Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W2814/2024/1
Works approval holder	Opalvale Pty Ltd
ACN	106 512 896
Registered business address	50 Clune Street BAYSWATER
DWER file number	INS-0002814
Duration	06/03/2025 to 05/03/2030
Date of issue	6 March 2025
Premises details	Salt Valley Road Class II Landfill Chitty Road, HODDYS WELL WA 6566 Legal description - Part of Lot 11 on Deposited Plan 34937 Certificate of Title Volume 2535 Folio 391 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production / design capacity**
Category 64: Class II putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the *Landfill Waste Classification and Waste Definitions 1996*, is accepted for burial.	150,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 6 March 2025, by:

Abbie Crawford

Digitally signed by Abbie Crawford
Date: 2025.03.06 10:36:54 +08'00'

Abbie Crawford
Manager, Waste Industries

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
06/03/2025	W2814/2024/1	Works approval granted.

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 the critical containment infrastructure;

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

(c) at the corresponding infrastructure location.

as set out in Table 1.

Table 1: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Landfill cell 5	Must be constructed according to the details in Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6.	As shown in Figure 2 in Schedule 1: Maps labelled as Cell 5
2.	Landfill cell 6	Must be constructed according to the details in Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6.	As shown in Figure 2 in Schedule 1: Maps labelled as Cell 6
Landfill Cells 5 & 6			
3.	Site preparation / subgrade	• All general fill must meet the requirements for suitable material as per AS 3798; • All fill material to be compacted in accordance with AS 3798 to 95% of its MMDD in layers not exceeding 300 mm; and • The subgrade must be smooth, free of debris, roots, sticks and sharp rocks.	As shown in Figure 3 in Schedule 1: Maps
4.	Engineered fill layer	• Must have a minimum thickness of 500 mm; • No clods of greater than 300 mm across must be placed; • Must have a moisture content, during and after compaction, within the range of optimum moisture content (OMC) ±3% as determined by the methods test AS 1289, to >95% MMDD; and • Engineered fill and subgrade is to be protected from desiccation prior to placement of the GCL.	As shown in Figure 3 and Figure 4 in Schedule 1: Maps
5.	Layer 1 – Geosynthetic clay	Cells 5 and 6 GCL must be designed and constructed to the following specifications:	As shown in Figure 3 and Figure 4 in

	Infrastructure	Design and construction requirements	Infrastructure location
	liner (GCL)	• Must be a needle punched multi-layered system comprising of two layers of geotextiles encapsulating a layer of dry bentonite; • Must be certified as needle free; • Installed in direct contact with the engineered fill layer; • Must have a hydraulic conductivity of ≤ 3.0 x 10^{-11} m/s (MaxARV) or ≤ 2.4 x 10^{-11} (typical); • The GCL must be free of defects; • No transverse jointing/overlapping of geosynthetic panels on side slopes; • GCL installed on the landfill side slopes must be fixed in anchor trenches and must be deployed down the slope in a manner as to keep the GCL panel in tension; • The GCL must be installed in a manner that prevents the entrapment of any stones, excessive dust or moisture or any other material that could damage the GCL; • Seams must have a minimum overlap of 300 mm and must be joined by the addition of bentonite paste applied to a minimum width of 200 mm and a nominal thickness of 10 mm; • Must be installed in accordance with the manufacturers specifications; and • Must be installed in a manner that prevents wrinkles or folds in the liner layer.	Schedule 1: Maps
6.	Layer 2 – Geomembrane	• Must consist of 2 mm thick textured High Density Polyethylene (HDPE); • The HDPE liner must be uniform and free of defects; • Must have a minimum overlap of 100 mm between panels; • Must be installed in accordance with the manufacturers specifications; • Must not be installed in the presence of water; and • Must be installed in a manner that prevents wrinkles or folds in the liner layer.	As shown in Figure 3 and Figure 4 in Schedule 1: Maps
7.	Layer 3 – Cushion / protection geotextile	• Must be non-woven needle punched constructed from fibres of polypropylene or polyester, incorporating 1% by weight activated carbon or another UV stabiliser; • Geotextile to be certified needle free;	As shown in Figure 3 and Figure 4 in Schedule 1: Maps

	Infrastructure	Design and construction requirements	Infrastructure location
		• No transverse jointing/overlapping of geosynthetic panels on side slopes; • Must be installed in a manner that to prevent damage to the geotextile and prevent wrinkles in the liner layer; • Seams on side slopes must be oriented with the slope and must have a minimum overlap of 300 mm; • Must not be installed during heavy rain or winds; • Must be free of defects; and • Must be installed in accordance with the manufacturers specifications.	
8.	Layer 4 – Leachate collection layer	Leachate collection pipework: • Must consist of perforated high density polyethylene (HDPE) pipes; • Must consist of a 225 mm primary collection pipe and a series of 160 mm secondary pipes spaced a maximum of 25 m apart; • All pipes to be laid upon 100 mm of drainage layer aggregate; • All pipes to be laid in accordance with manufacturers specifications; • All pipes to drain toward the leachate collection sump; • Basal gradients must not be less than 3 per cent to the primary collection pipe and 1 per cent to the extraction sump; • Pipes to be free of defects; and • Must be installed in a manner that prevents damage to the geotextile liner.	As shown in Figure 4 in Schedule 1: Maps
		Leachate drainage aggregate: • Must have a hydraulic conductivity of >1x10^{-3} m/s; • Aggregate must consist of a low calcareous aggregate; • Fines (<0.075 mm) content must be less than 1%; and • Must be a minimum of 300 mm thick.	As shown in Figure 4 in Schedule 1: Maps
		Leachate collection sumps: • Must be installed in a manner that prevents damage to the geotextile liner;	As shown in Figure 5 and Figure 6 in Schedule 1: Maps

	Infrastructure	Design and construction requirements	Infrastructure location
		• Must have a 150 mm (minimum) thick concrete slab; • Must contain a primary 355 mm side riser pipe and a secondary pipe for contingency; • Must contain a submersible electric pump inside the primary riser pipe; and • Bottom of the leachate sump to be a minimum of 2 m above the highest natural recorded groundwater level.	
9.	Layer 5 – Separation geotextile	• Must be non-woven needle punched constructed from fibres of polypropylene or polyester, incorporating 1% by weight activated carbon or another UV stabiliser; • Must be certified needle free; • The separation geotextile must extend 1 m beyond the leachate collection layer; • Seams on side slopes must be oriented with the slope and must have a minimum overlap of 300 mm; • No transverse jointing/overlapping of geosynthetic panels on side slopes; • Permanent sandbags must be placed at a minimum of 5 m along the seams and either side of the primary and secondary leachate collection pipe aggregate mound, change of grade between basal and side slops and external perimeter of the separation geotextile to prevent uplift; • Must not be installed during heavy rain or winds; • Must be free of defects; • Must be installed in accordance with the manufacturers specifications; and • No vehicles to be driven over this layer.	As shown in Figure 3 and Figure 4 in Schedule 1: Maps

Construction quality assurance requirements

2. The works approval holder must undertake construction quality assurance (CQA) testing for the geosynthetic clay liner installed within cells 5 and 6 in accordance with the specifications outlined in Table 2.

