Operation Environmental Management Plan

Googong Township Integrated Water Cycle Project:
Stage A - Network
September 2013

Member of the RPS Group Plc

Manidis Roberts

RPS MANIDIS ROBERTS PTY LTD
(formerly Manidis Roberts Pty Ltd)
ABN 42 003 550 972

Level 9, 17 York Street, Sydney NSW 2000
GPO Box 91, Sydney NSW 2001

t (02) 9248 9800 **f** (02) 9248 9810
info@manidisroberts.com.au
www.manidisroberts.com.au

Quality control

Our reference	12083
Version number	4.0
Date	20 September 2013
Prepared by	Natalie Green
Reviewed by	Chontelle Perucich
Approved by	Rob Salisbury

Contents

List of tables

List of figures

1 Introduction

1.1 Background

Googong Township Proprietary Limited (GTPL) – a partnership between Canberra Investment Corporation (CIC) and Mirvac, is responsible for the development of the new Googong Township that will be located in the Canberra region, around 7 km south of Queanbeyan in NSW. The new Googong Township will be home to about 16,000 people and developed over the next 25 years. The township is designed around an integrated water cycle (IWC), with a dedicated Water Recycling Plant (WRP) that will reduce the consumption of potable water in the community by around 60 per cent and recycle the township's water for non-potable use.

The *Googong Township Water Cycle Project Environmental Assessment* (November, 2010) (EA) was prepared under (the now repealed) Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to assess the impacts of construction and operation of infrastructure for the potable water, recycled water and sewage system required to service the township.

Concept Approval for the ultimate development (Stage 1 and Stage 2) and a Project Approval for Stage 1 of the Googong Township IWC Project were granted by the NSW Planning Assessment Commission, under delegation from the Minister for Planning and Infrastructure on 24 November 2011.

The Googong Township IWC Project is being constructed and operated in stages to ensure the infrastructure is correctly sized to meet the incremental level of demand.

Stage 1 of the IWC comprises new infrastructure to deliver potable drinking water to the township, treat wastewater and utilise recycled water for re-use in the township and for environmental discharge. Stage 1 includes a new WRP, temporary reservoirs for recycled and potable water, pumping stations and mains pipework (including rising and distribution mains) for sewage, recycled water and potable water (refer Figure 1).

Figure 1 Stage 1 of the Googong Township IWC Project

1.2 Staging

Stage 1 of the Googong Township IWC Project will be operated in stages (Stage A – Network, Stage A – Network and WRP, Stage A + B – Network and WRP).

Stage A – Network will operate until the WRP is operational. The WRP cannot be commissioned and subsequently operated until there is sufficient sewage load. As such, commissioning of the WRP will not commence until an equivalent population (EP) of 600 is reached. Until the WRP is operational, Stage A – Network will include:

- Transportation of potable water tankered to the interim reservoir (Phase 1 of providing a potable water supply) or potable water pumped to the interim reservoir via the Bulk Water Pumping Station (BWPS) (Phase 2 of providing a potable water supply).
- Sewage from the township will be collected at sewage pumping station (SPS) No. 1 (SPS1) for offsite treatment.
- Sewage will be transported via trucks to one of two potential offsite treatment facilities.

A more detailed description of Stage A – Network operations is provided in Section 2.1.

Note that the operation phase of Stage A – Network does not include construction, commissioning or testing of the Stage A – Network or the WRP – such activities are covered by the relevant Construction Environmental Management Plans (CEMP) and the implementation of the CEMPs is the responsibility of GTPL.

Future stages, once the WRP is operational, include:

- Stage A – Network and Water Recycling Plant (WRP) – operation for up to 1,900 EP.
- Stage A + B – Network and WRP – operation for up to 3,600 EP.

1.3 Purpose of this document

The purpose of this Operation Environmental Management Plan (OEMP) is to provide an approach to the management of environmental issues during Stage A – Network and to meet the requirements of the Conditions of Approval (CoA) and Statement of Commitments (SoC) for the Googong Township IWC Project, where relevant.

Condition of Approval (CoA) A6 allows GTPL to submit any strategy, plan or program required by the approval on a progressive basis, with the approval of the Director-General. In accordance with this CoA and the Staging Report, this OEMP has been prepared to consider operation of Stage A – Network only.

For Stage A – Network, GTPL will take a lead operational role, as most of the interim sewage arrangements will be managed by GTPL. However, ACTEW and Queanbeyan City Council (QCC) as co-operators, will also have roles and responsibilities that are detailed in this OEMP.

This OEMP, while relevant to Stage A – Network only, sets up a framework for managing operational environmental risks and will be a 'living' document that will be updated throughout the various stages of the Googong Township IWC Project.

As the Googong Township IWC Project progresses, all roles, responsibilities, monitoring and reporting requirements in this OEMP will be reviewed and updated. The OEMP will be updated prior to the

operation of the WRP and at the review milestones are listed in Section 1.9. As GTPL 'hand over' water cycle infrastructure assets to QCC, the OEMP will be updated to reflect the changes in operator and the transfer of responsibilities.

This OEMP has been prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004) and is the overarching document in the environmental management system that includes a number of other management documents. The environmental management system structure is described in Section 1.7.

1.4 Conditions of Approval and Statement of Commitments

Table 1 and Table 2 outline where the CoA and SoCs are met for Stage A – Network in this OEMP (or in other project documents).

