
Construction Environmental Management Plan

Part 1 - Landfill Related Construction works only

Dual Gas and Leachate Trench construction works

Lucas Heights Resource Recovery Park

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1. Quality Information

1.1. Document Revision Register

Rev	Revision Details	Prepared by	Reviewed by	Authorised by	Date
1	Initial Draft SSC and EPA	Chandra Mohan Landfill Engineer/Project Manager	LC Chiang Landfill Manager New Illawarra Road Landfill	Kim Ross NSW Landfill/ Advisor	19 July 2017
2	Consultation Draft	Ken Telfer Compliance Manager LHRRP SUEZ	LC Chiang Landfill Manager New Illawarra Road Landfill	Kim Ross NSW Landfill/ Advisor	10 April 2018
3	Consultation Draft Following Council Comments Added SSC acceptance and clarified OEMP/CEMP relationship in Section 2.1	Ken Telfer Compliance Manager LHRRP SUEZ	LC Chiang Landfill Manager New Illawarra Road Landfill	Kim Ross NSW Landfill/ Advisor	15 May 2018
4	OEMP/CEMP relationship in Section 2.1	Ken Telfer Compliance Manager LHRRP SUEZ	LC Chiang Landfill Manager New Illawarra Road Landfill	Kim Ross NSW Landfill/ Advisor	6 Sep 2018

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2. Introduction

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.

On 23rd January 2017, NSW DoP approved a Development Consent, to increase landfill capacity, relocate and expand the garden organic facility and construct and operate a new resources recovery facility.

Under section C23 of the consent, a Dual Gas – Leachate Trench is required around the landfill where re profiling will be undertaken. This is required to ensure additional leachate and landfill gas will be collected and treated effectively.

An Operational Environmental Management Plan (OEMP) has been prepared for Landfill 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 covers 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 the Dual Gas and Leachate Trench, GO and ARRT Facilities, while these plans are in line with the OEMP and supporting SUEZ Environmental Quality and Safety systems, they will be prepared separately as standalone documents.

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

2.1 Purpose and Scope

In accordance with DC Condition C23, D1 – D3, 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.

The plan has been prepared in consultation with Southerland Shire Council (SSC) with correspondence found in Appendix 2.

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.

A full OEMP has been prepared for the site covering environmental, operational activities and relevant environmental impacts arising from landfill re-profiling, waste receipt, and waste filling at the site and 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. Where required further, detailed information has been supplied in separate supporting documentation such as this CEMP.

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.

2.2 Statutory Approvals that apply to the Site;

The following NSW legislation applies to the operations of LHRRP which is stipulated in the Operational Environmental Management Plan (OEMP):

- Environmental Planning and Assessment Act, 1979 (EP&A Act)
- Protection of the Environment Operations Act, 1997 (PoEO Act 1997)
- Waste Avoidance and Resource Recovery Act, 2001
- Waste Recycling and Processing Corporation Act, 2010
- National Environment Protection Council (New South Wales) Act, 1995
- Water Management Act, 2000
- Soil Conservation Act, 1938
- Public Health Act, 2010
- Work Health and Safety Act, 2011
- Contaminated Land Management Act 1997
- Heritage Act, 1977
- National Parks and Wildlife Act, 1974

Other Licence and Permits include

- Environmental Protection Licence (EPL) No 5065
- Environmental Protection Licence (EPL) No 13114
- Environmental Protection Licence (EPL) No 12520
- Sydney Trade Waste Agreement No 35034
- Lease agreement with ANSTO
- Voluntary Planning Agreement

2.3 The Development Consent SSD 6835

Consent Conditions C23, D1, D2 and D3 the CEMP requirements:

Relevant Conditions	Requirement	CEMP Reference
D1	The Applicant shall prepare a Construction Environmental Management Plan (CEMP) for the Development, to the satisfaction of the Secretary. The Plan must:	Noted
(a)	be prepared in consultation with Council and be approved by the Secretary prior to construction of the Development;	Appendix 1-2 SSC and EPA Correspondence TBA
(b)	identify the statutory approvals that apply to the site;	1.2
(c)	outline all environmental management practices and procedures to be followed during construction;	3
(d)	describe all activities to be undertaken on the site during construction, including a clear indication of construction stages;	2.2
(e)	detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;	4
(f)	describe the roles and responsibilities for all relevant employees involved in construction works; and	5
(g)	include the management plans under Condition D2 of this consent.	As below
D2	As part of the CEMP for the Development, required under Condition D1 of this consent, the Applicant shall include the following:	As below
(a)	(a construction management plan for the dual gas and leachate trench prepared in consultation with EPA (Condition C23);	Appendix 1 SSC and EPA

