Abbotts Liquid Salvage

Better Practice Organics Recycling

Compliance Submission Report

Facility: Abbotts Liquid Salvage (ALS)
Prescribed Category: 67A – Compost Manufacturing (7,500 tpa)
Licence: L7827/2001/6
Location: 35494 Albany Highway, Drome WA 6330
Legislation: Environmental Protection Act 1986 (WA), Part V Division 3

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1. Introduction and Commitment to Better Practice

Abbotts Liquid Salvage (ALS) operates a licensed liquid waste treatment facility incorporating an open windrow composting operation in accordance with Licence L7827/2001/6. The premises is located at 35494 Albany Highway, Drome WA 6330, being part of Lot 4638 on Plan 157018, as defined in Schedules 1 and 2 of the licence.

The facility is authorised to undertake the following prescribed activities:

- **Category 61** – Liquid waste facility (20,000 tonnes per annum)
- **Category 67A** – Compost manufacturing and soil blending (7,500 tonnes per annum)

This report has been prepared to demonstrate compliance with the *Guideline: Better practice organics recycling* (Department of Water and Environmental Regulation, December 2022) and to support regulatory assessment under Part V, Division 3 of the Environmental Protection Act 1986.

ALS is committed to achieving all relevant environmental performance objectives (EPOs) specified in the guideline, including protection of land, surface water, groundwater and amenity, and the production of compliant recycled organic products. Where benchmark controls are not directly applicable, alternative site-specific controls are implemented to achieve an equivalent or improved level of environmental protection.

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2. Scope of Organics Recycling Activities

ALS undertakes windrow composting of organic materials to produce recycled organic products suitable for resale and reuse. Composting activities are integrated with the licensed liquid waste facility and utilise sludge generated onsite from licensed liquid waste treatment operations. Green and brown waste materials are used as bulking agents to achieve suitable carbon balance, porosity and moisture content.

Table 1 – Scope of Organics Recycling Activities

Item	Description
Facility name	Abbotts Liquid Salvage
Prescribed category	67A – Compost manufacturing
Approved capacity	7,500 tonnes per annum
Processing method	Open windrow composting
Feedstocks	Onsite sludge; green and brown waste
Products	Category A and Category B compost
Liquid products	None
Supporting plans	Site layout, composting areas, leachate infrastructure, sensitive receptors

All composting activities are confined to engineered hardstand areas within the licensed premises boundary.

3. Environmental Siting

An environmental siting assessment has been undertaken in accordance with Section 7 of the guideline. The assessment considers surrounding land use, sensitive receptors, surface water features, groundwater conditions, public drinking water catchments, environmentally sensitive areas and acid sulfate soils.

Mapping provided with this submission demonstrates that composting activities are appropriately located and separated from environmental receptors and constraints consistent with guideline benchmarks.

Table 2 – Environmental Siting Assessment Summary

Siting criterion	Guideline consideration	Site assessment	Compliance outcome
Surrounding land use	Compatible land use	Predominantly rural farming and agroforestry; wastewater and tree farm facility immediately south	Suitable
Sensitive receptors	Separation distances to receptors	Nearest receptors approx. 1.04 km east, 1.2 km north-east and 1.2 km south-west	Meets separation distances
Public drinking water catchment	Protection of water quality	Composting area approx. 100 m east of catchment boundary	Suitable
Surface water	Setbacks from waterways	Nearest mapped inland waterway >500 m from composting area	Suitable

Siting criterion	Guideline consideration	Site assessment	Compliance outcome
Environmentally sensitive areas	Avoidance and protection	No ESAs within or adjacent to composting footprint; nearest >1 km away	Suitable
Acid sulfate soils	Avoid disturbance and oxidation	No excavation or soil disturbance; operations confined to engineered hardstand; no mapped ASS within the immediate area	Low risk
Groundwater	Vertical separation and containment	Engineered hardstand and fully contained leachate management system; standing groundwater levels are typically 12–15 m below ground level	Suitable

3.1 Land Use and Sensitive Receptors

Surrounding land use is predominantly rural farming and agroforestry, with the Water Corporation Gunn Road wastewater and tree farm facility located immediately south of the premises. The nearest sensitive receptors are located approximately 1.04 km east, 1.2 km north-east and 1.2 km south-west of the composting activities, exceeding the minimum separation distances specified in the guideline. The Down Road Industrial Estate is located to the north of the facility.