Table 2: Geocomposite clay liner (GCL) CQA requirements

Item	Property	Standards	Frequency
Conformance Quality Assurance testing (sampled at the point of manufacture or on site, as determined by the superintendent / CQA consultant)	Thickness (dry)	ASTM D1777	1 sample per 2,500 m^2
	Mass per unit area of bentonite component	ASTM D5993	1 sample per 2,500 m^2
	Mass per unit area of GCL	ASTM D5993	1 sample per 2,500 m^2
	Montmorillonite content (X-ray diffraction method)	>70 wt%	1 sample per 10,000 m^2
	Cation exchange capacity of bentonite (methylene blue method)	≥70 meq/100g (or cmol/kg)	1 sample per 20,000 m^2
	Mass/unit length of bentonite in overlaps (visual inspection and weighing)	ASTM D5993	1 sample per 2,500 m^2 Daily visual inspections
	Moisture content of bentonite	AS 1289.2.1.1	1 sample per 2,500 m^2
	Swell index/free swell of clay	ASTM D5890	1 sample per 5,000 m^2
	Fluid loss	ASTM D5891	1 sample per 5,000m^2
	Peel strength (for needle-punched products only)	ASTM D6496	1 sample per 4,000m^2
	Permeability	ASTM D5887	1 sample per 25,000 m^2
	Tensile strength	ASTM D4595	1 sample per 10,000 m^2
	CBR of geotextile	AS 3706.4	1 sample per 25,000 m^2
	Puncture resistance of geotextile	AS 3706.5	1 sample per 25,000 m^2
	Index flux	ASTM D5887	1 sample per 25,000 m^2

Item	Property	Standards	Frequency
Visual inspection of GCL (i.e., uniformity of bentonite distribution) and apparent variations in the as placed moisture distribution	Colour, thickness, needle punching, presence of needles or broken needles, and sewing density or other faults in the material	N/A	Every roll
	Thickness of GCL (i.e. uniformity of bentonite distribution) and apparent variations in the as placed moisture distribution	N/A	Each roll during placement. If thickness appears to be variable a check of the variability of the mass per unit area should be conducted

3. The works approval holder must undertake construction quality assurance (CQA) testing for the geomembrane (HDPE) installed within cells 5 and 6 in accordance with the specifications outlined in Table 3.

Table 3: Geomembrane (HDPE) CQA requirements

Item	Property	Standards	Frequency	Minimum Value
Conformance Quality Assurance testing (sampled at the point of manufacture or on site, as determined by the Superintendent / CQA consultant)	Thickness	ASTM D5994	One sample every 5,000 m^2 or every five rolls delivered to site – whichever is the greatest number of tests	Nom. (-5%) -10% (lowest individual for 8 out of 10 values) -15% (lowest individual for any of the 10 values)
	Asperity height	ASTM D7466		0.4 mm
	Density	ASTM D1505 / ASTM D792		0.940 g/cc
	Tensile properties (a) Yield strength (b) Break strength (c) Yield elongation (d) Break elongation	ASTM D6693 Type IV		(a) 29 kN/m (b) 21 kN/m (c) 12% (d) 100%
	Tear resistance	ASTM D1004		249 N
	Puncture resistance	ASTM D4833		534 N

Item	Property	Standards	Frequency	Minimum Value
	Stress crack resistance	ASTM D4833	One sample every 10,000 m^2, or resin type or manufacturing run	500 hr.
	Carbon Black Content	ASTM D4218	One sample every 5,000 m^2 or every five rolls delivered to site – whichever is the greatest number of tests	2.0 – 3.0 %
	Carbon Black Dispersion	ASTM D5596		Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in categories 1 or 2 and 1 in category 3
	Oxidation Induction Time (OIT) (a) standard OIT Or – (b) High pressure OIT	ASTM D3895 ASTM D5885	One sample every 10,000 m^2, or resin type or manufacturing run	100 min 400 min
Start-up test weld	Welding equipment	N/A	Checked daily at start of works, and whenever the welding equipment is shut-off for more than one hour. Also, after significant changes in weather conditions	N/A
	Weld conditions	N/A	Test weld strips will be required whenever personnel or equipment are changed, after any period of machine shutdown, every four hours of operation and/or wide temperature fluctuations are experienced. Minimum 1.5m continuous seam	N/A
Destructive weld testing	Onsite, hand tensiometer in peel mode	N/A	1 tab from start and finish of each weld for fusion welds	N/A

Item	Property	Standards	Frequency	Minimum Value
	Onsite calibrated tensiometer - weld seam strength in peel and shear. A number of destructive samples will also be tested at a NATA accredited laboratory.	ASTM D6392	Every 300m (if fusion weld) Every 150m (if extrusion weld)	<u>Fusion Weld</u> Fusion Shear - 28.0 N/mm or 701 N/25mm Fusion Peel - 21.2 N/mm or 530 N/25mm <u>Extrusion Weld</u> Extrusion Shear 28.0 N/mm or 701 N/25mm Extrusion Peel 18.2 N/mm or 455 N/25mm
Non-destructive weld testing	N/A	Air pressure test, ASTM D5820 Vacuum box test, ASTM D5641	All seams over full length	Less than 10% loss in pressure over a 5 minute period when pressurised to 2 bar. No visible bubbles.
Visual inspection of geomembrane	Tears, punctures, abrasions, cracks, indentations, thin spots, or other faults in the material	N/A	Every roll	Free of faults or defects
Leak detection survey	Leak detection survey across all geomembrane lined areas that have had leachate aggregate installed	ASTM D7007	Once the geomembrane has been installed and the drainage aggregate has been placed on top of the geomembrane, but before the separation layer has been installed	Identify and repair and test/resurvey all identified leaks in the lining system

4. The works approval holder must undertake construction quality assurance (CQA) testing for the cushion/protection and separation geotextiles installed within cells 5 and 6 in accordance with the specifications outlined in Table 4.