		Correspondence TBA
C23	The Applicant shall design and install a dual gas and leachate management trench near the perimeter of the re-profiled landfill to intercept sideways movement of leachate. The trench shall:	Refer Appendix 3
(a)	be designed in accordance with the requirements of the EPA;	Approved Refer Section E6.1 of EPL
(b)	be approved by the EPA, prior to construction of the trench and landfill re-profiling;	Appendix 1 SSC and EPA Correspondence TBA
(c)	include extraction risers along the length of the trench to allow extraction and transfer of leachate to the existing ring main; and	Refer Appendix 3
(d)	be installed in accordance with a CEMP, prepared by a suitably qualified person and submitted to the EPA at least one month prior to construction of the trench.	Noted
D3	The Applicant shall carry out construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Noted

3. 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.

3.1 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 3).

[2] Landfill re-profiling and Progressive Capping Indicative Staging Plans – Phase 1 to Phase 9 (Appendix 4)

[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).

3.2 Construction Program

The first section of the Dual Gas and Leachate Trench works commenced January 2018 and will continue over several years as landfilling progresses, in accordance with 'Landfill re-profiling Indicative Staging Plans (Appendix 4). The rate of progress will depend on the rate of profiling. It is important for each section of the trench to be completed before re profiling of that area.

3.3 Scope of the Dual Gas and Leachate Trench Construction Works

In areas to be re-profiled, the existing cover and capping system will be stripped back to promote leachate percolation from the new waste into the existing waste and to the existing leachate collection system. In undertaking the stripping works, leachate will be prevented from entering the surface water by the construction of separation bunds.

To intercept any sideways movement of leachate and providing additional extraction points, a dual gas/leachate management trench will be constructed near the perimeter of the re-profiling area. Sections of trench will be constructed as landfilling progresses.

The purpose designed trench will consist of a nominally 1.5 – 2 m deep trench within the existing waste mass backfilled with site-generated crushed sandstone and perforated pipe. The typical arrangement for the trench is illustrated in Figure 5.1. This trench will act as an extraction point for any sideways movement of leachate, should it occur. Extraction risers will be located along the length of the trench, to allow leachate to be extracted and transferred to the existing leachate ring main. Detailed design of the system will be undertaken prior to installation and will include consideration of the predicted leachate flows, settlement and strength requirements.

Prior to excavation, a further diversion wall will be installed on the outer side of the trench, approximately 5 metres from the excavation to allow vehicle access, the purpose of this is to direct any surface water to the sedimentation dam, preventing it leaving site upstream of the Sedimentation Pond. The wall will extend to the north of the recently installed the Gabbian Basket Channel.

Thus there will be two separate water flows to existing storages. As shown in figure 5.3

Details of the trench can be found in Appendix 3-4.

The trench will be on an incline towards the leachate treatment pond to allow drainage of the liquid, the gas lines will be under negative pressure to remove the landfill gas.

The leachate pipe will have sumps approximately every 100m to allow access for maintenance. While the gas pipe will be connected to gas well also approximately 100m which will be connected to the sites overall gas extraction system.