3.2 Public Drinking Water Catchment

The premises is located within a Public Drinking Water Catchment Area. The composting area is located approximately 100 m east of the catchment boundary. No uncontrolled discharge occurs; all leachate is fully contained and managed in accordance with Licence L7827/2001/6.

3.3 Surface Water

Intermittent inland waterways occur in the broader locality. The nearest mapped surface water feature is located more than 500 m from the composting area. No direct discharge to surface water occurs, and all composting leachate is captured and reused.

3.4 Environmentally Sensitive Areas

Environmentally sensitive areas are present at a regional scale; however, none occur within or immediately adjacent to the composting footprint. The nearest mapped environmentally sensitive area is located more than 1 km from composting activities.

3.5 Acid Sulfate Soils

Regional mapping indicates that areas of potential acid sulfate soil risk occur within the broader locality. Composting activities are confined to existing engineered hardstand areas and do not involve excavation, dewatering or disturbance of natural soil profiles.

Accordingly, there is no credible pathway for the exposure or mobilisation of potential acid sulfate soils. Engineered hardstand and leachate containment infrastructure prevent contact between composting

materials and underlying soils. On a conservative basis, the risk of environmental harm associated with acid sulfate soils is considered low and acceptable, consistent with the guideline's environmental performance objectives.

3.6 Groundwater

Groundwater protection is achieved through fully contained hardstand and leachate management systems. Standing groundwater levels are typically between 12–15 m below ground level. Groundwater monitoring is undertaken in accordance with current licence requirements.

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4. Feedstocks and Waste Acceptance

ALS accepts standard feedstocks only for composting. No non-standard feedstocks are accepted. Green/brown waste feedstock acceptance is controlled through defined acceptance criteria, visual inspection at receipt, segregation of non-conforming materials and immediate rejection or removal where acceptance criteria are not met. Feedstocks are sourced from known and controlled activities, with onsite sludge generated under the existing licence conditions. Incoming green waste and brown waste materials are managed to ensure appropriate carbon balance, moisture content and contaminant control, thereby supporting effective composting processes, minimising odour and leachate generation, and protecting product quality and environmental outcomes.

Feedstock	Classification	Controls
Liquid waste sludge	Standard	Generated onsite under licence only; incorporated into composting practices as soon as practicable; blended with green and brown waste to achieve suitable carbon balance, minimise odour and maintain aerobic conditions, enzymes may be used at times
Green waste	Standard	Visual inspection at receipt; removal of visible contaminants; used as a bulking agent to improve structure, porosity and aeration of windrows
Brown waste	Standard	Visual inspection at receipt; managed to control moisture content and carbon balance; blended to support aerobic composting, moisture regulation and leachate minimisation
Non-standard feedstocks	Not accepted	Excluded from acceptance; any non-conforming materials are rejected or removed from site immediately

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5. Infrastructure and Equipment

Composting infrastructure and equipment have been established and are operated in accordance with Licence L7827/2001/6 and the *Guideline: Better practice organics recycling*. The key composting infrastructure and equipment, and their environmental function, are summarised in Table 4 below.