Table 4: Cushion/protection and separation geotextile CQA requirements

Item	Property	Standards	Frequency
Conformance Quality Assurance testing (sampled at the point of manufacture or on site, as determined by the Superintendent / CQA consultant)	Thickness	AS 3706.1	One sample per 2,500 m^2
	Mass per unit area	AS 3706.1	
	Tensile strength	AS 3706.2	One sample per 5,000 m^2
	Tear strength	ASTM D4833 AS 3706.3	
	Burst strength	ASTM D6241 AS 3706.4	
Visual inspection of geotextile	Color, thickness, tears, holes, punctures, needle - punching, presence of needles or broken needles, and other faults in the material	Visual only	Each roll during placement

Compliance reporting

5. The works approval holder must within 60 calendar days of the Critical Containment Infrastructure identified by condition 1 being constructed:

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

(b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.

6. The Critical Containment Infrastructure Report required by condition 5 must include as a minimum the following:

(a) a CQA Validation Report certified and written by the independent third party civil or structural engineer that completed the CQA that includes, but is not limited to;

(i) certification by a suitably qualified civil or geotechnical engineer that each item of critical containment infrastructure or component thereof, as specified in condition 1, has been built and installed in accordance with the requirements specified in condition 1;

(ii) documentation of the quality of the completed works;

(iii) certification that each item of critical containment infrastructure or component thereof, has complied with the relevant construction quality assurance requirements detailed in conditions 2, 3 and 4;

(iv) an assessment of test results against minimum values in condition 2, 3 and 4 as relevant; and

(v) documentation of all repairs conducted during the installation and testing of each item of infrastructure.

(b) as constructed plans and a detailed site plan showing the location and dimensions for each item of critical containment infrastructure or component thereof, as specified in condition 1;

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

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

Time limited operations phase

Commencement and duration

7. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 1:

(a) where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 meets the requirements of that condition; or

(b) where at least 30 business days have passed after the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 has been submitted to the CEO.

8. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 9 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 5 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 8(a).

Infrastructure requirements

9. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

Site infrastructure and equipment	Operational requirement	Infrastructure location
Cells 5 & 6	• The composite lining system must be maintained in good working order free of detects; • All leachate arising from within a landfill cell must be directed to the leachate collection sump; • Leachate collected in the leachate collection sump must be conveyed to the leachate evaporation pond; and • A minimum separation distance of 2 m is to be maintained between the base of the leachate collection sump and maximum recorded groundwater levels.	As shown in Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6 in Schedule 1: Maps

Site infrastructure and equipment	Operational requirement	Infrastructure location
Cells 5 & 6 fine grained sand protection layer	• Must not contain any organic matter, lumps of clay or other deleterious material; • Must not contain any other type of putrescible waste; • Must not be constructed with crushed limestone; and • Must by constructed with a minimum thickness of 300 mm.	As shown in Figure 3 in Schedule 1: Maps

10. The works approval holder must undertake analysis of the fine grained protection layer required under condition 9 in accordance with the specifications set out in Table 6.

Table 6: Analysis of fine grained protection layer

Sieve size (mm)	Percent passing (%)	Averaging period	Frequency
19	100	Spot sample	1 sample per 100 m^3
9.5	95-100		
4.75	85-100		
2.36	80-100		
1.18	75-100		
0.6	45-95		
0.425	24-80		
0.3	10-60		
0.15	3-24		
0.075	0-8		

Waste acceptance

11. The works approval holder must only accept onto the premises waste of a type that:

(a) does not exceed the rate at which that waste is received; and

(b) meets the relevant acceptance specification,

as set out in Table 7.

Table 7: Waste acceptance criteria

Waste type	Acceptance specification	Rate at which waste is received
Clean fill and uncontaminated fill	None specified	In accordance with the limits specified in L9089/2017/1
Inert waste type 1	Waste containing visible asbestos or ACM shall not be accepted as inert waste type 1	
Inert waste type 2	Tyres and plastic only	
Special waste type 1	Waste must only be accepted only if labelled, double wrapped in heavy duty polyethylene (0.2 mm thick) or otherwise contained to prevent generation of airborne fibres and labelled appropriately.	
Special waste type 2	Clinical waste may only be received that are contained and labelled appropriately. Radioactive wastes shall not be accepted.	
Putrescible waste	Must meet the acceptance criteria for Class II landfills	
Contaminated solid waste		

12. Where waste does not meet the waste acceptance criteria set out in condition 11, the works approval holder must:

(a) reject the waste; and

(b) record the details of the:

(i) waste (type and description);
(ii) source of the waste load;
(iii) name of the waste carrier;
(iv) registration number of the delivery vehicle; and
(v) date that the waste load was rejected;

(c) maintain accurate and auditable records of all waste loads rejected from the premises; and

(d) where the waste supplier cannot immediately remove the waste in the delivery vehicle, it is stored in a quarantined storage area or container and removed to an appropriately authorised facility within seven days of receipt.

Waste processing

13. The works approval holder must ensure that wastes accepted onto the premises are only subjected to the processes set out in Table 8 and in accordance with any process limited described in that table.

Table 8: Waste processing

Waste type	Process	Process limits[1, 2 & 3]
All waste types received on the premises	Disposal of waste by landfilling within Cells 5 or 6	No waste to be temporarily stored or landfilled within 35 m from the boundary of the premises.
Contaminated Solid Waste	Receipt, handling and disposal by landfilling within Cells 5 or 6	Must only be received with accompanying documentation verifying that it meets the waste acceptance requirements of condition 11
Clean fill and uncontaminated fill		None specified
Inert waste type 1		Crushing and screening of inert waste type 1 is not permitted.
Inert waste type 2		None specified
Special waste type 1		• Only to be disposed of into a designated asbestos disposal area within landfill cells as defined on a site map to be available onsite at all times; • Not to be disposed within 2 m of the final tipping surface of the landfill; and • No works shall be carried out on the landfill that could lead to a release of asbestos fibres.
Special waste type 2		• Only to be disposed of into a designated biomedical waste disposal area within landfill cells as defined on a site map to be available onsite at all times; • Not to be disposed within 2 m of the final tipping surface of the landfill; and • No works shall be carried out on the landfill that could lead to disturbance of biomedical wastes.
Putrescible waste		None specified

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.