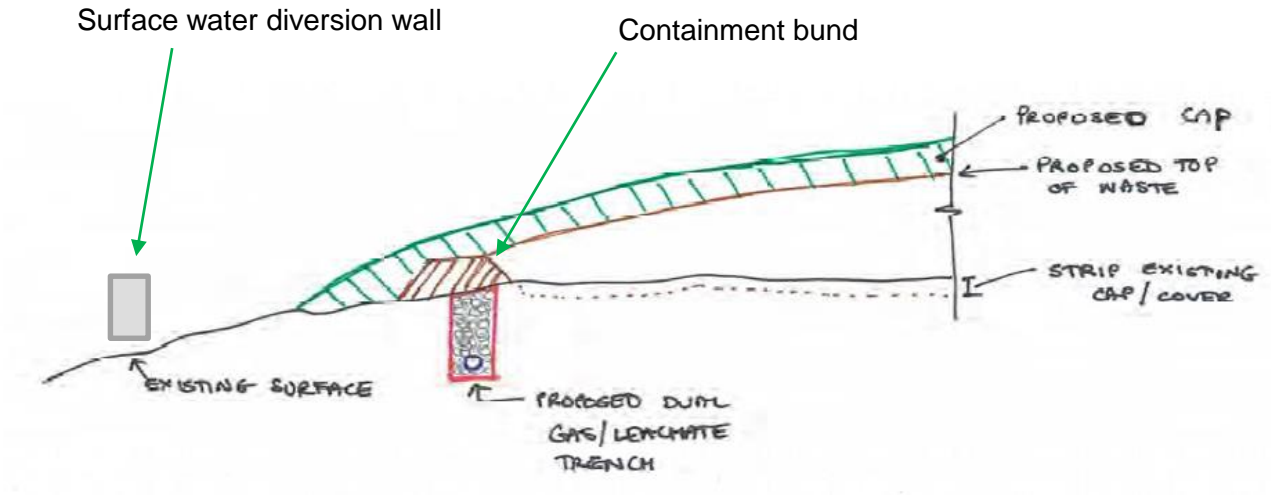


Figure 5.1 Proposed dual gas/leachate trench typical arrangement

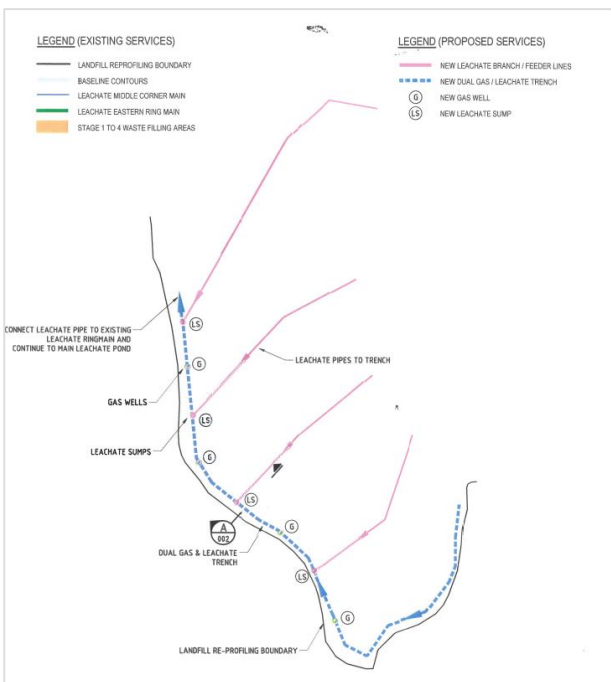


Fig 5.2 showing location of the trench around the area to be re-profiled

Figure 5.3
Green Line is the Gabbian Baskets to Sedimentation Dam.
Blue is Surface water diversion wall.

	Black is the Leachate Trench and Landfill Bund
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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 will 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 will 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 4 for details.

The main perimeter trench will 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 will permit collection and extraction of any leachate moving horizontally near the interface of the existing and newly landfilled waste into trench, which will 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 will 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 3 – 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.

Both the leachate containment bund and the surface water diversion wall, will be approximately 1 m high and 2 m wide, along the length of the re-profiling area.

4. Environmental Management Practices and Procedures to be followed during Construction

The following management plan practices are in line with the OEMP and supporting SUEZ Environmental Quality and Safety systems, however are specific to the dual leachate and gas trench.

4.1 Dust Management Plan

Dust emissions 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, topography, prevailing wind speed/direction, and distance to the nearest sensitive receptor. In line with the LHRRP OEMP, the objective of the Dust Management Plan is to prevention of air pollution and the degradation of local amenity.

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

- Minimising the length of the open trench at any one time.
- Watering down of all unsealed trafficable roads that are 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.

4.2 Noise Management Plan

Noise monitoring will be undertaken at the specific noise receptor locations, in accordance with DC Condition (C54). The Operations Manager will conduct regular site inspections to ensure that the Contractor is complying with the Noise Management Plan.

Preventative measures

- Ensure all vehicles accessing the site use designated access roadways.
- Demonstrate equipment will not cause excessive noise generation (based on the NSW EPA Environmental Guidelines: Solid Waste Landfills: Noise Control).
- Select plant and equipment to minimise noise emissions where possible, whilst maintaining efficiency of function. Residential grade silencers will be fitted and all noise control equipment will be maintained in good order.
- Maintain all machinery and equipment in proper working order in accordance with the manufacturer's requirements.
- No activities of heavy machinery outside site operating hours.
- Include a noise awareness component in site induction trainings.
- Prior to any alternative equipment being installed on site, an internal noise assessment will be conducted to ensure that it is in general accordance within the approved parameters.

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.

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

4.3 Surface Water and Sediment Management

Surface water management will involve diversion of clean surface water around the areas disturbed for the Dual Gas and Leachate Trench works.

