
Construction Environmental Management Plan

Part 1 - Landfill Related Construction works only
Dual Gas and Leachate Trench construction works

Lucas Heights Resource Recovery Park

Document #: LHRRP -CEMP-Part 1

Issue date: July 2017

Version: 001



Table of Contents

1.	Introduction	3
1.1.	Overview	3
1.2.	Purpose and Scope	3
2.	Guidelines for Construction Environment Management Plan.....	4
2.1.	Reference documents.....	4
2.2.	Construction program	4
2.3	Scope of the Dual Gas and Leachate Trench works	5
2.4	Dust management plan.....	5
2.5	Noise management plan.....	6
2.6	Hours of Work	6
2.7	Surface water and Sediment Management	6
2.8	Leachate and Landfill Gas Management.....	6
2.9	Stockpile management	7
2.10	Odour Management.....	7
2.11	Traffic management plan	8
2.12	Occupational health safety and environment plan.....	8

1. Introduction

1.1. Overview

SUEZ Recycling and Recovery (SUEZ) operates a solid waste landfill at Lucas Heights Resource Recovery Park (LHRRP). LHRRP is licensed to accept solid waste from domestic and commercial sources that are suitable for disposal in a general solid (putrescible) waste landfill. Activities on the site include waste receipt and recycling, waste compaction and covering, environmental monitoring and environmental management. Other Facilities approved under the 2017 Development Consent include development of a Garden Organics (GO) Facility and an Advanced Resource Recovery Treatment Facility (ARRT).

During the site’s operational period the maximum quantity of waste proposed to be landfilled at the LHRRP following landfill re-profiling works would be 850,000 tonnes per year, 200,000 tonnes proposed to be processed at the ARRT facility, 80,000 tonnes proposed to be processed at the GO facility and 10,000 tonnes at the Resource Recovery Centre (RRC). An Operational Environmental Management Plan (OEMP) has been prepared for Landfill re-profiling works, GO and the ARRT facilities, as part of the EIS and later updated to satisfy the 2017 Development Consent (DC) SSD 6835 conditions. The OEMP’s cover all construction, operation, waste processing and landfill rehabilitation activities until waste receipt activities cease. In accordance with the DC Conditions (D1, D2 & D3), site specific Construction Environmental Management Plans (CEMP’s) are to be prepared and submitted prior to the development of GO and ARRT Facilities.

The following Table outlines the number of various Environmental Management Plans that have been prepared as part of the EIS or will be prepared and submitted to relevant stakeholders at various stages, in accordance with the 2017 DC.

Table 1.1

Approved Activity	Environmental Management Plans (EMP’s)			
	Construction Phase	Operational Phase	Closure Phase	Post Closure Phase (+ 30years)
Landfill Re-profiling & Waste Filling;	CEMP for Dual Gas & Leachate Trench works	OEMP for Landfill Re-profiling & waste filling	Landfill Closure Plan	Post Closure EMP
Status	Submitted here (this document)	Submitted with EIS / Has been updated	Will be submitted prior to L/F Closure	Submitted with EIS / Will be updated and submitted prior to Closure
GO Facility	Construction EMP	OEMP for GO Facility	N/A	N/A
Status	Will be submitted prior to development	Submitted with EIS / to be updated later	N/A	N/A
ARRT Facility	Construction EMP	OEMP for ARRT Facility	N/A	N/A
Status	Will be submitted prior to development	Submitted with EIS / to be updated later	N/A	N/A

1.2. Purpose and Scope

In accordance with DC Condition C23 (d) and D2 (a), a CEMP is to be prepared and submitted to EPA at least one month prior to construction of the Dual Gas and Leachate Trench works.

This CEMP for the Dual Gas and Leachate Trench construction works has been prepared as a stand-alone plan to address the potential environmental issues during the construction of the Dual Gas and Leachate Trench near the perimeter the proposed final landform at the LHRRP. The purpose of this document is to describe the environmental management during specific construction activities that have, or are likely to have, an impact on the environment. This document sets out detailed procedures and measures that must be taken to minimise and eliminate the environmental impacts. This CEMP will be implemented by the selected Contractor during Dual Gas and Leachate Trench construction works.

