge System.

Schedule 2: Reporting & notification forms

Licence:

Licence holder:

Form: N1

Date of breach:

Notification of detection of the breach of a limit.

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 licence holder	
Date	