Note 3: Additional requirements for the acceptance, handling and landfilling of biomedical wastes are set out in the Environmental Protection (Rural landfill) Regulations 2002, and the Biohazard Waste Industry Code of Practice for the Management of clinical and Related Waste (6th Ed), Waste Management Association of Australia, June 2010.

14. The works approval holder must manage the landfilling activities to ensure:

(a) The size of the tipping face is kept to a minimum and not larger than 30 m in width and 2 m in height;

(b) Waste is levelled and compacted as soon as practicable after it is discharged and at a minimum of the end of the day; and

(c) Waste is placed and compacted to ensure all faces are stable and capable of retaining further waste placement or placement of cover or rehabilitation material.

15. The works approval holder must ensure that daily cover is applied and maintained on landfilled waste types in accordance with Table 9 and that sufficient stockpiles of appropriate cover materials are maintained on site at all times.

Table 9: Minimum daily cover requirements

Waste type	Material	Minimum depth	Timescales
Inert waste type 1	No cover requirements		
Inert waste type 2	Clean fill, uncontaminated fill, type 1 inert waste, or soil	150 mm	At the end of each working day
Special waste type 1	Clean fill, uncontaminated fill, type 1 inert waste, or soil	300 mm	Immediate cover of material
Special waste type 2			
All other waste types	Clean fill, uncontaminated fill, type 1 inert waste, or soil	150 mm	At the end of each working day

Monitoring during time limited operations

16. The works approval holder must record the total amount of waste accepted onto and removed from the premises in accordance with the specifications listed in Table 10.

Table 10: Waste accepted and removed from the property

Inputs/Outputs	Waste type	Unit	Time period
Waste inputs	All waste types accepted at the premises for disposal within Cells 5 and 6	tonnes	Each load arriving at the premises
Waste outputs	All waste types accepted at the premises for disposal within Cells 5 and 6	tonnes	Each load leaving or rejected from the premises

Compliance reporting

17. 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 30 calendar days before the expiration date of the works approval, whichever is the sooner.

18. The works approval holder must ensure the report required by condition 17 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of waste received, disposed of on the premises and the amount of waste taken off the premises (refer to condition 16);

(b) a summary of the environmental performance of Cells 5 and 6 (refer to condition 9 and 10)

(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)

19. 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.

20. 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 conditions 1, 2, 3, 4, 9, 10, 13, 14 and 15;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 9;

(c) monitoring programmes undertaken in accordance with condition 16; and

(d) complaints received under condition 19.

21. The books specified under condition 20 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 11 have the meanings defined.

Table 11: Definitions

Term	Definition
ACM	means asbestos containing material
appropriately authorised facility	means a facility which holds approval under the EP Act for the acceptance of the relevant waste type as defined in the Landfill Definitions.
annual period	a 12 month period commencing from 1 January until 31 December of the immediately following year.
AS 1289	means the Australian Standard AS1289 *Methods of testing soils for engineering purposes*
AS 1289.2.1.1	means the Australian Standard AS 1289.2.1.1 *Methods of testing soils for engineering purposes Soil moisture content tests*
AS 3706.1	means the Australian Standard AS 3706.1 *Geotextiles – Methods of test General Requirements, sampling, conditioning, basic physical properties and statistical analysis*
AS 3706.2	means the Australian Standard AS 3706.2 *Geotextiles – Methods of test Determination of tensile properties – wide strip and grab method*
AS 3706.3	means the Australian Standard AS 3706.3 *Geotextiles – Methods of test Determination of tearing strength – Trapezoidal method*
AS 3706.4	means the Australian Standard AS 3706.4 *Geotextiles – Methods of test Determination of burst strength – California bearing ratio – Plunger method*
AS 3706.5	means the Australian Standard AS 3706.5 *Geotextiles – Methods of test Determination of puncture resistance – Drop cone method*
AS 3798	means the Australian Standard AS 3798 *Guidelines on earthworks for commercial and residential development*
ASTM D792	means the ASTM international *Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement*
ASTM D1004	means the ASTM international *Standard Test Methods for Tear Resistance (Grave Tear) for Plastic Film and Sheeting*
ASTM D1505	means the ASTM international *Standard Test Methods for Density of Plastics by the Density-Gradient Technique*

Term	Definition
ASTM D1777	means the ASTM international *Standard Test Method for Textile Materials*
ASTM D3895	means the ASTM international *Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry*
ASTM D4218	means the ASTM international *Standard Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique*
ASTM D4595	means the ASTM international *Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Method*
ASTM D4833	means the ASTM international *Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products*
ASTM D5596	means the ASTM international *Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics*
ASTM D5641	means the ASTM international *Standard Test Method for Geomembrane Seam Evaluation by Vacuum Chamber*
ASTM D5820	means the ASTM international *Standard Test Method for Pressurized Air Channel Evaluation of Dual-Seamed Geomembranes*
ASTM D5885	means the ASTM international *Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics be High-Pressure Differential Scanning Calorimetry*
ASTM D5887	means the ASTM international *Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter*
ASTM D5890	means the ASTM international *Standard Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners*
ASTM D5891	means the ASTM international *Standard Test Method for Fluid Loss of Clay Component of Geosynthetic Clay Liners*
ASTM D5993	means the ASTM international *Standard Test Method for Measuring Mass per Unit Area of Geosynthetic Clay Liners*
ASTM D5994	means the ASTM international *Standard Test Method for Measuring Core Thickness of Textured Geomembranes*
ASTM D6241	means the ASTM international *Standard Test Method for Measuring Static Puncture Strength of Geotextiles and Geosynthetic-Related Products Using a 50 mm Probe*

Term	Definition
ASTM D6392	means the ASTM international *Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods*
ASTM D6496	means the ASTM international *Standard Test Method for Determining Average Bonding Peel Strength Between Top and Bottom Layers of Needle-Punched Geosynthetic Clay Liners*
ASTM D6693	means the ASTM international *Standard Test Method for Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes*
ASTM D7007	means the ASTM international *Standard Test Method for Locating Leaks in Geomembranes Covered with Water or Earthen Materials*
ASTM D7466	means the ASTM international *Standard Test Method for Measuring Asperity Height of Textured Geomembranes*
asbestos	as defined in the Asbestos Guidelines.
Asbestos Guidelines	means the *Guidelines for managing asbestos at construction and demolition waste recycling facilities* published on the department's website.
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
critical containment infrastructure	means the items of infrastructure listed in condition 1.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
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.