Table 1 CoA requirements for Stage A – Network

CoA No.	Requirement	Reference/Comments
A7	The Proponent shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation of the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the project.	Section 3.2 Appendix B
A8	The Proponent shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Section 5
A9	The Proponent shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors.	Section 7and Section 8
A13	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation or rehabilitation of the project.	This Plan and environmental management documents identified in Section 1.6.
B1	The Proponent shall ensure that all the plant and equipment used on site is: a) maintained in a proper and efficient condition; and b) operated in a proper and efficient manner.	Section 4.4
B2	Except as may be expressly provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997.*	Section 4.4 Appendix B

CoA No.	Requirement	Reference/Comments
B3	The Proponent shall provide a compensatory water supply to any land owner whose water entitlements are adversely impacted (other than an impact that is negligible) as a result of the project, in accordance with the criteria established in the Water Management Plan in condition D8. The compensatory water supply measures shall provide an alternate water supply for the duration of the impact attributed to the project. The alternate water supply shall at least be of an equivalent quality and quantity to the affected supply and be provided within 24 hours of the loss being identified, or as otherwise agreed by the affected resident/land owner. If the Proponent is unable to provide an alternative supply of water, then it shall provide reasonable alternative compensation in consultation with the affected land owner. If the Proponent and the land owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.	N/A
B6	The Proponent shall ensure no offensive odours are emitted from the project site, as defined under the *Protection of the Environment Operations Act 1997.*	Section 4.4
B7	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.	Section 4.4
B8	The Proponent shall maximise the reuse and/or recycling of waste materials generated on site, to minimise the need for treatment or disposal of those materials outside the site.	Section 4.4
B9	The Proponent shall ensure that all liquid and/or non-liquid waste generated by the project is assessed and classified in accordance with *Waste Classification Guidelines* (DECC 2008, or any future guideline that may supersede that document) and where removed from the site is only directed to a waste management facility lawfully permitted to accept those materials.	Section 3.2 and Section 4.4
B10	The Proponent shall ensure that no green waste is burned on site during the life of the project.	Section 4.4
B15	The Proponent shall store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) DECC's *Environment Protection Manual Technical Bulletin – Bunding and Spill Management*. In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.	Section 4.4

<table>
<tr><th>CoA No.</th><th>Requirement</th><th>Reference/Comments</th></tr>
<tr><td>B17</td><td>The Proponent shall:
(a) take all practicable measures to mitigate off-site lighting impacts from the construction and operation of the project; and
(b) ensure that all external lighting associated wit the project complies with Australian Standard AS4282 – 1997 – Control of the Obtrusive Effects of Outdoor Lighting.</td><td>N/A</td></tr>
<tr><td>D1</td><td>Noise emitted from the operation of the project-related infrastructure shall not exceed 35dB(A) ($L_{Aeq(15min)}$) at any residence on privately owned land. Note: Noise generated by the project is to be measures in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.</td><td>Section 4.4</td></tr>
<tr><td>D2</td><td>Water provided as drinking water to service the Googong Township, as outlined under the documents referred to in condition A1, shall comply with the Australian Drinking Water Guidelines 2004.</td><td>Section 4.4</td></tr>
<tr><td>D3</td><td>Ongoing management and monitoring of the supply of the drinking water shall form part of the NSW Drinking Water Monitoring Program.</td><td>Section 4.4</td></tr>
<tr><td>D4</td><td>Water provided as recycled water to service the Googong Township, as outlined under the documents referred to in Condition A1, shall comply with National Water Quality Management Strategy – Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Natural Resource Management Ministerial Council, Environment, Protection and Heritage Council and Australian Health Ministers' Conference, 2006).</td><td>N/A</td></tr>
<tr><td>D5</td><td>The recycled water discharged to the environment shall not exceed the water quality parameters identified in Table D1 below. If the results of the water quality monitoring undertaken in accordance with the Water Management Plan in condition D8 indicates that the downstream ambient water quality criteria of the Queanbeyan River is exceeded as a result of the project, then the project shall be adjusted to reduce the concentration of the relevant parameters in the recycled water discharged to the environment.
Table D1: Effluent Quality Limits
<table><tr><th rowspan="2">Parameter</th><th colspan="2">Effluent discharge limits to environment</th></tr><tr><th>Units</th><th>90th Percentile</th></tr><tr><td>BOD</td><td>mg/L</td><td>10</td></tr><tr><td>Suspended Solids</td><td>mg/L</td><td>10</td></tr><tr><td>TN</td><td>mg/L</td><td>10</td></tr><tr><td>TP</td><td>mg/L</td><td>0.5</td></tr><tr><td>TDS</td><td>mg/L</td><td>700</td></tr><tr><td>Faecal Coliforms</td><td>cfu/100mL</td><td>150</td></tr><tr><td>pH</td><td></td><td>6.5-8.0</td></tr><tr><td>Free Chlorine (residual)</td><td>mg/L</td><td>0.1</td></tr><tr><td>Nitrogen – Ammonia</td><td>mg/L</td><td>2</td></tr><tr><td>Oil & Grease</td><td>mg/L</td><td>2</td></tr></table></td><td>N/A</td></tr>
<tr><td>D6</td><td>No recycled water shall be discharged to the environment until at least 12 months of baseline data for the receiving waterways has been obtained and the flow release protocol has been established, in accordance with the approved Water Management Plan in condition D8.</td><td>Refer Water Management Plan (WMP)</td></tr>
</table>