This will include construction of temporary stormwater diversion drainage walls 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 drain. Diversion drains will be constructed progressively approximately 5 metres from the trench works 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 will enter Mill Creek. Thus the two streams will be kept separate.

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.

4.4 Leachate and Landfill Gas Management

Leachate management will involve preventing leachate from entering the surface water by the construction of separation diversion walls while undertaking the stripping works (existing intermediate cover/ capping system

Additional leachate controls including temporary sumps with pump out connections will 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.

4.5 Stockpile Management including Erosion and Sediment Control Plan;

All stockpiling works will 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 likely to remain in place for more than a week will be used as intermediate cover and replaced with clean soil.

4.6 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 following odour management and mitigation measures are to be employed during construction of the Dual Gas/ Leachate trenching works:

- Trench works will be undertaken in small sections only at a time to reduce potential odour emissions and the exposed trench will be backfilled and covered within a short timeframe, prior to commencing next section of the trench;
- At any one time, no more than 100m of trenches will be exposed;
- Ensure all equipment and all odour control measures, such as odour suppressing spray equipment are in place;
- Works 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 an 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 such as a tarpaulin, after installation of leachate pipe and aggregate bedding material;

- All open pipes will 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.

5. Performance Monitoring

Under the OEMP, daily and weekly checks are undertaken by site personnel for the overall environmental performance of the site. This includes visual checks on litter, noise, dust, odour by site supervisors and managers.

As the trench installation will always be in the general area of the tip face this monitoring will be included in the existing procedures.

The performance of the leachate extraction system also be John P Grey Engineering (JPG), and the gas extraction Energy Development Limited (EDL).

6. Roles and Responsibilities

Overall responsibility for the implementation of the CEMP rests with SUEZ. All employees and the contractors will meet the requirements of the CEMP and associated procedures. In-line with the LHRRP OEMP the responsibilities for the implementation of the CEMP are summarised in below.

Action	Responsibility	Timing
Overall implementation of the CEMP	Landfill Manager	Ongoing
Daily inspections for the work area.	Operations Manager	Ongoing
Scheduling trench work.	Operations Manager	As required
Insuring trench is built to correct level, angle and length to minimise exposure waste.	Landfill Manager / Operations Manager	As required
Installation of pipe work and inspection of joins occurs with set time frames to minimise exposure waste.	Operations Manager	As required
Backfilling occurs with set time frames to minimise exposure waste.	Operations Manager	As required

Appendix 1 Consultation with NSW EPA refer Section H for the Licence Variation

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 5065



SUEZ RECYCLING & RECOVERY PTY LTD
ABN 70 002 902 650 ACN 002 902 650
LOCKED BAG 5015
KINGSGROVE DC NSW 2208

Attention: Mr LC Chiang

Notice Number 1555375
File Number EF13/5346
Date 07-Dec-2017

NOTICE OF VARIATION OF LICENCE NO. 5065

BACKGROUND

A. SUEZ RECYCLING & RECOVERY PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 5065 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at NEW ILLAWARRA ROAD, LUCAS HEIGHTS, NSW, 2234 ("the premises").

Licence variation application and monitoring updates

- B. On 20-Jul-2017 the Environment Protection Authority (EPA) received an application for the variation of the licence which requested that the licence is updated with regard to its monitoring/discharge points.
- C. The EPA sought to clarify the application and additional information was provided during the EPA's inspection of the premises on 14 September 2017 and via email on 3 October 2017.
- D. The licensee submitted to the EPA on 6 April 2017, the letter from GHD to Kim Ross, NSW Landfill Advisor for Suez Recycling and Recovery "Lucas Heights 2 landfill site: Landfill Gas Investigation - Key findings and recommendations regarding landfill gas monitoring bore MB037 and elevated methane and/or carbon dioxide concentrations" dated 5 April 2017 (GHD ref: 21/26092) ("MB037 investigation report").
- E. The licensee submitted to the EPA on 6 September 2017, the document Groundwater Management Plan - Lucas Heights Resource Recovery Park, New Illawarra Road, Lucas Heights (September 2017), prepared for Suez Australia Pty Ltd by Douglas Partners, Revision 1 ("the GMP").
- F. The EPA has reviewed the licence variation application, the MB037 investigation report, and the GMP. Subsequently, the EPA has determined that the monitoring required by Conditions M2.2, M2.3, M8.1 and M8.2 need to be updated to reflect the EPA's review, and to align with the document *Environmental Guidelines: Solid Waste Landfills (Second edition, September 2016)*, prepared by the NSW EPA.
- G. On 5 December 2017, the licensee provided additional information regarding the location of monitoring points and a map to be incorporated into the licence variation application.

