Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6958/2024/1
Works approval holder	Australian Garnet Pty Ltd
ACN	646 741 157
Registered business address	Level 3, 14 Walters Drive OSBORNE PARK WA 6017
DWER file number	DER2024/000404
Duration	04/03/2025 to 03/03/2029
Date of issue	04/03/2025
Premises details	Lucky Bay Garnet Project George Grey Drive YALLABATHARRA WA 6535 Legal description – Mining Tenements M70/1280, G70/253, L70/215, L70/134, L70/178, L70/239, G70/269, G70/271, L70/170, M70/1387 and L70/167 within Lot 1 on Diagram 91564, Lot 300 on Plan 60565 and Lot 1431 on Plan 251608 As defined by the Premises Map in Schedule 1 and the coordinates in Schedule 2.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production / design capacity
Category 8: Mineral sand mining or processing.	8,400,000 tonnes per annual period
Category 89: Putrescible landfill site: premises	5,000 tonnes per annual period
Category 62: Solid waste depot	20,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 04 March 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2025.03.04 12:37:22 +08'00'

SENIOR MANAGER, RESOURCE INDUSTRIES
INDUSTRY REGULATION (STATE-WIDE DELIVERY)
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
04/03/2025	W6958/2024/1	Works approval granted for: • upgrades to the Wet Concentration Plant and Dry Separation Plant; • construction of a putrescible landfill site; • construction of a dried clay Slimes Tailings Transfer Storage Area.

Interpretation

In this works approval:

(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 works approval:

(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 works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

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

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location

as set out in Table 1.

Table 1: Design and construction / installation requirements

Item number	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Wet Concentration Plant (WCP)	The WCP will have the following upgrades: a) Installation of new Constant Density (CD) tank design and new Cyclone pack; b) Relocation of the current CD tank transfer pump onto the new CD tank; c) Modification of the attrition circuit design to have a total of four cells compared to the original design of six cells.	Located within the area labelled as 'Central Processing Area' as depicted in Schedule 1, Figure 2 and labelled as 'WCP Upgrade' as shown in Schedule 1, Figure 3.
2.	Dry Separation Plant (DSP)	The (DSP) will have the following upgrades: a) Installation of additional diesel-fired rotary dryer with pulse jet fabric filter (baghouse) b) Installation of a new course unit; c) Installation of a course magnet bypass; d) Inclusion of Rare Earth Drum magnets on the final paramagnetic product under flow screens; e) Installation of air tables on final product streams.	Located within the area labelled as 'Central Processing Area' as depicted in Schedule 1, Figure 2 and labelled as 'DSP Upgrade' as shown in Schedule 1, Figure 3.
3.	Cyclone fan system	a) Installation of new cyclone fan system in the DSP.	Located within the area labelled as 'Central Processing Area' as depicted in Schedule 1, Figure 2 and labelled as 'DSP Upgrade' as shown in Schedule 1,

Item number	Infrastructure	Design and construction / installation requirements	Infrastructure location
			Figure 3 and 'Cyclone fan unit drawing' in Figure 5.
4.	Class II Putrescible Landfill Site	a) Landfill trenches to have a maximum open excavation of approximately 236m in length, 2m in depth and 20 metres in width; b) Lined with the following requirements: i. Lined with dried clay fines as 150 mm compacted layers for each lift to a minimum of 300 mm thickness; ii. Liner material must be homogenous in nature and properties, with no sandy patches exceeding the liner specification or rocks retained on a 37.5 mmm sieve. Any non-conforming liner material must be removed and replaced with confirming soil; iii. Liner to comprise a permeability of $1x10^{-9}$ m/s or less; and iv. Soils used for the lining must conform to the design specification for an effective water retaining structure. Soils must be free from plant roots and reactive, soluble and organic matter. The liner material consists of an inert and insoluble blend of sand, clay and silt particles that meet the minimum criteria as stated in the *WQPN 27* (DoW 2014). c) Designed to include a piped subsoil drainage system above the base liner: i. Pipework must penetrate a sidewall of the proposed landfill with required measures undertaken to prevent seepage around the exterior of the pipework while maintaining the structural integrity of the embankment;	Labelled as 'Landfill site', as depicted in Schedule 1, Figure 2 and 'Landfill site general arrangement' in Figure 4.