CoA No.	Requirement	Reference/Comments
D7	The Proponent shall prepare and implement an Operation Environmental Management Plan (OEMP) for the project, in accordance with *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004) or its latest version. The Plan shall be prepared in consultation with councils, OEH and NOW and include, but not necessarily be limited to:	This Plan.
	(a) identification of all statutory and other obligations that the Proponent is required to fulfil in relation to the operation of the development, including all consents, licences, approvals and consultations;	Section 3.1 and Section 3.2 Appendix B
	(b) specific consideration of relevant measures to address any requirements identified in the documents referred to under condition A1;	Section 4.4
	(c) a management organisational chart identifying the roles and responsibilities for all relevant employees involved in the operation of the project;	Section 4.2 Figure 8
	(d) overall environmental policies and principles to be applied to the operation of the project;	Section 3.3
	(e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval;	Section 3.4
	(f) standards and performance measures to be applied to the project, and means by which environmental performance can be periodically reviewed and improved (where appropriate), including what actions will be taken to address identified potential adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:	This Plan.
	(i) detailed contingency procedures for dealing with: power failures; sewer overflow following failures at the sewage pumping stations and/or during extended periods of wet weather flows; and structural failures in the sewage and recycled water transfer pipeline infrastructure;	Section 4.4 and Section 7.5 Table 5
	(ii) noise emissions including measures for regular performance monitoring of noise generated by the project and measures to proactively respond to and deal with noise complaints;	Section 4.4 and Section 6.3
	(iii) air quality impacts, particularly odour;	Section 4.4
	(iv) operational traffic impacts, particularly during maintenance, and procedures to restore any damage attributable to the project during the operation phase;	Section 4.4
	(v) mosquito control and the potential for algal blooms;	N/A
	(vi) impacts of operational activities on the Googong Dam and foreshores area, particularly water quality;	Section 4.4
	(vii) hazard and safety and emergency management measures including measures to prevent and control bushfires;	Section 4.4 and Section 7.5
	(g) procedures for the periodic review and update of the Operation Environmental Management Plan as necessary;	Section 1.9 and Section 8.6

CoA No.	Requirement	Reference/Comments
	(h) the Management Plans listed under conditions D8 and D9; and	Refer WMP and Pink-tailed Worm-lizard Protection and Management Plan
	(i) the environmental monitoring requirements outlined under this approval.	Section 8.2
	The OEMP shall be submitted for the approval of the Director-General no later than one month prior to the commencement of Operation of the project or within such period as otherwise agreed by the Director-General. Operation activities shall not commence until written approval has been received from the Director-General.	Section 1.6
D8	The Proponent shall prepare and implement a Water Management Plan for the project to manage potential impacts on surface water and groundwater systems during operation of the project. The plan must be prepared in accordance with *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000), particularly Volume 1, Chapter 5: Guidelines for Recreational Water Quality and Aesthetics and Volume 2, section 8.2.3: Aquatic Ecosystems, and include:	Refer WMP
	(a) a Surface Water Monitoring Program, including:	Refer WMP
	(i) procedures to obtain detailed baseline data on surface water flows and quality in creeks and other waterbodies that could potentially be affected by the project, including relevant parameters and monitoring locations;	Refer WMP
	(ii) surface water and stream health impact assessment criteria including trigger levels for investigating any potentially adverse surface water impacts and for the supply of compensatory water;	Refer WMP
	(iii) a program to monitor and assess: • surface water flows and quality; • impacts on water users; • stream health and habitat; and • channel stability;	Refer WMP
	(b) a Groundwater Monitoring Program, including:	Refer WMP
	(i) detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the project;	Refer WMP
	(ii) groundwater impact assessment criteria including trigger levels for investigating any potentially adverse groundwater impacts;	Refer WMP
	(iii) a program to monitor and assess: • impacts on the groundwater supply of potentially affected landowners; • impacts on any groundwater dependent ecosystems and riparian vegetation;	Refer WMP
	(c) a Recycled Water Flow Release Protocol, including:	Refer WMP