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Licence Variation



Approval of Landfill - Dual Gas and Leachate Trench

- H. On 20 July 2017, the licensee submitted to the EPA the following documents for review and approval:
- A. *Construction Environmental Management Plan Part 1 - Landfill Related Construction works only Dual Gas and Leachate Trench construction works, Lucas Heights Resource Recovery Park, prepared by Suez and Issued on July 2017 (version no. 0031) ("Dual Gas and Leachate Trench CEMP"), and*
 - B. The Dual Gas and Leachate Trench Concept Design, which consists of the following drawings:
 - A. *Phase 1 to 4 Filling, Proposed dual gas / leachate trench, sections and details, drawing No. 147-Se-CL-LHRRP-DA-001 (Revision A, Issued for review on 13.07.17) prepared by Suez,*
 - B. *Phase 1 to 4 Filling, Proposed dual gas / leachate trench, sections and details, drawing No. 147-Se-CL-LHRRP-DA-002 (Revision A, Issued for review on 13.07.17) prepared by Suez, and*
 - C. *Phase 1 to 4 Filling, Proposed dual gas / leachate trench, sections and details, drawing No. 147-Se-CL-LHRRP-DA-003 (Revision A, Issued for review on 13.07.17) prepared by Suez.*
 - C. The EPA has undertaken a review of the documentation provided and has no objections to the proposal. The EPA therefore Approves the Installation, subject to the requirements of a new licence condition at E6.1.

Second licence variation application

- I. On 12 October 2017, the EPA received an application for the variation of the licence to enable re-profiling (overtopping) of the existing LHRRP landfill as per the Development Consent for State Significant Development 6835.
- J. The EPA has agreed to vary the licence to permit the re-profiling, consistent with the Development Consent for State Significant Development Application no. 6835, subject to the requirements of licence conditions L3.4, E7.1, O5.8, O5.11, O5.12, O5.18, O6.6, O6.7 and O6.8.

Other

- K. The EPA has determined that the licence requires updating in respect of clarifying and updating a number of conditions generally and in relation to the EPA's *Environmental Guidelines: Solid Waste Landfills (Second edition, September 2016)*. These conditions are set out below.
- L. In accordance with the *Protection of the Environment Legislation Miscellaneous Amendments Act 2017* and changes with regard to supervisory licences, Environment Protection Licence no. 13384 is no longer in force and any conditions relating to this licence may be removed.
- M. The EPA has taken into account the objectives and factors listed in section 45 of the Act.

VARIATION OF LICENCE NO. 5065

1. By this notice the EPA varies licence No. 5065. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:
 - A. Some Condition numbers have changed as new Conditions have been added and old Conditions have been removed.

Licence Variation



- B. Condition P1.1 has been updated as follows:
- A. New monitoring points 44, 45, 46, 47, 48, 49, 50, 51, 52, 53 and 54 have been added.
 - B. The location descriptions for points 28, 30, 31, 32, 33, 52, 53, 1, 3, 4, 7, 8, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 40, 41, 42, 43 and 44 have been updated to refer to an updated map of the premises.
 - C. Condition L2.5 is updated to be clarify that where avoidance of water pollution is practical, the licensee is not able to choose to minimise water pollution instead.
 - D. Condition L3.1 has had its table updated to allow the disposal of leachate at the rate of 1500kL/day.
 - E. Condition L3.4 has been added to permit the disposal of waste in Areas E, D, B and A.
 - F. Condition O4.1, O4.2, O4.3 and R1.8 that relate to supervisory licence no. 13384 have been removed.
 - G. Condition O5.2 has had the sentence structure updated for ease of reading.
 - H. Condition O5.7 has been updated to "ceasing landfilling operations" instead of "ceasing operations" and now refers to the Required Outcome in Chapter 8 (Covering of Waste) in the EPA's *Solid Waste Landfill Guidelines* (2016), instead of Benchmark Technique 33 of the *Environmental Guidelines: Solid Waste Landfills* (1996).
 - I. Condition O5.8, relating to progressively final capping as soon as practicable, has been added.
 - J. Condition O5.11, relating to the maximum area of stripping in advance of landfilling "the Prepared Surface" has been added.
 - K. Condition O5.12, relating to the maximum area of the Prepared Surface that can be stripped back to form the Active Tipface, has been added.
 - L. Condition O5.16 has had the word "lawfully" added before the words "disposed of to sewer".
 - M. The title above Condition O5.17 is now "Landfill Gas".
 - N. Condition O5.18, relating to the retention and operation of landfill gas infrastructure, has been added.
 - O. Condition O6.6, relating to the installation and maintenance of freeboard markers, has been added.
 - P. Condition O6.7 relating to the maintenance of the 10ML settling zone has been added.
 - Q. Condition O6.8, relating to the use of the stormwater treatment plant to treat water following a rainfall event has been added.
 - R. Condition M2.2 (Air monitoring requirements) has been updated to add Carbon Dioxide monitoring to Monitoring Points 28, 29, 30, 31, 32, 33, 51, 52, 53 and 54.
 - S. Condition M2.3 (Water and/or Land Monitoring Requirements) has been updated as follows:
 - A. Point 1, Surface Water Monitoring: Now requires monitoring for Total organic carbon, Total dissolved solids, and Potassium.
 - B. Point 3,40, Leachate monitoring: Now requires monitoring for BOD, Chemical oxygen demand, Nickel, Total petroleum hydrocarbons, and Alkalinity (as bicarbonate). The monitoring frequency of Benzo(a)pyrene, Polycyclic aromatic hydrocarbons, and total petroleum hydrocarbons has been changed from quarterly to yearly.