Item number	Infrastructure	Design and construction / installation requirements	Infrastructure location
		ii. Underdrainage system must drain leachate by gravity to a collection sump; iii. Underdrainage system must include graded filter layers (for example, gravel, sand, geotextiles) to prevent siltation of pipes; iv. Sump must be sized to contain any leachate and directly capture rainfall for a 1:20 year, 24-hour storm event; and v. Leachate in the sump must be collected by a suitably Licensed contractor for disposal at an off-site facility when leachate head limit is reached. d) A perimeter fence with lockable gates shall be installed around the boundary of the landfill area to prevent the access of unauthorised personnel and animals; e) Landfill trenches to be constructed 35 m from the perimeter fence; f) Landfill trenches shall be located at least 100 m from any surface water body. g) The base of the landfill cell shall be separated from the highest level of the superficial aquifer by a minimum of 3 m; h) A minimum 3 m firebreak shall be cleared around the fence of the landfill facility; i) Signage to be installed at the entrance of the landfill to indicate the types of waste accepted for burial; j) Bunds must be installed to divert stormwater away from the landfill and to retain water that has come into contact with the waste on site; and k) Construction quality assurance must adhere to the measures outlined in the *Lucky Bay Garnet Landfill Construction Quality Assurance Plan*.	

Item number	Infrastructure	Design and construction / installation requirements	Infrastructure location
5.	Slimes Transfer Storage Area	a) Construction of 3.235 ha bunded hardstand pad; b) The floor of the processing building is to meet a permeability of less than $1x10^{-9}$ m/s.	Labelled as 'Clay Slimes Export Storage Area' as depicted in Schedule 1, Figure 2.

Compliance reporting

2. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1;

(c) photographic evidence of the installation of the infrastructure;

(d) verification of quality control assurance for the Class II Putrescible Landfill Site in accordance with *Lucky Bay Garnet Landfill Construction Quality Assurance Plan*; and

(e) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

4. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 5 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 2 of this works approval.

5. The works approval holder must ensure that any environmental commissioning activities undertaken for an item of infrastructure specified in Table 2 are carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration of Table 2.

Table 2: Environmental Commissioning Requirements

Infrastructure	Commissioning requirements	Authorised commissioning duration
Dry Separation Plant (DSP) upgrade	Environmental commissioning of the DSP is comprised of six stages: a) Stage 1: Construction Verification (pre-commissioning); b) Stage 2: 24V dc Control Power-On (pre-commissioning); c) Stage 3: Service Voltage Testing; d) Stage 4: Mechanical (Dry/Cold) commissioning; e) Stage 5: Product-On (Load/Wet/Hot) commissioning; and f) Stage 6: Acceptance Testing. Stages 1 to 3 involves running the system and to measure noise levels with reference to the noise levels recorded by the manufacturer as the baseline. Discharges from the stack require air only. Stages 4 and 5 involves discharge dryer exhaust, water vapour, and potential particulates from the system. During commissioning of the baghouse and exhaust stack the noise and particulate emissions and/or discharges will be monitored and/or confirmed to establish or test a steady-state operation.	For a period not exceeding 120 calendar days in aggregate.

Environmental commissioning reporting

6. The works approval holder must submit to the CEO an Environmental Commissioning Report within 60 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 2.

7. The works approval holder must ensure the Environmental Commissioning Report required by condition 6 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of ore processed;

(b) a summary of the environmental performance of each item of infrastructure as constructed or installed;

(c) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(d) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

8. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 10,

(a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 2 and 3 has been submitted by the works approval holder for that item of infrastructure (excluding the Class II Putrescible Landfill Site);

(b) where the department has confirmed compliance, in writing, for the Class II Putrescible Landfill Site with respect to Condition 2 and 3, waste can be deposited in respective landfill areas in accordance with conditions of this works approval; and

(c) where the item of infrastructure is authorised to undertake environmental commissioning under condition 4, the Environmental Commissioning Report for that item of infrastructure as required by condition 6 has been submitted by the works approval holder.

9. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 10:

a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 8 for that item of infrastructure; or

b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before the end of the period specified in condition 9(a).

Time limited operations requirements and emission limits

10. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 3 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 3.