CoA No.	Requirement	Reference/Comments
	(i) recommended discharge rates based on baseline data of receiving waterways and meteorological conditions;	Refer WMP
	(ii) the detailed design and operation specifications for the discharge structure/s;	Refer WMP
	(iii) procedures for the review and amendment of flow release protocols based on the outcomes of monitoring;	Refer WMP
	(d) a Surface and Ground Water Response Plan, including:	Refer WMP
	(i) a response protocol for any exceedances of the surface water and groundwater assessment criteria;	Refer WMP
	(ii) measures to notify and compensate landowners of privately-owned land whose water supply is adversely affected by the project; and	Refer WMP
	(iii) measures to mitigate and/or offset any adverse impacts on waterways, groundwater dependent ecosystems and/or riparian vegetation; and	Refer WMP
	(e) an Irrigation Management Plan prepared in accordance with relevant guidelines including Environmental Guidelines: Use of Effluent by Irrigation (DEC, 2004) and National Guidelines for Water Recycling: Managing Health and Environmental Risks (Natural Resource Management Ministerial Council, Environment Protection and Heritage Council and Australian Health Ministers' Conference, 2006), which must:	Refer WMP
	(i) include detailed baseline data of the soil properties of the proposed irrigation areas, including salinity levels and a nutrient budget;	Refer WMP
	(ii) identify any potential off-site risks and impacts and describe measures to minimise any environmental impacts;	Refer WMP
	(iii) include a protocol for the use of recycled effluent for irrigation including application rates and restrictions; and	Refer WMP
	(iv) include a program to monitor areas subject to irrigation.	Refer WMP
	The Water Management Plan and sub-plans shall be prepared in consultation with OEH, NOW, NSW Health and DTIRIS (Fisheries), and be submitted to the Director-General for approval by the end of June 2012 and prior to commencing operation of the project, unless otherwise agreed by the Director-General.	Refer WMP
D9	The Proponent shall prepare and implement an Aprasia Conservation Management Plan for the project to provide and maintain habitat for the Pink-tailed Legless Lizard in accordance with condition B14. This plan must be prepared in consultation with OEH and DSEWPaC, and be submitted to the Director-General for approval by the end of June 2012. The Plan must"	Refer Pink-tailed Worm-lizard Protection and Management Plan
	(a) be prepared or peer reviewed by a suitably qualified ecologist;	Refer Pink-tailed Worm-lizard Protection and Management Plan
	(b) be based on the recommendations in the EA and the objectives of the National Recovery Plan for the species;	Refer Pink-tailed Worm-lizard Protection and Management Plan

CoA No.	Requirement	Reference/Comments
	(c) outline the roles and responsibilities of parties that would implement the plan;	Refer Pink-tailed Worm-lizard Protection and Management Plan
	(d) set out the appropriate objectives, actions and milestones for the Proponent, prior to handing over ownership of this land to Queanbeyan City Council;	Refer Pink-tailed Worm-lizard Protection and Management Plan
	(e) include: (i) procedures to survey and mark the boundary of the conservation area and a 20 metre buffer zone; (ii) procedures for the establishment and maintenance of boundary fencing, including measures to protect kangaroo grazing; (iii) procedures and success criteria for habitat restoration and weed management; (iv) procedures to control and monitor access and use of the conservation area by domestic and feral animals; (v) a community education program; (vi) procedures to achieve long-term security for the conservation area; (vii) a program to monitor the Pink-tailed Legless Lizard population within the conservation area; and (viii) a program which sets out milestones dates for achieving the actions and measures in the plan.	Refer Pink-tailed Worm-lizard Protection and Management Plan
E1	The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of becoming aware of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.	Section 7.3
E2	The Proponent shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition E1 of this approval, within such period as the Director-General may require.	Section 7.4

Table 2 SoC requirements for OEMP

SoC No.	Requirement	Reference/Comments
A1	Aquatic ecology impacts are considered under WQ4. A water quality and aquatic ecology monitoring program will be developed to monitor construction and operation impacts of the Project on waterways (refer to WQ4 for further details). The monitoring program will include siting of the aquatic ecology monitoring location to ensure viable comparison with historical and other recent river ecology data.	Refer WMP
AQ1	The dispersion modelling undertaken as part of the Googong New Town WRP Odour Impact Assessment will be validated at a later stage in the design, for the ultimate development. This will include consideration of: • Site-specific meteorological data, collected at the WRP site for at least 12 months prior to commissioning. • Site specific odour data collected during and following commissioning, prior to the residential development of the immediate area west of the WRP.	N/A
AQ3	Odour complaints will be registered and investigated. Verified odour issues will be addressed with engineering, operational or other mitigation and management measures.	Section 4.4
D3	The construction and operation of the Project will comply with Queanbeyan City Council's Development Specification – Googong.	Stage A – Network will comply with any development specifications as they become available.
F3	An Operational environmental management plan (OEMP) will be prepared for the Project, and implemented. This will detail emergency, spill and maintenance procedures as well as monitoring and reporting regimes as they relate to the protection of terrestrial and aquatic ecology.	This Plan and WMP Sections 4.2, 7.5 and 8.2
G3	Develop a groundwater monitoring program for the Project in consultation with relevant stakeholders. This program will address the following:	Refer WMP
	• The salt levels in groundwater will be regularly monitored during and after Stage 1 of the Project.	Refer WMP
	• Groundwater samples will be collected from both the shallow and regional aquifers, and soil conductivity (that is, salt) mapping will be carried out where possible in areas of inferred impact.	Refer WMP
	• The monitoring of salt levels in the receiving waters will be indicative of the effectiveness of the stormwater system (refer below).	Refer WMP
G7	Soil monitoring in low-lying areas, where salt is likely to accumulate, will be undertaken. If salt levels were shown to be increasing, engineered drainage structures to nearby creek lines will be constructed. As a preventative measure, to avoid future bare soil patches and erosion, salt-tolerant landscaping will be used in low-lying areas.	Refer WMP
G8	Undertake the groundwater monitoring program as outlined in Table 12 of this report.	Refer WMP