Licence Variation



- C. Point 4, 7, 8, 16, 17, 18, 19, 24, 25, 26, 27, Groundwater Monitoring: Now requires monitoring for Redox potential, temperature, phosphorus, Bicarbonate alkalinity. The frequency of monitoring for nitrate and nitrite is now quarterly instead of yearly. The frequency of Benzo(a)pyrene, total petroleum hydrocarbons, polycyclic aromatic hydrocarbons is now yearly instead of quarterly.
- D. Points 44, 45, 46, 47, 48, 49, 50 have been added to the groundwater monitoring requirements.
- E. Point 1 has had the requirement to monitor Turbidity removed
- F. Points 51, 52, 53 and 54 have been added to the subsurface gas monitoring requirements.
- T. Condition M2.4 (b) has been updated to state "at a minimum of weekly intervals" instead of "minimal weekly intervals".
- U. Condition M2.4 (c) has been updated to refer to the methods outlined in Chapter 5.3 "Landfill gas sub-surface monitoring" of the EPA's *Environmental Guidelines: Solid Waste Landfill Guidelines* (2016) instead of Benchmark 16 of the EPA's *Environmental Guidelines: Solid Waste Landfills* (1996).
- V. Condition M8.2 has been updated to state 1% (v/v) methane instead of 1.25% (v/v) methane.
- W. A new Condition has been added at M8.3 which requires the licensee to submit a Draft Landfill Surface Gas Monitoring Programme.
- X. A new Condition has been added at M8.4 which requires the licensee to submit a Draft Landfill Sub-Surface Gas Monitoring Programme.
- Y. A new Condition has been added at M8.5 which specifies how the Draft Monitoring Programmes required by Conditions M8.3 and M8.4 must be submitted, and requires the licensee to consider any comments the EPA has on these draft Monitoring Programmes.
- Z. A note has been added underneath Condition M8.5 specifying that the Monitoring Programmes required by M8.3 and M8.4 may be incorporated into one document.
- AA. The previous Condition M8.4 is now Condition M8.7 and states "all fires" instead of "fires" and the word "etc" has been removed.
- AB. Condition R2.3 has been removed as this condition is duplicated at R4.2.
- AC. Condition R4.1 has been updated to include the requirement to report data available under Condition M8.7.
- AD. Condition R4.2 has had Monitoring Points 24, 25, 26, 27, 44, 45, 46, 47, 48, 49 and 50 added to the reporting requirement.
- AE. Condition E6.1 has been added specifying the conditions for the construction of the dual gas and leachate trench.
- AF. Condition E7.1 has been added specifying the conditions for the re-profiling works overtopping the existing landfill.
- AG. Condition E8.1, A special dictionary, has been added to the licence to clarify the following terms used in the licence: Cell, Daily cover, Final capping layer, Intermediate cover, Landfill gas, Landfilling operations, Leachate, and Other landfilling operations.

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation



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Trevor Wilson
Unit Head
Waste & Resource Recovery
(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Appendix 2 Consultation with Southernland Shire Council

Telfer, Ken

From: Ian Drinnan <IDrinnan@ssc.nsw.gov.au>
Sent: Monday, 16 July 2018 10:11 AM
To: Telfer, Ken
Cc: Chiang, Lc
Subject: RE: CEMP for Dual Gas and Leachate Trench - OEMP Modifications

Hi Ken,

I've had a look through the CEMP for the Dual Gas and Leachate Trench. The additional text and diagrams address Council's previous comments. As such we are now satisfied with the document and no further amendments are required.