Table 3: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	**Operational requirement**	**Infrastructure location**
1.	Wet Concentration Plant (WCP)	a) Must not exceed the design capacity of 511 tph; and b) Any contaminated surface water runoff must be contained within the plant or directed toward the drainage sumps and returned to the Process	Located within the area labelled as 'Central Processing Area' as depicted in

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		Water Pond.	Schedule 1, Figure 2 and labelled as 'WCP Upgrade' as shown in Schedule 1, Figure 3.
2.	Dry Separation Plant (DSP)	a) Must not exceed the design capacity of 47 tph; and b) Any contaminated surface water runoff must be contained within the plant or directed toward the drainage sumps and returned to the Process Water Pond. c) New cyclone fan system in DSP to be maintained as per manufacturers specifications.	Labelled as "Dewatering Pipeline" in Schedule 1, Figure 2.
3	Class II Putrescible Landfill Site	a) The volumes and type of waste discharged into landfill must be recorded; b) No more than one landfill cell in operation at any one time; c) Boundary fencing shall be maintained around the landfill facility to contain windblown waste; d) Wind-blown waste must be collected on a weekly basis and returned to the tipping area; e) Bunding constructed to divert clean stormwater around the landfill to be maintained; f) No burning of waste to occur; g) Maintain and operate the subsoil drainage system; h) Maintain and operate the sump to capture rainfall for a 1:20 year, 24-hour storm event; and i) Leachate in the sump must be collected by a suitably Licensed contractor for disposal at an off-site facility when the freeboard limit is reached. Any settled solids must be periodically removed; and j) Waste landfilled must be in accordance with condition 11 and 12.	Labelled as 'Landfill site' as depicted in Schedule 1, Figure 2.

	Site infrastructure and equipment	Operational requirement	Infrastructure location
4	Slimes Transfer Storage Area	a) Bunding constructed around the hardstand pad to be maintained.	Labelled as 'Clay Slimes Export Storage Area' as depicted in Schedule 1, Figure 2.

11. During time limited operations, the works approval holder must only dispose of waste of a waste type that meets the relevant acceptance specification as set out in Table 4.

Table 4: Types of waste authorised to be disposed of to landfill

Facility	Waste Type[1]	Quantity limit	Infrastructure location
Class II Putrescible Landfill Site	Clean fill	500 tonnes per annual period (combined limit)	'Landfill site' as depicted in Schedule 1, Figure 2.
	Inert Waste Type 1		
	Inert Waste Type 2		
	Putrescible Waste		

Note 1: all waste must be derived from on-site.

12. The works approval holder must ensure that cover is applied to landfilled waste in accordance with Table 5 and that sufficient stockpiles of cover are maintained on site at all times.

Table 5: Cover requirements

Disposal location	Waste Type	Infrastructure location
Class II Putrescible Landfill	Clean fill	To be covered at least monthly with Type 1 inert waste or clean fill material to a depth of at least 200mm to ensure no waste is exposed. Final capping of completed landfilled areas to comprise of a minimum 300 mm compacted clay layer that meets a permeability of less than $1x10^{-9}$ m/s. The surface of which must be graded to prevent the pooling or ingress of surface water.
	Inert Waste Type 1	
	Inert Waste Type 2	
	Putrescible Waste	

Emissions during time limited operations

13. The works holder must ensure that waste emitted to air from the DSP during operational activities is emitted in accordance with the requirements specified in Table 6.

Table 6: Types of waste authorised to be disposed of within the premises

Emission point and source	Emission point height (m)	Pollution control equipment	Location
DSP – rotary dryer stack (Baghouse 1)	3 (minimum)	Pulse jet fabric filter (baghouse) or equivalent	Labelled as 'Dryer and Baghouse' as depicted in Schedule 1, Figure 3.
DSP – rotary dryer stack (Baghouse 2)[1]			
DSP – rotary dryer stack (Baghouse 3)[1]			

Note 1: DSP – rotary dryer stack (Baghouse 3) is the primary operational unit, where DSP – rotary dryer stack (Baghouse 2) remains as a standby unit only. Only one of these dryer units can operate at a time.

Compliance reporting

14. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 60 calendar days before the expiration date of the works approval, whichever is the sooner.

15. The works approval holder must ensure the report required by condition 14 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of material processed;

(b) a summary of the environmental performance of all infrastructure as constructed or installed,

(c) a review of performance and compliance against the conditions of the works approval; and

(d) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

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

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

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

(a) the works conducted in accordance with condition 1;

(b) waste disposal records for the requirements specified in condition 11;

(c) waste cover records for the requirements specified in condition 12;

(d) any maintenance of infrastructure that is performed in the course of complying with this works approval; and

(e) complaints received under condition 16.