Term	Definition
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 *Landfill Waste Classification and Waste Definitions 1996* (as amended from time to time).
MMDD	means Modified Maximum Dry Density
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.
Special Waste Type 1	as defined in the Landfill Definitions.
suitably qualified civil or geotechnical engineer	means a person who: (a) holds a Bachelor of Civil or Geotechnical Engineering recognised by the Institute of Engineers; and (b) has a minimum of five years of experience working in a supervisory area of geotechnical engineering; and is employed by an independent third party external to the works approval holder's business.
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.
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).

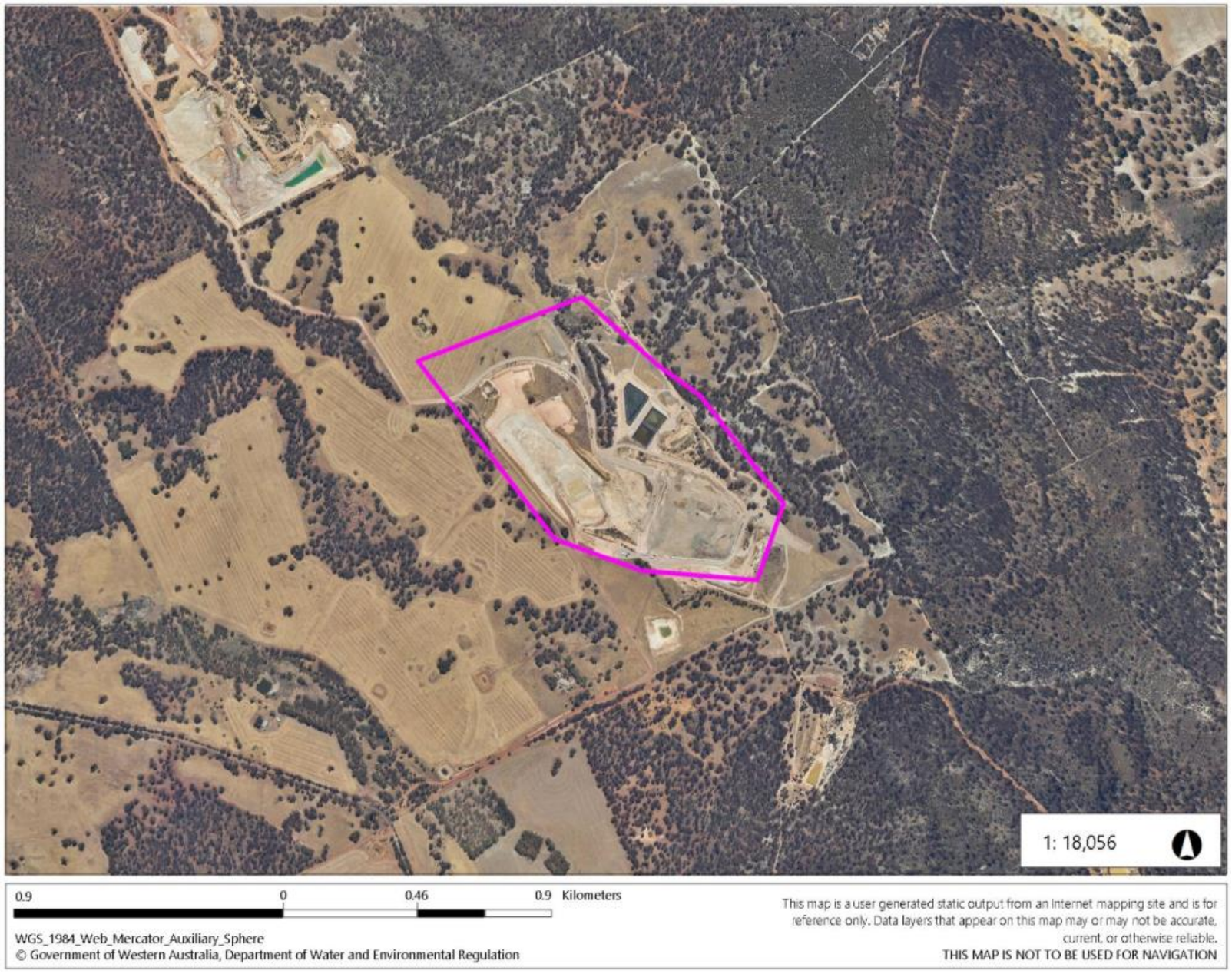


Figure 1: Map of the boundary of the prescribed premises

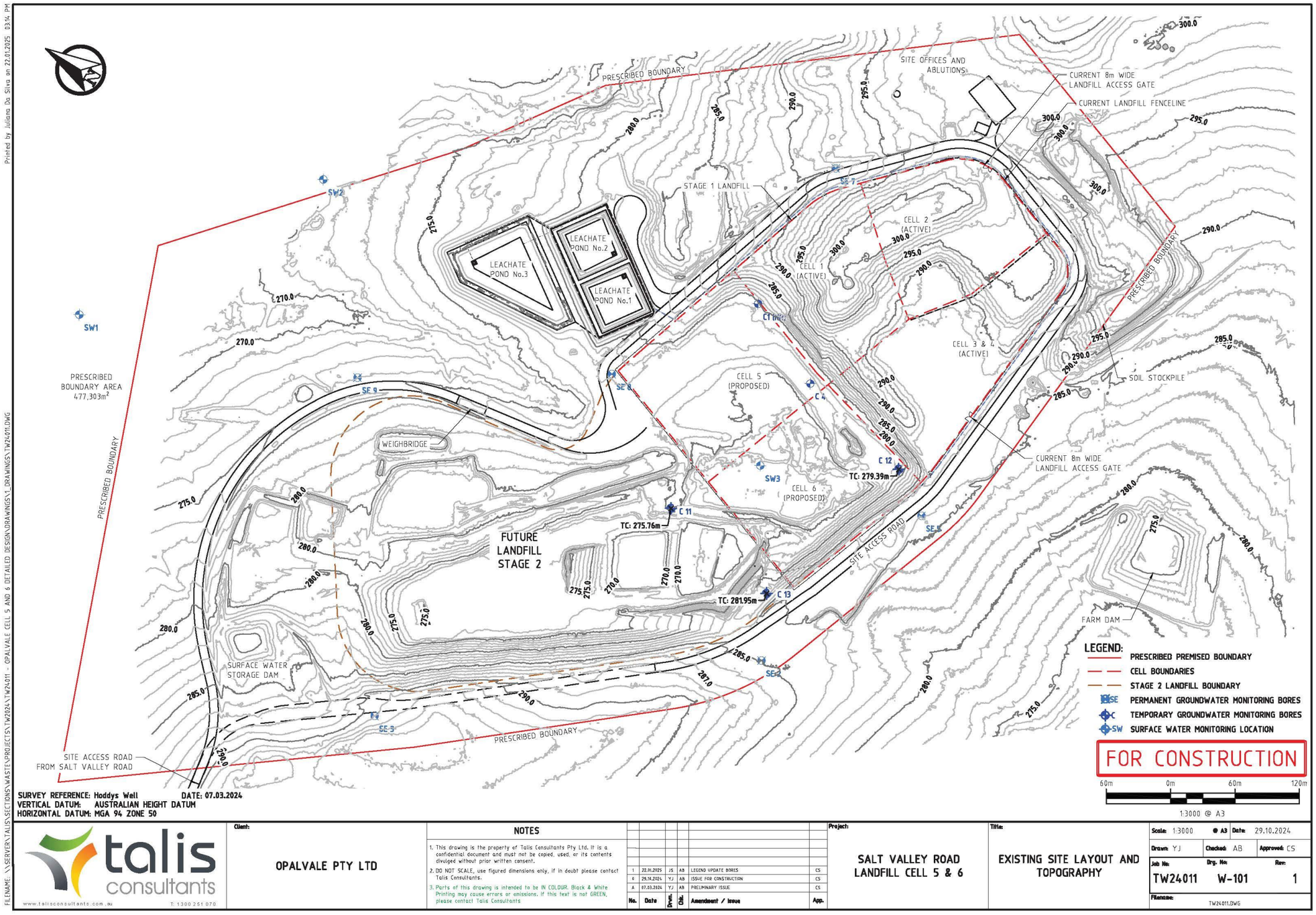


Figure 2: Premises layout

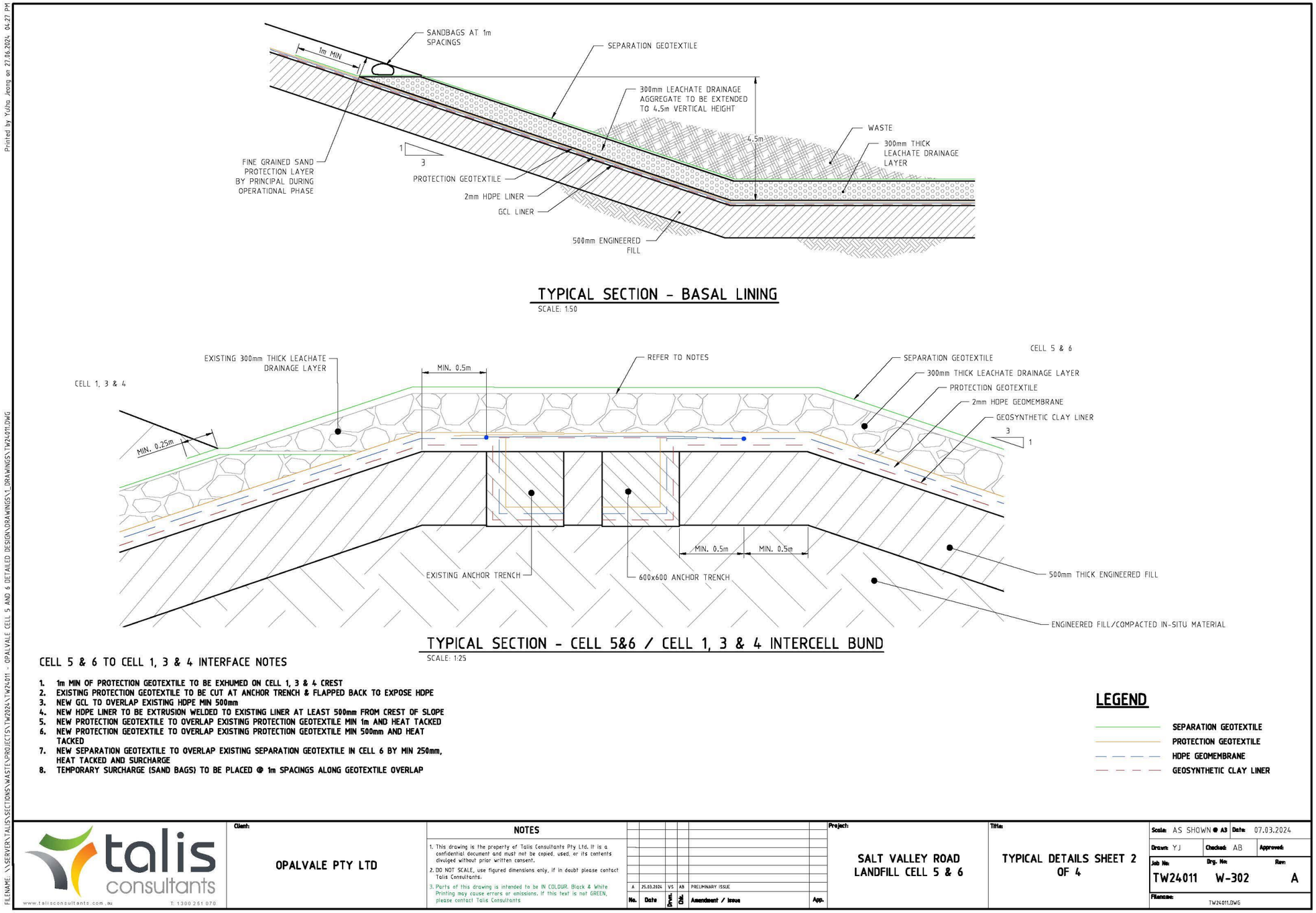


Figure 3: Landfill cell construction details

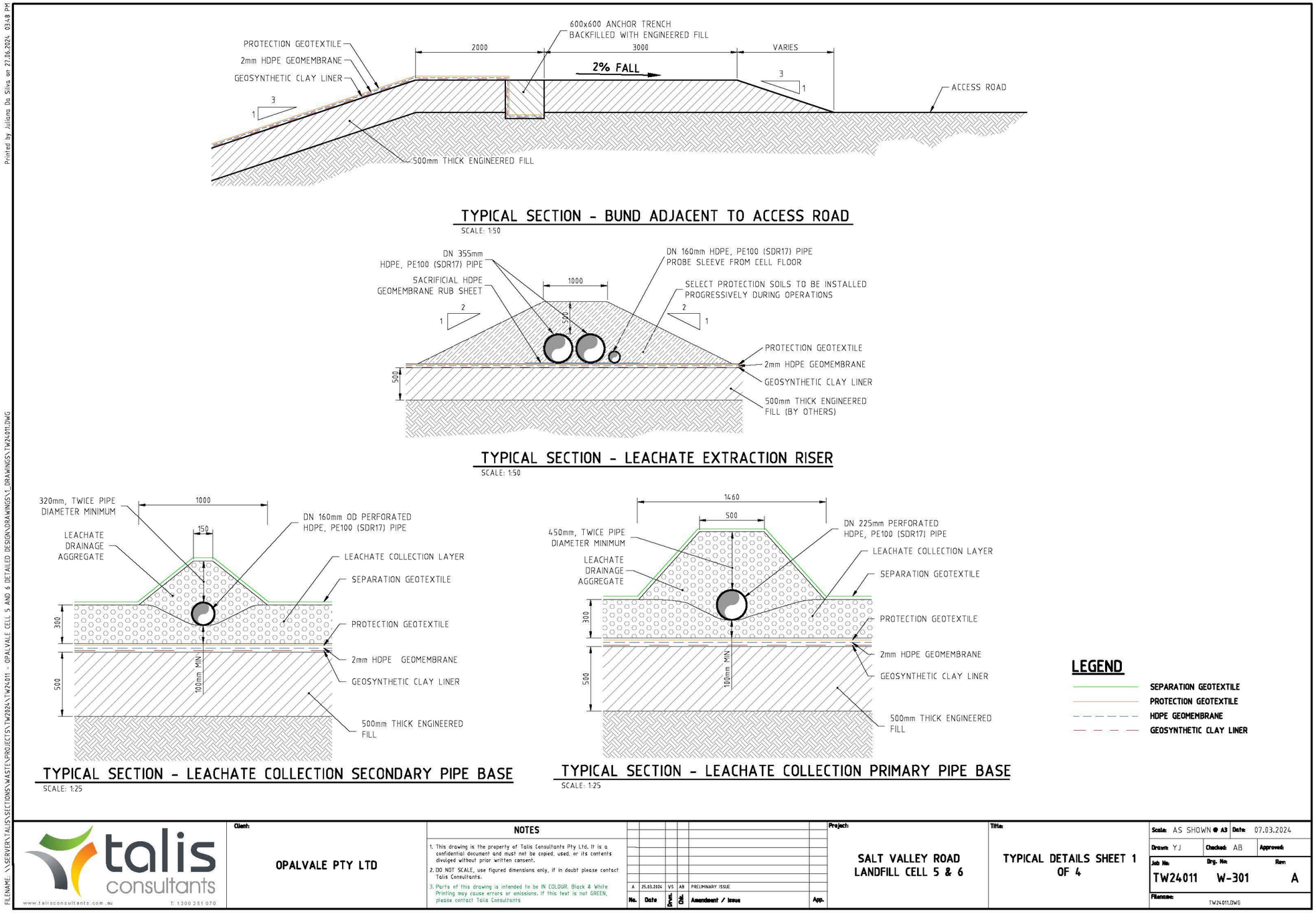


Figure 4: Landfill cell construction details