SoC No.	Requirement	Reference/Comments
HH1	Recycled water will meet the requirements for non-potable domestic use as defined in the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks* (NRMMC, EPHC & AHMC, 2006). Recycled water will be appropriately planned and industry accepted management systems put in place to assure appropriate product quality.	N/A
HH2	A Recycled Water Risk Management Plan (RWRMP) will be prepared based on the risk management framework outlined in Australian National Guidelines for Water Recycling – Managing Health and Environmental Risks (2006). This RWRMP will be a living document that will be refined throughout operation of the recycled water scheme. It will involve:	N/A
	• Developing the RWRMP through hazard identification (for the operation of the recycled water system and use of recycled water).	N/A
	• Identifying the significant human and environmental health risks.	N/A
	• Conducting validation, operational and verification monitoring to determine the success of the following respective components of the scheme: the risk management system, preventative measures, and the achievement of safe and sustainable water recycling.	N/A
	• Completing the RWRMP, based on the monitoring results.	N/A
HH3	The Proponent will apply the following risk management practices to limit exposures to recycled water:	N/A
	• Installation regulations and codes of practice that include systematic processes to reduce the probability of cross-connections.	N/A
	• Materials codes and regulations that easily discriminate drinking and recycled water plumbing.	N/A
	• Regulations that limit the legal installation and modification of plumbing systems to licensed individuals.	N/A
	• Education on recycled water use and the need to avoid creating cross-connections.	N/A
	• Installation of backflow prevention.	N/A
	• Operational checking (that is, testing of recycled effluent quality following treatment) and connection auditing.	N/A
	• Continue to liaise with relevant stakeholders to ensure awareness and understanding of the Project (including discharges of excess recycled water to the environment) and to address arising issues.	N/A
N2	The acoustic treatments specified for the WRP components, as outlined in Appendix J, will be implemented and then reviewed for effectiveness following noise measurement verification.	N/A
OP1	Establishment and location details for monitoring sites will be in accordance with WQ4. Results of all monitoring programs that form part of these Statement of Commitments will be considered in terms of overall environmental impact on a regular basis, including:	Refer WMP Section 1.9 and 8.6

SoC No.	Requirement	Reference/Comments
	• The trade-off between potable water savings, reduction in stormwater discharges and increased recycled water discharges.	Refer WMP Section 1.9 and 8.6
	• Relative impacts of excess recycled water discharges compared to impacts on soil and groundwater from recycled water uses.	Refer WMP Section 1.9 and 8.6
	• The timeframe for relative comparisons of impacts of components of the water cycle will be determined in consultation with the relevant government agencies.	Refer WMP Section 1.9 and 8.6
	• The ability to feedback results for further stages of Googong Township.	Refer WMP Section 1.9 and 8.6
OP2	Telemetry will be installed on all major water cycle infrastructure to gather operational data.	Section 4.4 and 8.2
OP3	Management plans will be reviewed with consideration of the outcomes of monitoring programs: • Additional management and mitigation measures will be implemented, should monitoring identify that the water cycle system is operating outside of modelled or expected parameters.	Section 1.9 and 8.6
R1	Measures typical of facilities of the nature and size of the Project will include: • Storing relevant chemicals below threshold quantity levels. • Undertaking activities in accordance with relevant MSDS's. • Installing bunded areas for the storage and delivery of chemicals in accordance with AS 3780:2008 *The storage and handling of corrosive substances* and the relevant MSDS's. • Developing and implementing appropriate procedures for delivery, handling and accidental spills of chemicals.	Section 4.4
R2	The OEMP and RWRMP will outline the management of emergency situations for all key water cycle infrastructure. For emergency or maintenance events associated with the WRP, the following will be implemented/installed, and will include measures such as: • Telemetry at all key infrastructure (eg SCADA). • An alarm system. • Backup procedures should the power to infrastructure be interrupted. • First flush tank at the WRP and wet well emergency storage at the SPS's. • Overflows at the WRP and the SPS's.	Section 4.4 and 7.5
S3	To prevent and manage spills, the proponent will: • Implement chemical transport, storage, handling and disposal procedures, in accordance with requirements for dangerous goods, of environmental legislation and industry standards. • Ensure spill response procedures and equipment for containment and recovery are available on site. • Conduct workforce training on the transport, storage, handling and disposal procedures relating to chemicals.	Section 4.4

SoC No.	Requirement	Reference/Comments
S5	Early stages of Googong Township will be used as a trial to better understand the movement of salt in the landscape. It will involve the installation of carefully located piezometers and the monitoring of results, as well as monitoring the effectiveness of pre-emptive measures such as any subsurface drainage system. The results will be used to improve strategies for ensuing stages.	Refer WMP
	Recycled water users will be informed of the specific risks associated with irrigation with recycled water, in the context of developing a complete awareness of the Project and its environmental trade-offs. This will include: • Education on salinity impacts on soil and plant damage and regrowth. • Encouragement to grow salt-tolerant species, particularly in areas considered to be of high risk. Householders will be educated on the benefits of using detergents that are low in phosphorus, sodium and salt – in terms of the impact on recycled water quality. This will form part of the broad community education program.	N/A
T5	A Traffic management plan will be prepared for the operation and maintenance of key water cycle infrastructure, which will include: • Standard management and mitigation measures for managing vehicle movements at water cycle infrastructure sites. • Timing of truck movements for deliveries and disposal, and parking arrangements.	Section 4.4 Appendix E
V1	Additional vegetation will be planted along site boundaries to obscure views of infrastructure from sensitive receivers.	Refer Landscape Management Plan
W2	Operational management of wastes will be incorporated into the OEMP for the key sites. Some inclusions are procedures for:	N/A
	• The collection and transportation of grit and screenings from the WRP to an appropriately licensed facility.	N/A
	• Treatment and handling of biosolids, suitable for use in agriculture, forestry, soil and site rehabilitation (Grade B), in accordance with OEH's *Environmental Guidelines on the Use and Disposal of Biosolids Products* (2007).	N/A
	• Management and monitoring of the discharge of treated effluent (recycled water) during commissioning and verification phases of the WRP operation.	N/A
	• Waste management for putrescible and recyclable wastes generated from the WRP and other water cycle infrastructure.	Section 4.4
	• Procedures for the collection and dewatering of any solid matter removed through maintenance activities of water cycle infrastructure, and transportation and disposal off site.	Section 4.4
	• Vehicle routes, and the timing of trips, associated with waste management, in consideration of the traffic management plan.	Section 4.4 Appendix E