18. The books specified under condition 17 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 7 have the meanings defined.

Table 7: Definitions

Term	Definition
annual period	a 12-month period commencing from 1 January until 31 December of the immediately following year.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Condition	A condition to which this works approval is subject under section 62 of the EP Act.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
landfill definitions	means the document titled "*Landfill Waste Classification and Waste Definitions 1996*" published by the Chief Executive Officer of the Department of Water and Environmental Regulation as amended from time to time.
leachate head limit	means a maximum head limit of 300mm on the liner surface (as measured in the HDPE stormwater/leachate pit – refer to Figure 4)
Lucky Bay Garnet	means the *Lucky Bay Garnet Landfill Construction Quality Assurance*

Term	Definition
Landfill Construction Quality Assurance Plan	*Plan, January 2025,* prepared by MBS Environmental for Australian Garnet Pty Ltd.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
putrescible waste	has the same meaning given to that term in the Landfill Definitions.
suitably qualified engineer	means a person who: a) holds a Bachelor of Engineering recognised by the Institute of Engineers, Australia; and b) has a minimum of at least five years of experience working in the area of civil engineering or is otherwise approved by the CEO to act in this capacity.
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
waste	has the same meaning given to that term under the EP Act.
WQPN 27 (DoW 2017)	means the Department of Water, 2017, *Water Quality Protection Note 27: Liners for containing pollutants using engineered soils,* Perth, Western Australia.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