A full OEMP has been prepared and is currently being updated to include the LHRRP landfilling activities and other approved activities in accordance with the 2017 DC. All other environmental and operational activities and relevant environmental impacts arising from landfill re-profiling, waste receipt, and waste filling at the site are covered in the LHRRP OEMP. The OEMP should be referred to regarding all environmental management issues at LHRRP, including leachate management, landfill gas management, air quality and odour management, surface water management, noise, and vegetation management.

SUEZ is committed to best practice, prevention, mitigation and rectification during the operation and management of the LHRRP. The purpose of this CEMP is to adopt and document a “Best Practice Approach” for the environmental management of the LHRRP, in particular, construction works associated with Dual Gas and Leachate Trench construction works at the LHRRP site.

2. Guidelines for Construction Environment Management Plan

The following sections outline the documentation requirements and management measures that should be included in the CEMP. This CEMP considers all relevant aspects of the works including program, operating hours, noise and dust control, stormwater and sediment control, leachate and odour management, waste and stockpile management and worker health and safety during construction of the Dual Gas and Leachate Trench works.

2.1. Reference documents

This CEMP refers to following reference documents:

- [1] A copy of the Concept Design Documentation for Dual Gas and Leachate Trench works prepared by SUEZ, July 2017 (Appendix 1).
- [2] Landfill re-profiling and Progressive Capping Indicative Staging Plans – Phase 1 to Phase 9 (Appendix 2)
- [3] Development Consent (SSDA 6835) Conditions – C23 (a), (b), (c), (d) and D2 (a).
- [4] LHRRP OEMP, updated in June 2017.
- [5] Environmental Protection Licence No. 5065.
- [6] (a) SUEZ Environment, Quality & Safety Management System (MAN 018-version 3);
(b) SUEZ Environment, Quality & Safety Management System (SOP 023 – Working Heights);
(c) SUEZ Environment, Quality & Safety Management System (SOP 035 – Excavation Works);
and other SUEZ’s policies/ procedures /SOPs applicable to the construction and landfill operation;
- [7] Work Health and Safety Act 2011 and Work Health and Safety Regulation 2011 (NSW).

2.2. Construction program

The Contractor shall submit a detailed program / Project Plan for the Works (in MS Project format or similar) based on the outlined scope of works (2.3 below) including Hold Points in accordance with the Concept Design Documentation for the Dual Gas and Leachate Trench works prior to the works commencing. This Project Plan shall also include the project team (Contractor’s and SUEZ’) and their respective management responsibilities for the Works, as well as emergency procedures and contacts. The first section of the Dual Gas and Leachate

Trench works is expected to commence by late 2017 (subject to approval by EPA) and continue over several years as landfilling progresses, in accordance with 'Landfill re-profiling Indicative Staging Plans (Appendix 2).

2.3 Scope of the Dual Gas and Leachate Trench works

Following approval of the concept design for Dual Gas and Leachate Trench works (Appendix 1) and this CEMP document by EPA, detailed design of the system would be undertaken, prior to installation of Dual Gas and Leachate Trench works and would include consideration of the predicted leachate flows, settlement and strength requirements.

Based on the detailed design and in line with 'Staged Landfill re-profiling and waste filling plan (Phase 1 to Phase 4), the route of the initial sections of the proposed trench would be set out. Actual location of the trench and its setback distance from the landfill re-profiling boundary, will depend on the factors such as: locations of the nearby existing gas and leachate mains, actual spot levels and actual depth of waste along the route. Existing intermediate cover and capping system would be stripped back and stockpiled nearby for backfilling. The trench (subject to detail design) will be excavated to expose the old waste, near the perimeter of the re-profiled landfill to intercept the potential sideways movement of leachate and constructed as a gravity line (with 1 – 2 % fall) in stages as landfilling progresses. Please refer Appendix 1 for details.

The main perimeter trench would contain two (2), 110 to 250mm diameter perforated pipes (one for gas and other one for leachate) and be backfilled with a high permeability material such as crushed sandstone/aggregate. Lateral branch /feeder leachate trenches will be constructed from the centre of the landfill area, draining towards the perimeter Dual Gas and Leachate Trench and connected at regular intervals. Leachate Inspection Risers/Sump pits will be installed at these connection points. This would permit collection and extraction of any leachate moving horizontally near the interface of the existing and newly landfilled waste into trench, which would either be pumped out or gravity feed into the nearby existing leachate ring main. Gas collection wells will also be installed at regular intervals as required (subject availability of gas) along the trench, which would be connected to the nearby gas headers/ gas well stations. A leachate containment bund will also be constructed, prior to commencement of waste filling along the re-profiling boundary and will be incorporated as part of the locally thickened capping along the re-profiled boundary (refer to Appendix 1 – Concept design drawings for details). Following landfill re-profiling works, new waste will be filled to varying depths (subject to LHRRP pre-settlement contours and actual depths along the route), and the areas contoured to its final landform profile will be capped to contain leachate and gas.