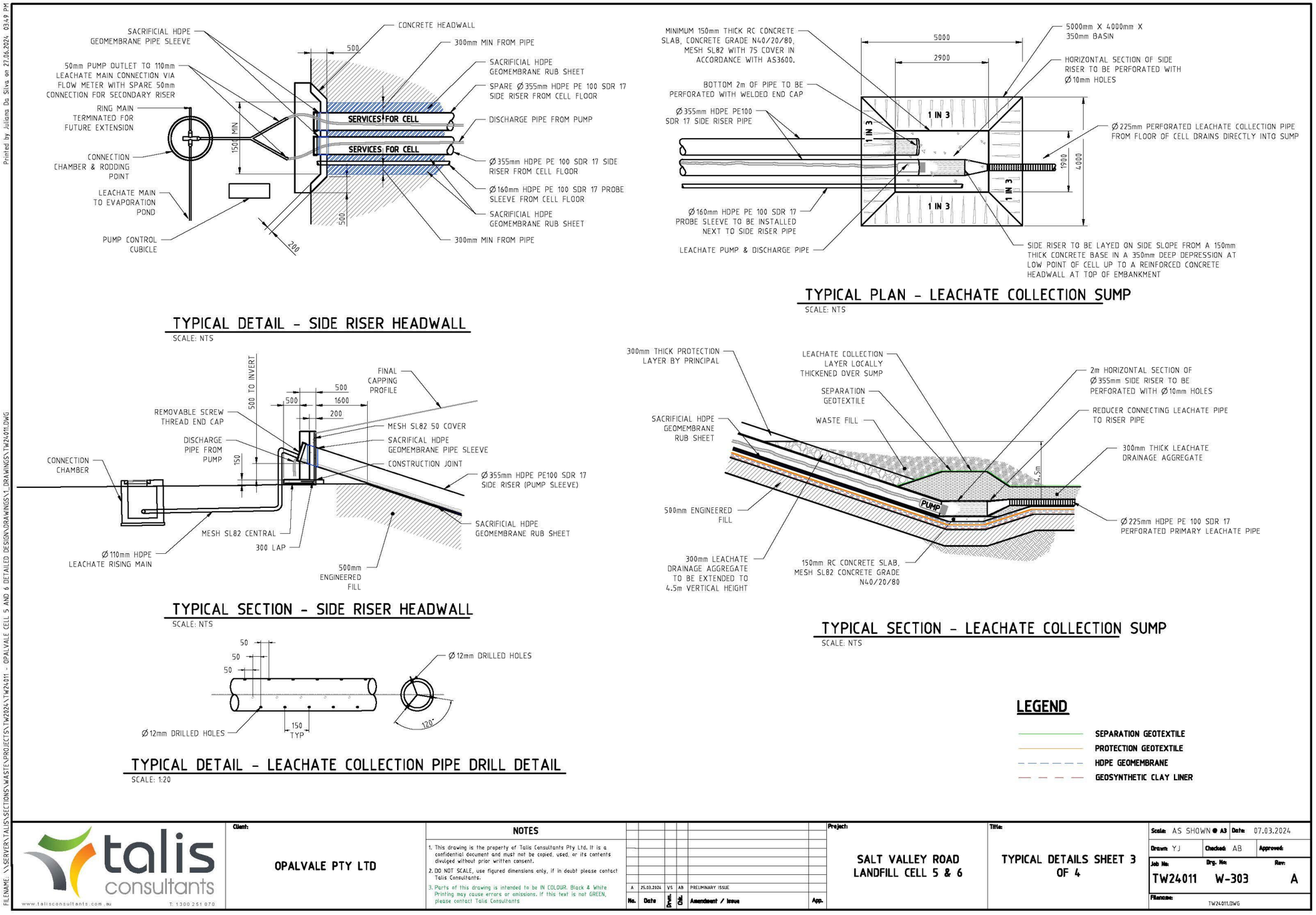
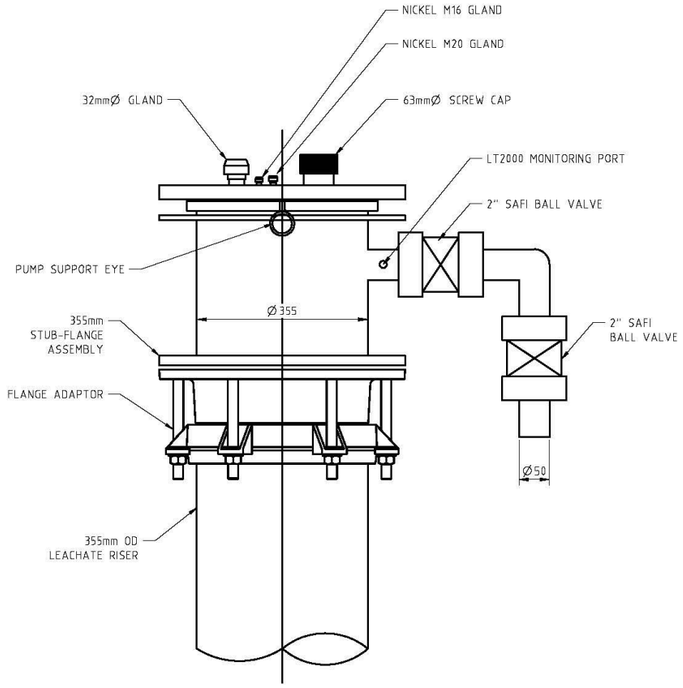
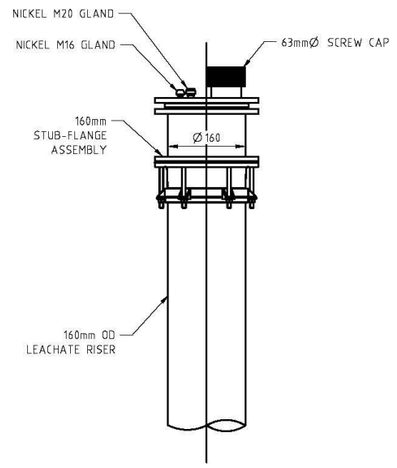


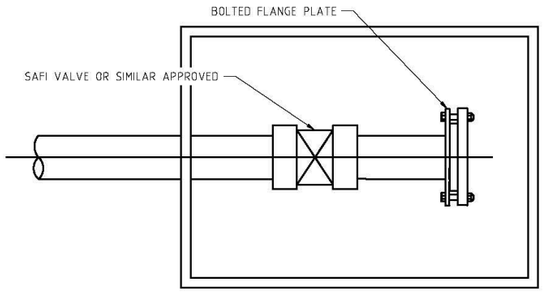
Figure 5: Leachate collection system



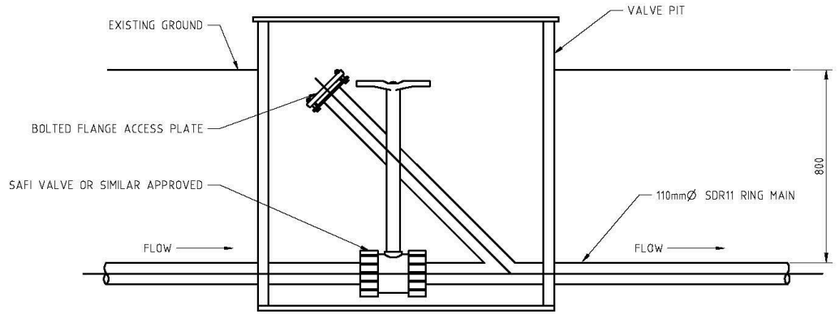
TYPICAL LEACHATE RISER HEADWORKS
SCALE: 1:10



TYPICAL LEACHATE MONITORING SLEEVE HEADWORKS
SCALE: 1:10



TYPICAL LEACHATE MAIN TERMINATION FOR FUTURE EXTENSION
SCALE: 1:10



TYPICAL LEACHATE RODDING PIT SECTION
SCALE: 1:20

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Client: OPALVALE PTY LTD

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No.	Date	Drwn	Chk	Amendment / Issue	App.
A	25.03.2024	VS	AB	PRELIMINARY ISSUE	

Project: SALT VALLEY ROAD LANDFILL CELL 5 & 6

Title: TYPICAL DETAILS SHEET 4 OF 4

Scale: AS SHOWN @ A3 | Date: 07.03.2024
Drawn: YJ | Checked: AB | Approved:
Job No: TW24011 | Drg. No: W-304 | Rev: A
Filename: TW24011.DWG

FILENAME: \\SERVER\TALIS\SECTIONS\WASTE\PROJECTS\TW2024\TW24011 - OPALVALE CELL 5 AND 6 DETAILED DESIGN\DRAWINGS\1_DRAWINGS\TW24011.DWG
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Figure 6: Leachate collection system headworks