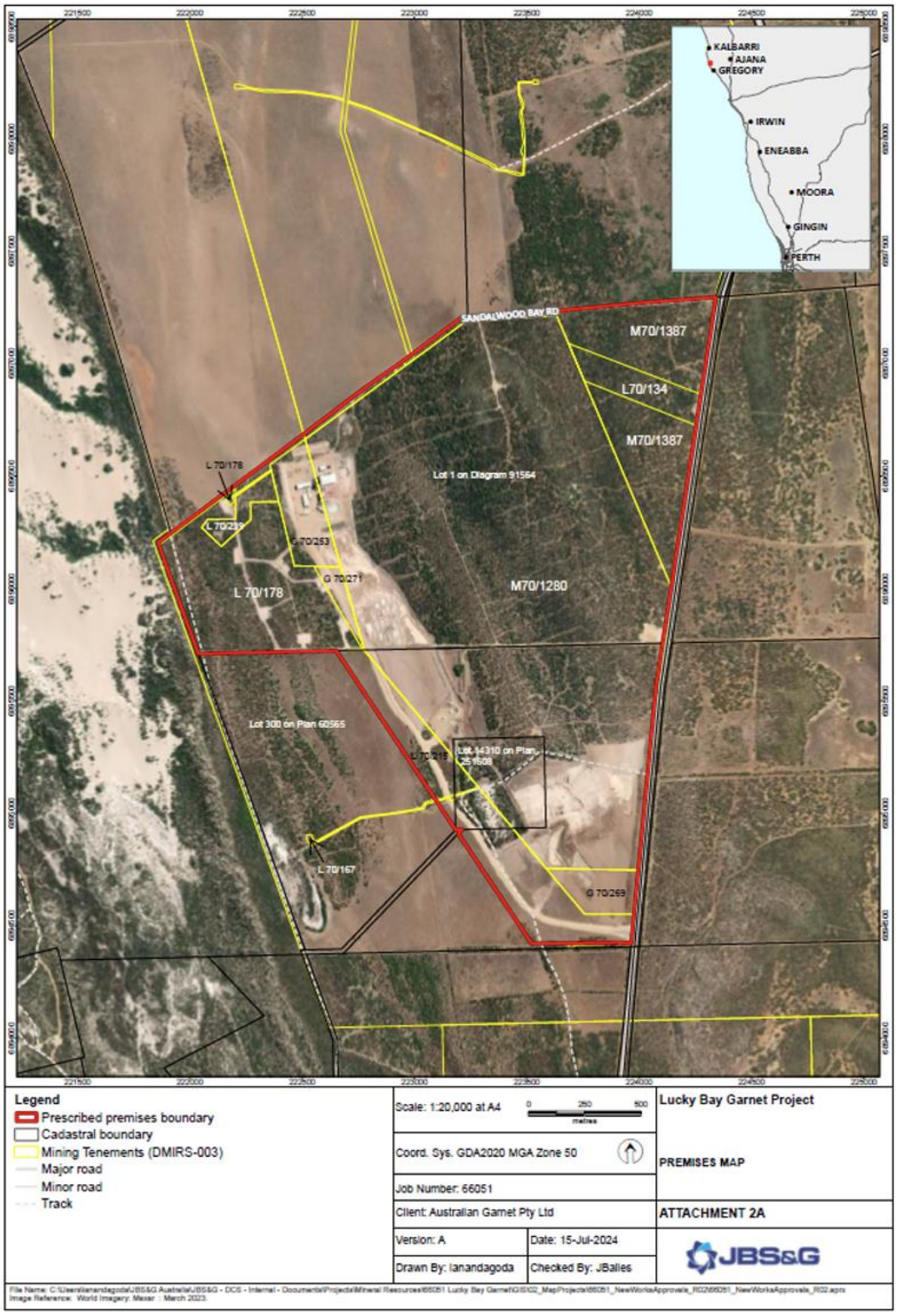

Figure 1: Map of the boundary of the prescribed premises

Premises layout map

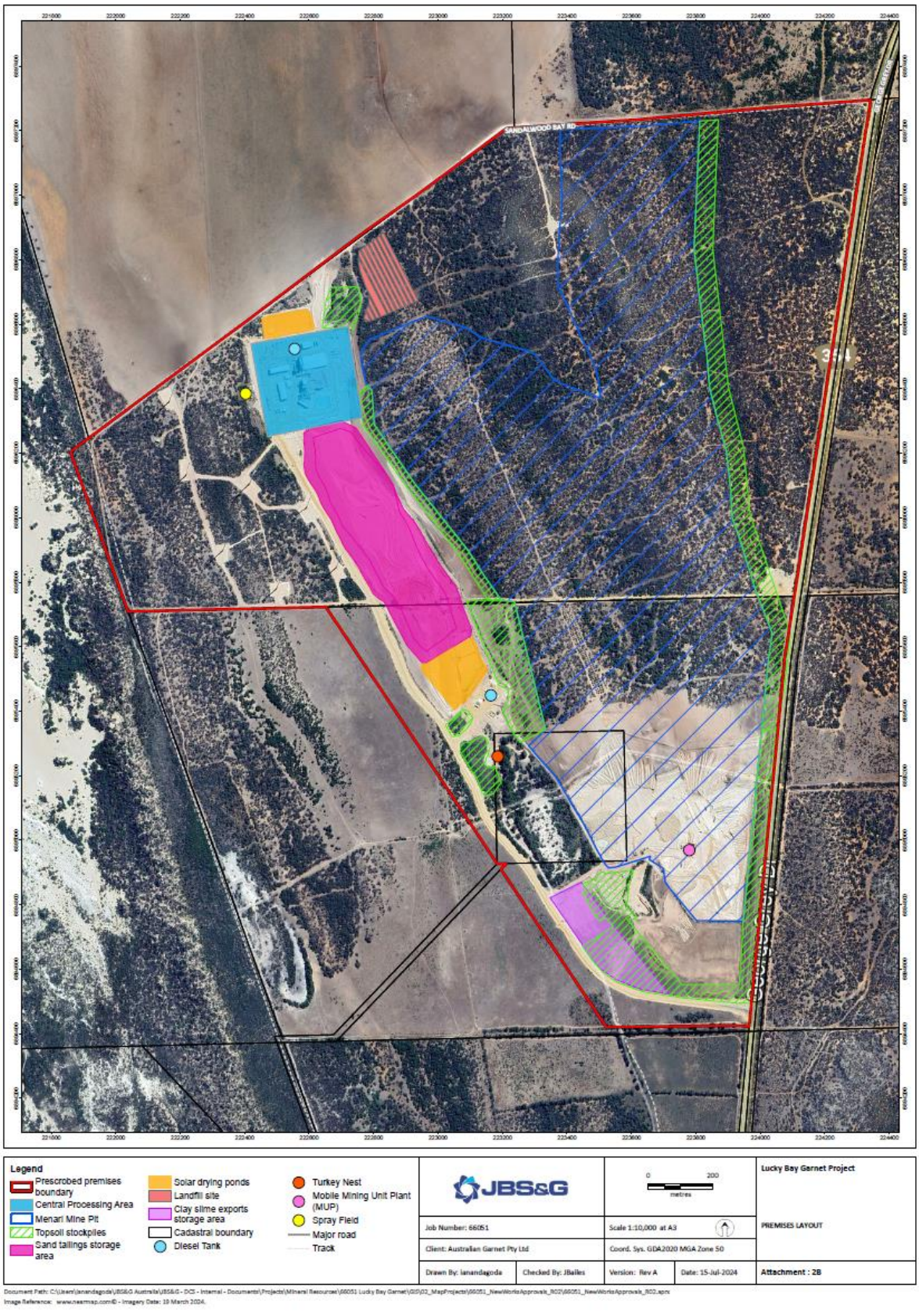

Figure 2: Prescribed Premises layout map