SoC No.	Requirement	Reference/Comments
WQ4	A monitoring program to assess the potential impacts of the Project on the Queanbeyan River (including water quality, flow, fish migration, macrophytes and macro invertebrate communities) will be undertaken.	Refer WMP
	• Details of the monitoring program will be determined in consultation with relevant government authorities/stakeholders (including the OEH, DPI and, potentially, ACTEW Corporation). Such consultation will ensure the sharing of available data for the Queanbeyan River for comparative and impact assessment purposes.	Refer WMP
	• A new monitoring site within the Queanbeyan River is proposed to measure water quality and aquatic ecology impacts over the medium term. This site will be located near the confluence of Googong Creek and Queanbeyan River (and will be sited to enable comparison with data collected from upstream and downstream sites).	Refer WMP
	• Monitoring will commence approximately 12 months prior to commissioning the water recycling plant.	Refer WMP
WQ5	The operation environmental management plan (OEMP) will outline erosion and sediment control measures to protect buffer and riparian vegetation zones, in general accordance with Statement of Commitment WQ3.	N/A

1.5 Consultation

Consultation is an ongoing and vital component of GTPL's approach to developing the Googong Township. The primary objective of consultation is to keep stakeholders informed of the project's development, and to establish effective lines of communication between GTPL and key stakeholders.

Consultation with relevant stakeholders and government authorities has continued through the development of this OEMP. Those consulted include:

- Environment Protection Authority (EPA).
- Office of Environment and Heritage (OEH).
- NSW Office of Water (NOW).
- NSW Health.
- ACTEW.
- QCC.
- Palerang Council.

As part of the preparation of this OEMP, the stakeholders listed above were issued a draft copy of the plan for review. Comments issued by the stakeholders have been addressed and the OEMP has been updated.

Consultation will continue throughout operation of Stage A – Network with relevant stakeholders and government authorities, as identified in the GTPL Community Engagement and Stakeholder Management Plan.

1.6 Certification and approval

This OEMP must be submitted for approval to the Director-General of D&PI. Submission to DP&I is required no later than one month prior to commencement of operation or as otherwise agreed, and the OEMP must be approved by the Director-General of DP&I prior to the commencement of operation.

1.7 Environmental Management System structure

Operation Environmental Management Plan (CoA D7)

This OEMP provides the system to manage and control the environmental aspects of Stage A – Network. It provides the overall framework to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

Water Management Plan (CoA D8)

Consideration of water issues is key to the operation of the Googong Township IWC Project. A Water Management Plan (WMP) has been prepared for Stage 1 to identify and manage specific impacts and aspects related to water. Parts of the WMP are applicable Stage A – Network, and the WMP should be read in conjunction with this OEMP and any future OEMPs.

The WMP includes the following components:

- Surface Water and Aquatic Ecology Monitoring Program.
- Groundwater Monitoring Program.
- Recycled Water Flow Release Protocol.
- Surface and Groundwater Response Plan.
- Irrigation Management Plan.

Pink-tailed Worm-lizard Protection and Management Plan (CoA D9)

A Pink-tailed Worm-lizard Protection and Management Plan was prepared by ecological consultants, Biosis. The Plan details a Pink-tailed Worm-lizard (PTWL) Conservation Area that would be established by GTPL (refer to Appendix A) and that has been designed in a manner that would result in a qualitative and quantitative long-term net-benefit to PTWL habitat within the locality. The Plan also outlines a range of management and monitoring requirements that extend into the operation phase.

Other project documents

GTPL is responsible for the implementation of other project documents as required by the CoA or SoC. These include:

- Compliance Tracking Program (CoA A18).
- Community Engagement and Stakeholder Management Plan (SoC CS1/CoA A14/CoA A15).
- Community Education Strategy (SoC CS3).
- Landscape Management Plan (CoA B16).

Where relevant, operation of Stage A – Network will comply with these project documents.

An Operation Management Plan (GTPL, 2012) has been prepared for interim sewage operations and explains issues for the storage and offsite removal of sewage from SPS1.

Figure 2 shows the structure of the environmental management system for Stage A – Network and its relationship to other project documents.

Environmental constraints maps

Constraints maps may be prepared to detail environmentally sensitive areas such as flora features, local waterways, recorded threatened fauna habitat, heritage sites and sensitive receivers.