2.4 Dust management plan

Dust emission may arise via construction plant and equipment travelling on internal unsealed roads, during excavation/ stripping of the existing cover/ trench works and loading and unloading of stripped intermediate cover materials. The magnitude of impact will depend on the size of the construction works, local topography, prevailing wind speed/direction, and distance to the nearest sensitive receptor. The Contractor shall provide a site-specific Dust Management Plan for the Works prior to commencing the Works, which would comply with LHRRP OEMP (Section 8.6 – Dust Control). The objective of the Dust Management Plan is to prevent the generation of airborne particulates (including dust) to ensure no dust is discharges beyond the boundary of the LHRRP site. The Contractor shall implement all reasonable and practical measures to prevent or minimise the generation of windborne particles during all tasks at all times of the Works. SUEZ' Landfill Manager will conduct regular inspections and audits of the construction site to ensure that the Contractor is complying with the Dust Management Plan.

Following dust mitigation measures may be employed during construction of the Dual Gas and Leachate Trench works:

- Watering down of all unsealed trafficable roads that would be used by the plant and equipment, as required throughout the day to minimise dust;
- Watering down any dust generating areas during construction and maintaining a water supply (dedicated water cart) on site for this purpose;

- Where possible, activities that have high potential for dust generation (excavation, unloading of materials etc.) will be halted during adverse weather conditions where strong winds are blowing towards the nearby receptor;
- Vehicles leaving the construction site with potential dust / litter generating excavated materials will be covered to prevent windblown emissions; and,
- Any dust related complaints will be recorded, investigated and appropriate correction action taken.

2.5 Noise management plan

The Construction Contractor shall prepare a site-specific Noise Management Plan for the works, which would comply with LHRRP OEMP (Section 8.8 – Noise Control). Noise monitoring will be undertaken at the specific noise receptor locations, in accordance with DC Condition (C54). The Landfill Manager will conduct regular site inspections to ensure that the Contractor is complying with the Noise Management Plan.

General noise compliance and noise management measures for this specific works include undertaking noise monitoring of the construction activities and all other activities around the LHRRP site to ensure that the site noise level is not exceeding the required criteria.

2.6 Hours of Work

The construction works will be carried out within the following approved Hours of Work:

Facility	Activity	Day	Time
Landfill	Construction works	Monday - Friday	7 am – 5 pm
		Saturday - Sunday	8 am – 5 pm

2.7 Surface water and Sediment Management

Surface water management would involve diversion of clean surface water around the areas disturbed for the Dual Gas and Leachate Trench works. A Soil and Water Management Plan has been prepared for all LHRRP activities and included in the OEMP (Section 8.2 – Surface water Management). However, the Contractor shall prepare a site-specific Surface water and Sediment Management Plan for the Dual Gas and Leachate Trench works in accordance with this CEMP. This would include construction of temporary stormwater diversion drainage bunds along the upstream catchment of the trench or around the rim of each active landfilling area to divert stormwater away from the trench and to minimise potential leachate generation. The diversion drainage will typically comprise of open channel drains and be on the outer edge of the diversion drainage bund. Diversion drains will be constructed progressively and connected to the clean water and dirty water channels located at the perimeter of the LHRRP. Clean water from the undisturbed upstream catchments (capped areas of the landfill) will be diverted to the clean water channel and would enter Mill Creek. In addition, silt fences will be constructed along the downstream of the work areas and within drainage lines to minimise sediment runoff and to protect rehabilitated areas of the landfill. Stormwater from the disturbed areas will be directed to nearby stormwater dam for reuse. Stormwater collected in the dam will be used for onsite dust suppression. The stormwater treatment facility at the LHRRP treats the sediment laden stormwater within the main stormwater dam prior to any discharging to Mill Creek, in accordance with EPL 5065 licence conditions.