Processing plant upgrades map

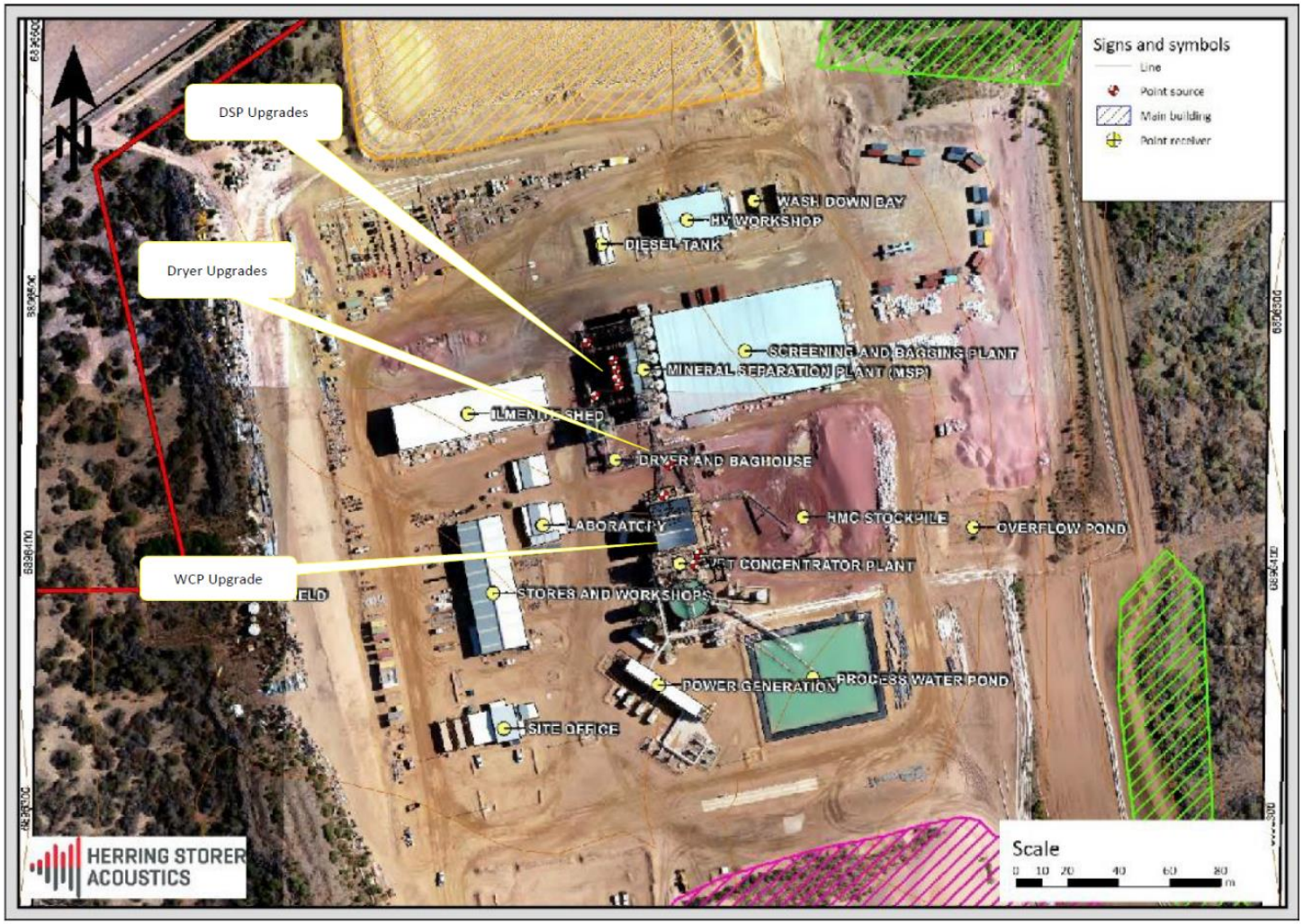

Figure 3: Proposed processing plant upgrades within the Central Processing Area

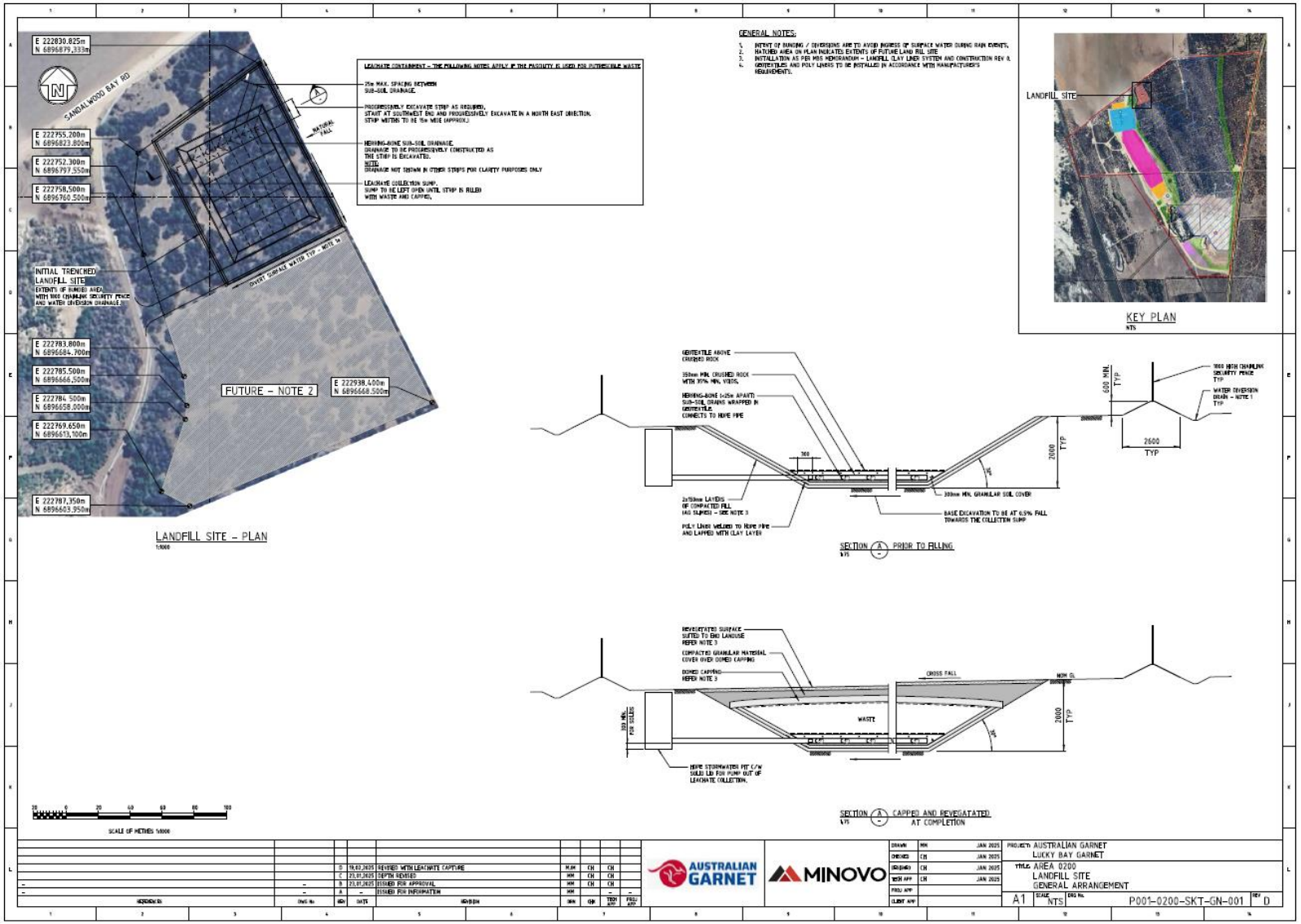

Figure 4: Landfill site general arrangement