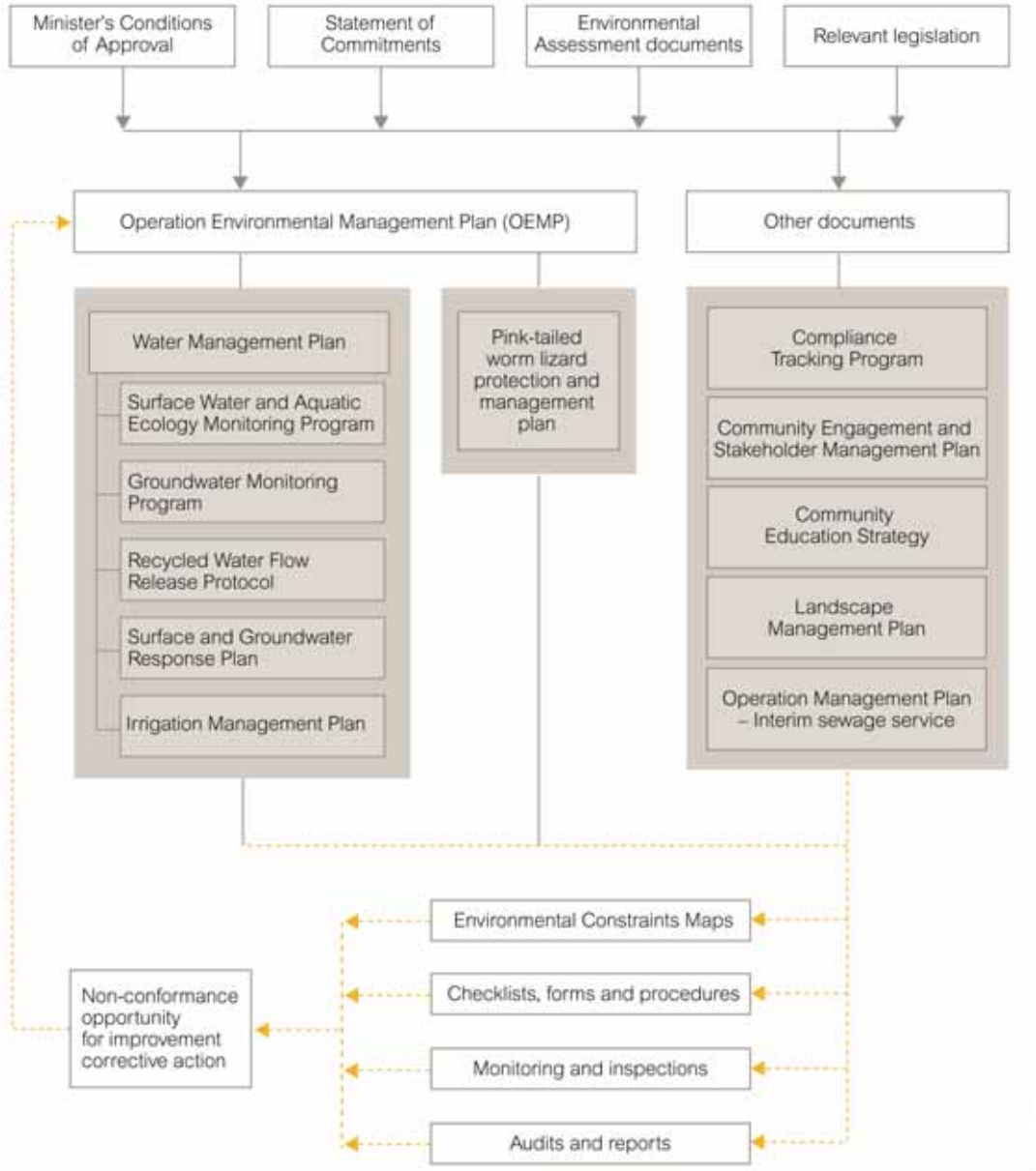
Environmental control plans may also be prepared for discreet sites and include information such as environmentally sensitive areas (no-go areas), erosion and sediment control measures, sensitive receivers, designated work areas and access tracks.

An Environmental Constraints Map has been prepared for Stage A – Network and depicts watercourses, existing and future sensitive receivers, Aboriginal heritage sites, threatened species and Endangered Ecological Community (EEC) area. The Environmental Constraints Map is included at Appendix A.

Environmental procedures, forms and checklists

Environmental procedures are tools used to document an environmental process. Project-specific procedures will be developed by the relevant contractors for Stage A – Network, such as the preparation of a Standard Operating Procedure (SOP) for the tankering of sewage offsite to an existing disposal location (refer Appendix E).

Figure 2 Environmental Management System structure



1.8 Distribution

This OEMP will be made available to all operators, personnel and sub-contractors. An electronic copy will be uploaded to the Googong IWC Project website [www.compliance.googong.net].

The document is uncontrolled when printed. One controlled hard copy of the OEMP and supporting documentation will be stored at GTPL's office, QCC relevant office or depot and ACTEW's relevant office or depot.

Registered copies will be distributed to:

- GTPL.
- ACTEW Corporation.
- QCC.
- Palerang Council.
- Operating contractors (eg SPS Operator and Sewage Tankering Contractor).
- Department of Planning and Infrastructure (DP&I).
- NSW EPA.
- OEH – Biodiversity and Aboriginal heritage.
- NSW Office of Water.
- NSW Health.