I'll look through the OEMP mods now and get back to you asap.

Regards

SUTHERLANDSHIRE



Ian Drinnan

Manager / Principal Environmental Scientist
T 9710 0547
idrinnan@ssc.nsw.gov.au
sutherlandshire.nsw.gov.au

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From: Telfer, Ken [mailto:ken.telfer@suez.com]
Sent: Wednesday, 11 July 2018 3:43 PM
To: Ian Drinnan
Cc: Chiang, Lc
Subject: CEMP for Dual Gas and Leachate Trench - OEMP Modifications

Hi Ian

Please find updated Dual Gas and Leachate Trench clarifying the bunding terminology.

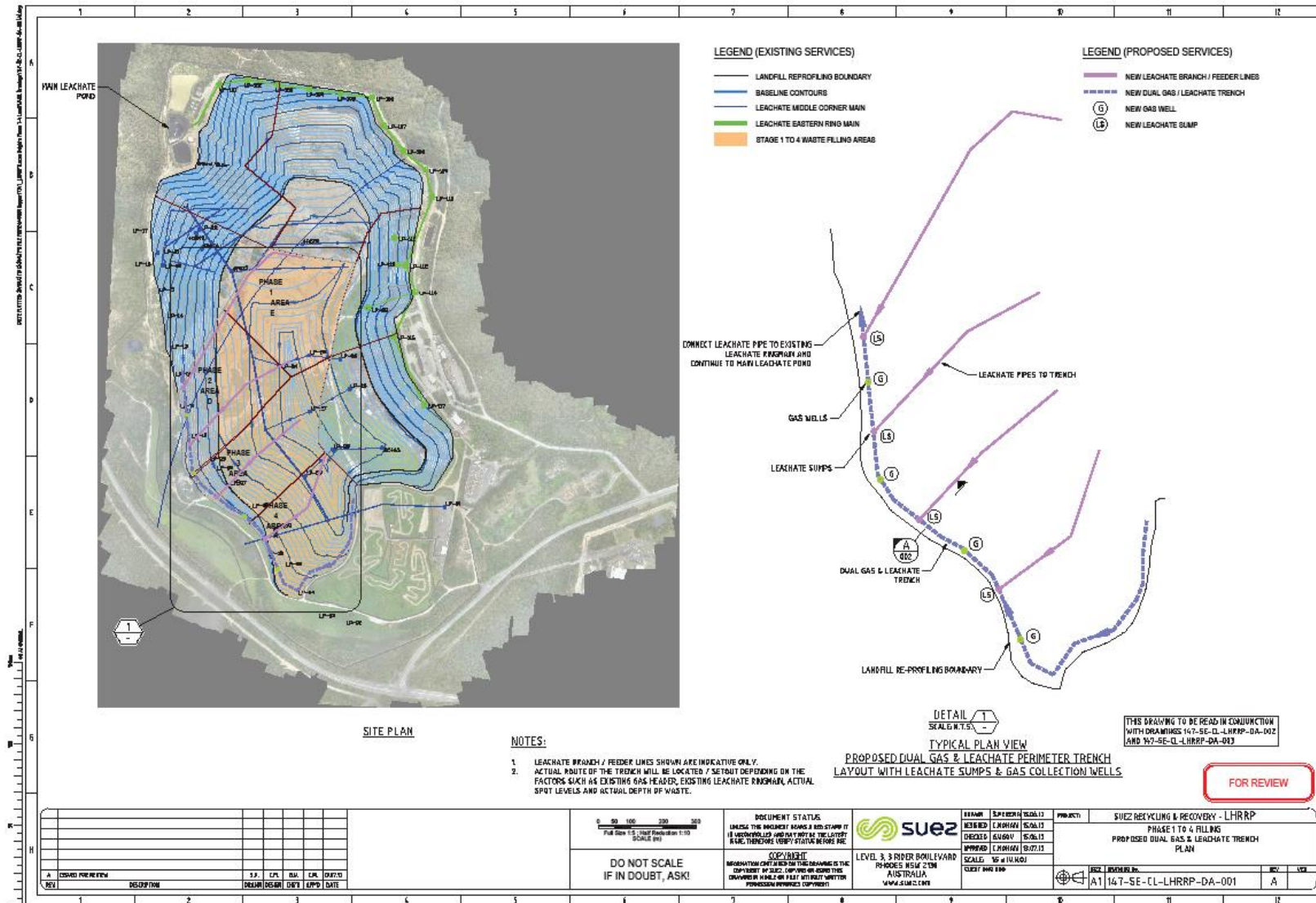
Also have you been able to consider the proposed changes to the OEMP, as discussed refer attached email?