Table 4 – Infrastructure and Equipment Summary

Infrastructure / equipment	Description and purpose
Engineered hardstand	Clay-lined and gravel hardstand providing an impervious working surface, designed to prevent infiltration to underlying soils and groundwater and to support all composting activities.
Graded drainage system	Hardstand graded toward leachate collection points to ensure controlled drainage of runoff and leachate.
Perimeter bunding	Bunding on northern boundary of composting hardstand to contain runoff and leachate and prevent uncontrolled releases to land or water.
Leachate collection and conveyance system	Dedicated drain directing leachate to storage for reuse in the composting process.
Leachate storage dam	Clay-lined leachate dam designed prevent emissions to land, surface water or groundwater; aeration and paddlewheels installed to manage odour and maintain water quality if/when required
Windrow forming and turning equipment	Mobile plant used to construct, blend, turn and manage windrows to maintain aerobic conditions, achieve and sustain pasteurisation temperatures (≥55°C for a minimum of 15 consecutive days with at least five turns), regulate moisture content within the 40–65% target range, and ensure uniform mixing to support effective stabilisation and pathogen reduction during the composting process.
Front-end loader	Used for material handling, windrow management, stockpiling and loading activities within the composting area.
Mobile screening equipment	Equipment used for post-pasteurisation screening and product conditioning prior to sampling and classification.
Water carts and hoses	Used for moisture control within windrows and for dust suppression during dry or windy conditions.
Fire-fighting equipment	Truck with a minimum capacity of 8,000 litres and a mobile fire pump maintained onsite during compost manufacturing and soil blending activities to support fire prevention and emergency response; an additional fire pump located at the leachate dam enables rapid filling of water carts and onsite water supply in the event of an emergency.

6. Operations

Feedstocks are incorporated into the composting process as soon as practicable to minimise odour potential and maintain aerobic conditions. Composting activities are undertaken between 6:00 am and 6:00 pm in accordance with licence conditions.

Composting is carried out using open windrow methods on engineered hardstand areas. Windrows are formed and managed to maintain aerobic conditions, with regular turning undertaken to control temperature, moisture and oxygen levels. Windrow core temperatures are monitored and maintained at or above 55°C for a minimum of 15 consecutive days, with a minimum of five turns during this period, to achieve effective pasteurisation, consistent with the guideline and relevant Australian standards.

Moisture content within windrows is actively managed and maintained within a target range of approximately 40–65% to support biological activity, maintain aerobic conditions and minimise leachate generation and dust emissions. Leachate collected from the composting hardstand is reused within the composting process for moisture control where appropriate.

Following pasteurisation, windrows are stockpiled for conditioning and screened to achieve product consistency prior to sampling, testing and classification. Stockpiling, loading and dispatch activities are undertaken only within designated hardstand areas and in a manner that prevents emissions to land, water or the surrounding environment.

Operational activities are supported by documented Safe Work Procedures (SWPs) that provide detailed instructions for key composting tasks and incorporate environmental, health and safety controls consistent with better practice composting. The relevant SWPs supporting composting operations are summarised in Table 5 below.

Table 5 – Safe Work Procedures Supporting Composting Operations

Safe Work Procedure	SWP reference	Scope and operational controls
Drying bed pre-mixing	ALSPL-001	Procedures for pre-mixing green waste and biosolids to achieve appropriate ratios, control odour
Green waste receival and storage	ALSPL-002	Controls for inspection, acceptance and stockpiling of green waste, including contaminant exclusion, dust suppression, traffic management and minimisation of fire risk during storage
Compost windrow mixing and maintenance	ALSPL-003	Controls for windrow construction, blending ratios, turning frequency, temperature and moisture management to maintain aerobic conditions and effective composting
Compost windrow sampling	ALSPL-004	Sampling procedures in accordance with AS 4454 for temperature, moisture and laboratory testing to verify pasteurisation and product quality
Final compost stockpiling	ALSPL-005	Controls for movement, storage of finished compost to prevent recontamination and pathogen regrowth prior to sale

7. Emissions and Environmental Controls

Emissions associated with open windrow composting are identified, assessed and managed through a combination of engineered, operational and administrative controls consistent with Sections 8.2–8.9 of the guideline. The primary emission pathways and corresponding controls implemented at the facility are summarised in Table 6 below.