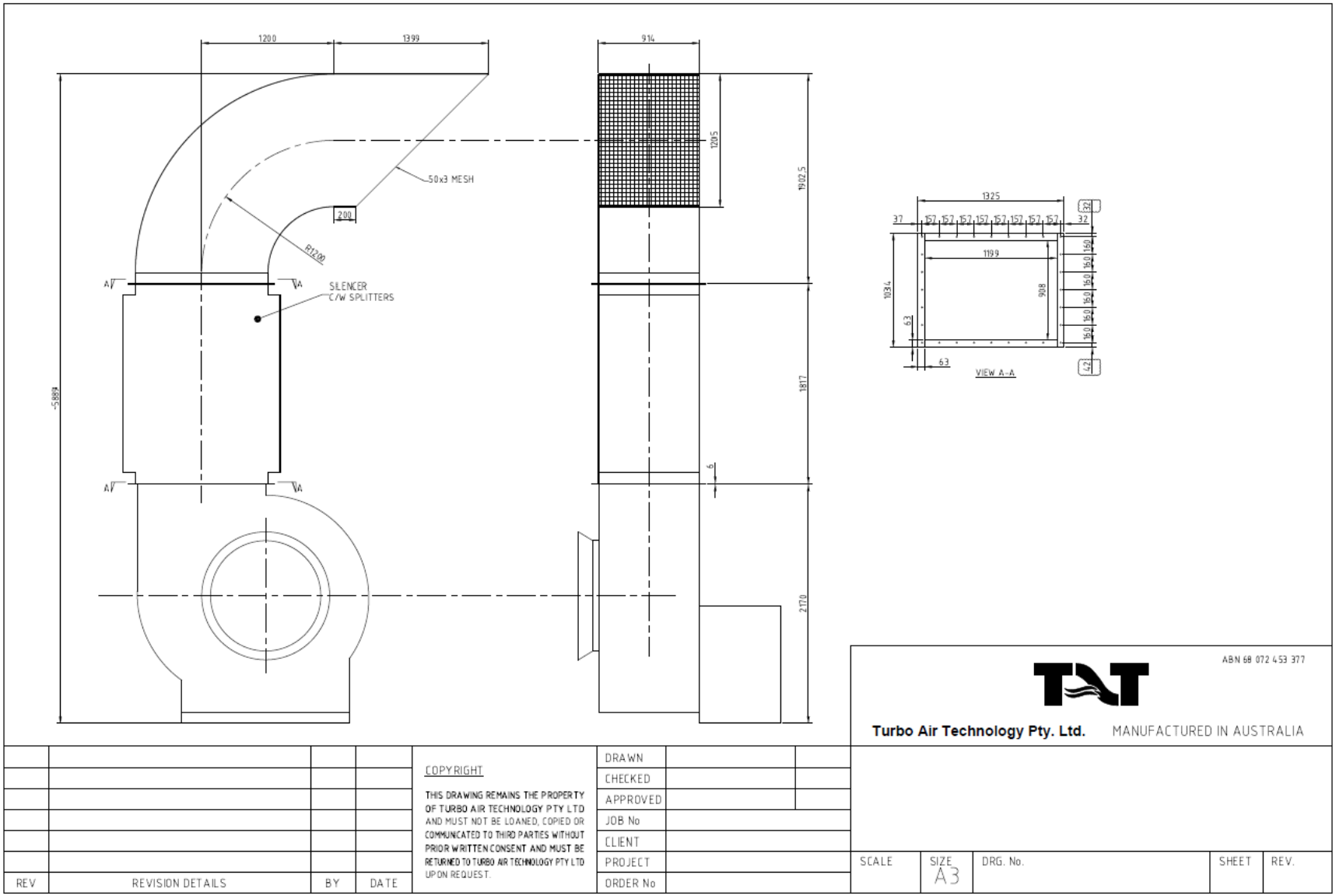

Figure 5: Cyclone fan unit drawing

Schedule 2: Premises boundary

The corners of the premises boundary are the coordinates listed in Table 8.

Table 8: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
1.	223967.91	6894420.21	50
2.	223525.09	6894421.08	50
3.	222648.75	6895720.65	50
4.	222038.93	6895706.51	50
5.	221860.14	6896201.46	50
6.	223214.67	6897208.84	50
7.	224344.64	6897290.35	50