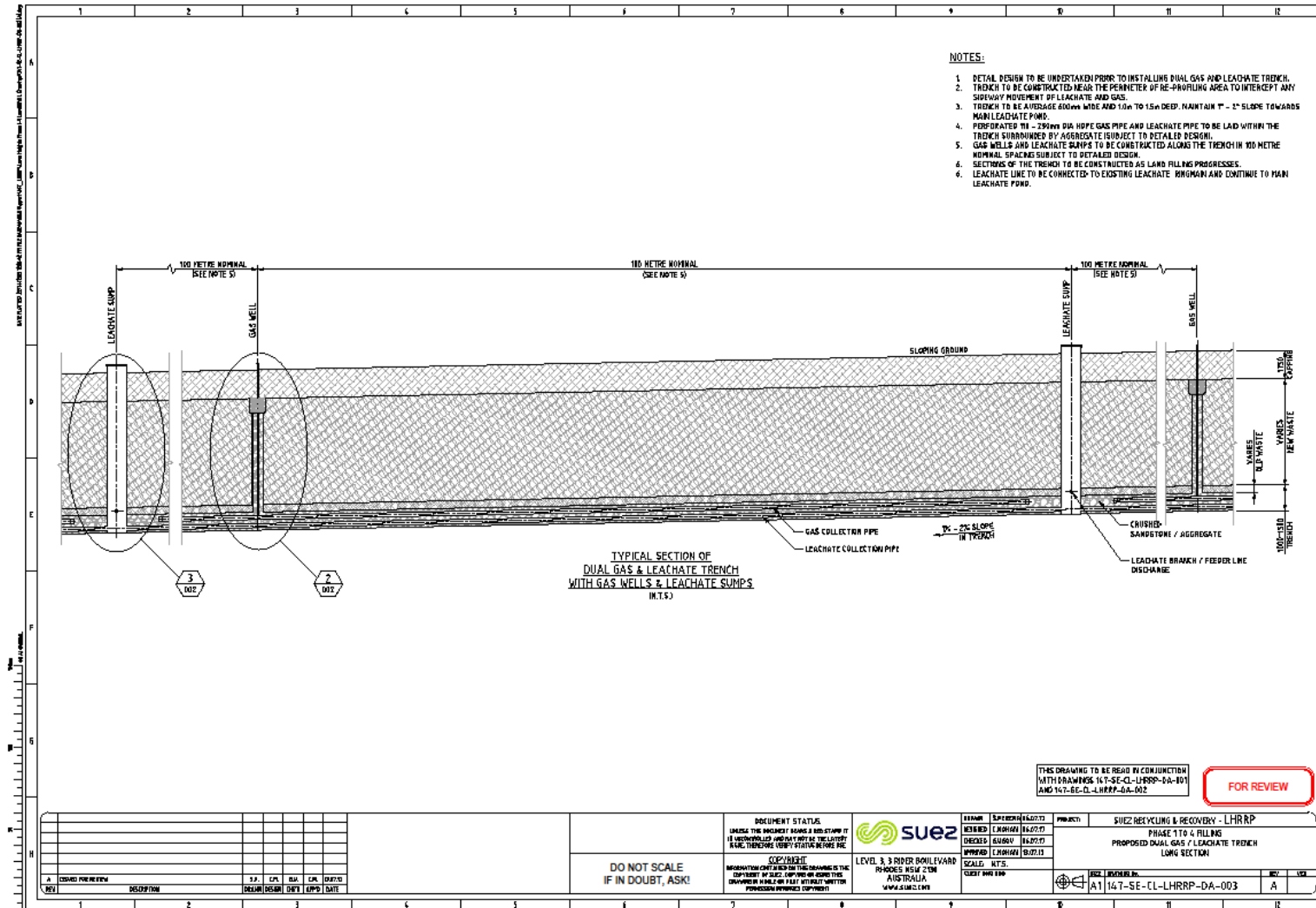
Please have no hesitation in contacting me to discuss.

Thanks

Ken Telfer
Compliance Manager
New Ilawarra Road Landfill

Appendix 3 Dual Gas and Leachate Trench Program and Design Overview





Appendix 4 Landfill Staging Plan

Stages of Re-Profiling which determines staging – progress of Dual Leachate Gas Trench