2.8 Leachate and Landfill Gas Management

The Contractor shall prepare a site-specific Leachate Management Plan, which would comply with LHRRP OEMP (Section 8.3 – Leachate management). While undertaking the stripping works (existing intermediate cover/ capping system), leachate would be prevented from entering the surface water by the construction of separation bunds. Additional leachate controls including temporary sumps with pump out connections would

be installed prior to excavation of trenching works. Any contaminated stormwater entering the trench will be contained and captured within low points of the trench and will be treated as leachate. This contaminated water will be pumped into the nearby perimeter leachate ring main sumps, which will be directed to the leachate dam for treatment and disposed to sewer as controlled by Sydney Water Trade Waste Agreement. Landfill gas will be captured from the gas wells along the Trench and managed in accordance with LHRRP OEMP (Section 8.4 – Landfill gas management).

2.9 Stockpile management

All stockpiling works would generally be in compliance with LHRRP OEMP. Temporary stockpiles with stripped intermediate cover materials will be maintained with silt fences and located within the areas that drain to sedimentation dams. Temporary stockpiled material will be used onsite for covering and capping works as soon as practicable, to limit the size and location of the stockpile over the duration of the works.

Stockpiles remaining in place for extended periods would be sprayed with (Spraygrass) or similar using a mix of suitable grasses.

2.10 Odour Management

Excavation of the Dual Gas and Leachate Trench may generate some odour (due to exposure of old waste, gas, leachate etc.) around the construction site. The Contractor shall prepare a site-specific Odour Management Plan for the works, which would comply with the Odour Management Strategies and Odour Mitigation Measures, as outlined in the LHRRP OEMP (Section 8.5 - Odour Control). In addition, a separate 'Site Air Quality and Odour Management Plan' will be prepared and submitted to relevant stakeholders, in accordance with DC Condition C11.

The following odour management and mitigation measures may be employed during construction of the Dual Gas/ Leachate trenching works:

- Trench works would be undertaken in small sections only at a time to reduce potential odour emissions and the exposed trench would be backfilled and covered within a short timeframe, prior to commencing next section of the trench;
- At any one time, no more than 60m of trenches would be exposed;
- Ensure all equipment and all odour control measures, such as odour suppressing spray equipment are in place;
- Work are to be carried out by competent and authorised personnel only. Additional training will be provided to the Contractor and his workers on landfill odour management strategy and all relevant standard operating procedures (SOP's) as part of the Risk Assessment / Job Safety and Environmental Assessment (JSEA) process;
- Monitoring of the landfill gas wells/ leachate wells upstream and surrounding areas of the work to ensure these wells are active and in good condition so that they can continue to capture gas/leachate;
- Minimise the area of cap /Intermediate cover removed prior to construction of the trench;
- Spraying odour neutralising agents over the exposed waste, soon after the excavation/stripping of the cover material;
- Maintaining a trailer mounted odour neutraliser spray around the works area;
- Transporting any odorous waste from the construction area to the active tip area as soon as practicable;
- Covering the excavated waste as soon as practicable with new intermediate capping layer material or other suitable material, after installation of leachate pipe and aggregate bedding material;
- All open pipes would be blocked/ covered or connected to the collection network (Gas & Leachate);
- All trench excavation should stop under high wind and inclement weather conditions;
- Regular odour monitoring shall be conducted especially at the downwind locations;
- Any odour related complaints will be recorded, investigated and appropriate correction action taken.

2.11 Traffic management plan

The Contractor shall prepare a site-specific traffic management plan for the Works in accordance with LHRRP OEMP (Section 8.10 – Traffic).

2.12 Occupational health safety and environment plan

The contractor shall provide a site-specific Job health, safety and environment management plan and 'Work Method Statement' for the Dual Gas and Leachate Trench works and obtain approval of the plan from SUEZ' Landfill Manager/EQS Manager, prior to commencement of the works. The achievement of relevant Conditions of Consent will be through the Contractor's Work Method Statement. The Contractor shall determine appropriate safe working procedures and methodologies to construct the Works in accordance with LHRRP OEMP (Section 10 – Risk Management) and in compliance with [7] Work Health and Safety Act 2011 and Work Health and Safety Regulation 2011 (NSW).

The plan shall be applied in conjunction with the [6] SUEZ Environment, Quality & Safety Management System (MAN 018- version 3), and other SUEZ's policies/ procedures /SOPs applicable to the construction works and landfill operational activities at the LHRRP, in particular, SOP 023 (Working Heights) and SOP 035 (Excavation Works).