Table 6 – Emissions Associated with Open Windrow Composting and Control Measures

Emission type	Potential sources	Environmental risk	Key control measures
Odour	Sludge handling, windrow formation, turning and moisture imbalance	Amenity impacts to sensitive receptors	Rapid incorporation of feedstocks, maintenance of aerobic conditions, controlled blending ratios, moisture and temperature management, timely turning, and complaint response procedures
Leachate / runoff	Excess moisture, rainfall on windrows, hardstand drainage	Contamination of land, surface water or groundwater	Engineered hardstand, perimeter bunding, graded drainage, leachate collection and reuse, clay lined leachate storage dam
Dust	Vehicle movements, windrow turning, dry conditions	Amenity impacts and nuisance dust	Moisture management using leachate water, water carts and hoses, speed limits, activity management during dry or windy conditions
Noise	Mobile plant, turning, loading and screening	Amenity impacts to sensitive receptors	Daytime operations only, separation distances, well-maintained equipment, operational scheduling
Bioaerosols	Windrow disturbance during turning and handling	Potential health and amenity impacts	Separation distances to receptors; maintenance of aerobic composting conditions; moisture control; operational management practices; and a vegetated buffer along the site boundary
Litter and debris	Incoming feedstocks, screening residues	Visual amenity and offsite migration	Feedstock inspection, prompt incorporation, housekeeping, containment within hardstand areas
Vectors	Organic material stockpiles, unmanaged feedstocks	Attraction of birds, insects or vermin	Timely processing, aerobic conditions, site cleanliness and inspections
Fire and heat	Elevated windrow temperatures, dry conditions	Fire risk and emergency response	Windrow size and spacing controls, temperature and moisture monitoring, firefighting equipment onsite, emergency procedures

8. Monitoring, Record Keeping and Reporting

Monitoring, record keeping and reporting are undertaken to demonstrate ongoing compliance with Licence L7827/2001/6 and the *Guideline: Better practice organics recycling*. Monitoring programs are risk-based and proportionate to the scale and nature of the composting activities and are designed to verify effective process control, environmental protection and product quality.

Table 7 – Monitoring, Record Keeping and Reporting Summary

Monitoring / record type	Description	Purpose
Feedstock acceptance records	Records of feedstock types, quantities	Demonstrate compliance with approved feedstocks and throughput limits
Compost process monitoring	Windrow temperature, moisture content and turning frequency records	Verify maintenance of aerobic conditions and achievement of pasteurisation requirements
Leachate management monitoring	Routine inspection of hardstand, drainage infrastructure and leachate storage dam levels	Confirm containment integrity and prevent emissions to land or water
Groundwater monitoring	Groundwater level and quality monitoring undertaken in accordance with licence conditions	Demonstrate protection of groundwater resources
Product sampling and testing	Laboratory testing of compost products for pathogens, contaminants and maturity	Verify compliance with AS 4454 compost quality standards
Complaints and incident records	Register of complaints, investigations, responses and corrective actions	Manage amenity risks and demonstrate responsive environmental management
Regulatory reporting	Submission of monitoring results, compliance information and notifications as required by the licence	Demonstrate regulatory compliance and transparency

9. Additional Approvals

No additional approvals under Part IV of the EP Act or other regulatory frameworks are required. Planning approval for composting activities has been obtained from the City of Albany and remains current.

10. Conclusion

The ALS windrow composting facility is appropriately sited, designed and operated in accordance with Licence L7827/2001/6 and the *Guideline: Better practice organics recycling*. Through the application of suitable site selection, engineered containment infrastructure, documented operational controls, risk-based monitoring programs and demonstrated product quality assurance, potential emissions to land, water and amenity are effectively managed. Environmental risks associated with open windrow composting are therefore considered low and acceptable, and the facility is deemed suitable for continued operation under Part V of the Environmental Protection Act 1986.