1.9 Revision

A document review process will ensure that this OEMP is updated as appropriate for the specific works that are occurring during Stage A – Network and other subsequent stages of the project.

Review of OEMP (project milestones)

This OEMP will be reviewed and updated at the following project milestones:

- Prior to operation of Stage A – Network (this revision).
- Prior to operation of Stage A – Network and WRP (that is prior to operation of WRP).
- Prior to operation of Stage A + B – Network and WRP.

The responsibility for OEMP review and its implementation will be transferred to QCC at a point in time when project infrastructure is handed to QCC as the lead operator.

At each milestone the updated OEMP will be submitted to DP&I for approval, in consultation with relevant authorities.

Review of OEMP (during operation of Stage A – Network)

GTPL will coordinate the review and distribution, as appropriate, of the OEMP for Stage A – Network along with the WMP and the Pink-tailed Worm-lizard Protection and Management Plan until IWC assets are handed over to QCC for operation.

Revision of the Stage A – Network OEMP may be triggered by findings of the monitoring and audit reports and non-conformance register prescribed for Stage A – Network in this OEMP (refer Section 8.6). The review may result in changes to operations, to mitigation measures or monitoring/reporting requirements or other updates to the OEMP.

For the revision of the Stage A – Network OEMP, GTPL will ensure that documentation is:

- Developed in consultation with relevant stakeholders identified in Section 1.5, reviewed and approved prior to issue.
- Issued for use.
- Controlled and stored for the legally required timeframe.
- Removed from use and archived when superseded or obsolete.

GTPL will endorse minor changes to the Stage A – Network OEMP. Minor changes would typically include those that:

- Are editorial.
- Do not increase the extent of environmental impacts when considered individually or cumulatively.
- Do not restrict the project's ability to meet all CoA and environmental obligations.

Where GTPL determines that a change is not minor, the revised OEMP will be sent to DP&I for approval.

A register will identify the current revision of particular documents. Revised documents will be distributed to controlled copyholders, as identified in Section 1.8.

2 Project description

2.1 Description of the Stage A – Network

Stage A – Network will function until the WRP is operational. The WRP cannot be commissioned and subsequently operated until there is a sufficient sewage load, which will not occur until an EP of 600 in the township is reached. Until this time, the main activities will occur as part of Stage A – Network operations are:

- Potable water is tankered in to the interim reservoirs until the BWPS is operational (Phase 1) or bulk water is taken from existing Googong water treatment plant and transferred to the Bulk Water Pumping Station (BWPS) (Phase 2).
- Water is stored and treated at the interim potable reservoir and then distributed to houses and facilities in the township (however reticulation of potable water throughout the township does not form part of the Googong Township IWC Project).
- Wastewater and sewage is collected at SPS1 (reticulation of sewage throughout the township to SPS1 does not form part of the Googong Township IWC Project).
- Sewage is transported offsite via tankers to a nearby existing sewage treatment plant.

Facilities or activities that fall under consideration of the Part 3A project approval are discussed in more detail below.

Note that the operation phase of Stage A – Network does not include construction, commissioning or testing of the Stage A – Network or the WRP – such activities are covered by the relevant Construction Environmental Management Plans (CEMP) and the implementation of the CEMPs is the responsibility of GTPL.

Tankering of potable water (Phase 1)

As the BWPS (part of Stage A – Network East) will not be completed in time for the first demand of potable water, Phase 1 will be in place to provide an interim water supply. This will involve tankering in potable water from an external source (by the Potable Water Tankering Contractor) to the interim reservoirs. QCC will be responsible for this activity and the distribution of potable water to the township after handover of the interim reservoirs from GTPL after commissioning and testing. Access to the interim reservoirs by the water tankers will be via Old Cooma Road or Googong Dam Road and the new access road to the reservoir site.

It is estimated that Phase 1 may last for up to three months, however this estimate is dependent on the progress of the construction and commissioning of the BWPS.

Bulk Water Pumping Station (Phase 2)

Once construction and commissioning of Stage A – Network (East) including the BWPS is complete, the BWPS will provide bulk water to the interim reservoirs in lieu of tankering in potable water. The BWPS is located north of the existing ACTEW Googong water treatment plant and comprises pumps, piping, valves, controls, telemetry and lighting (refer Figure 1).

Interim potable and recycled water reservoirs

Potable water (supplied by the water carter in Phase 1) or bulk water (supplied by ACTEW in Phase 2) will be stored and treated at the interim reservoirs located near Old Cooma Road (refer Figure 1). As the WRP will not be operational during Stage A – Network, potable water will also be delivered into the recycled water reservoir that will provide water back to the township.

The interim potable reservoir comprises a 5 m high, 1.2 ML circular reservoir and associated pipes, valves, controls, telemetry and lighting. The interim recycled water reservoir comprises a 5 m high, 2.3 ML circular reservoir and associated pipes, valves, controls, telemetry and lighting.

A chemical dosing unit (CDU) will provide additional chlorine treatment before water is gravity fed to the township. As the WRP will not be operational during Stage A – Network there will not be any recycled water stored at the recycled interim reservoir. However a separate CDU will provide de-chlorination of any excess potable water that may overflow from the interim recycled water reservoir to the environment via a discharge structure into Googong Creek.

SPS1 and transfer of sewage

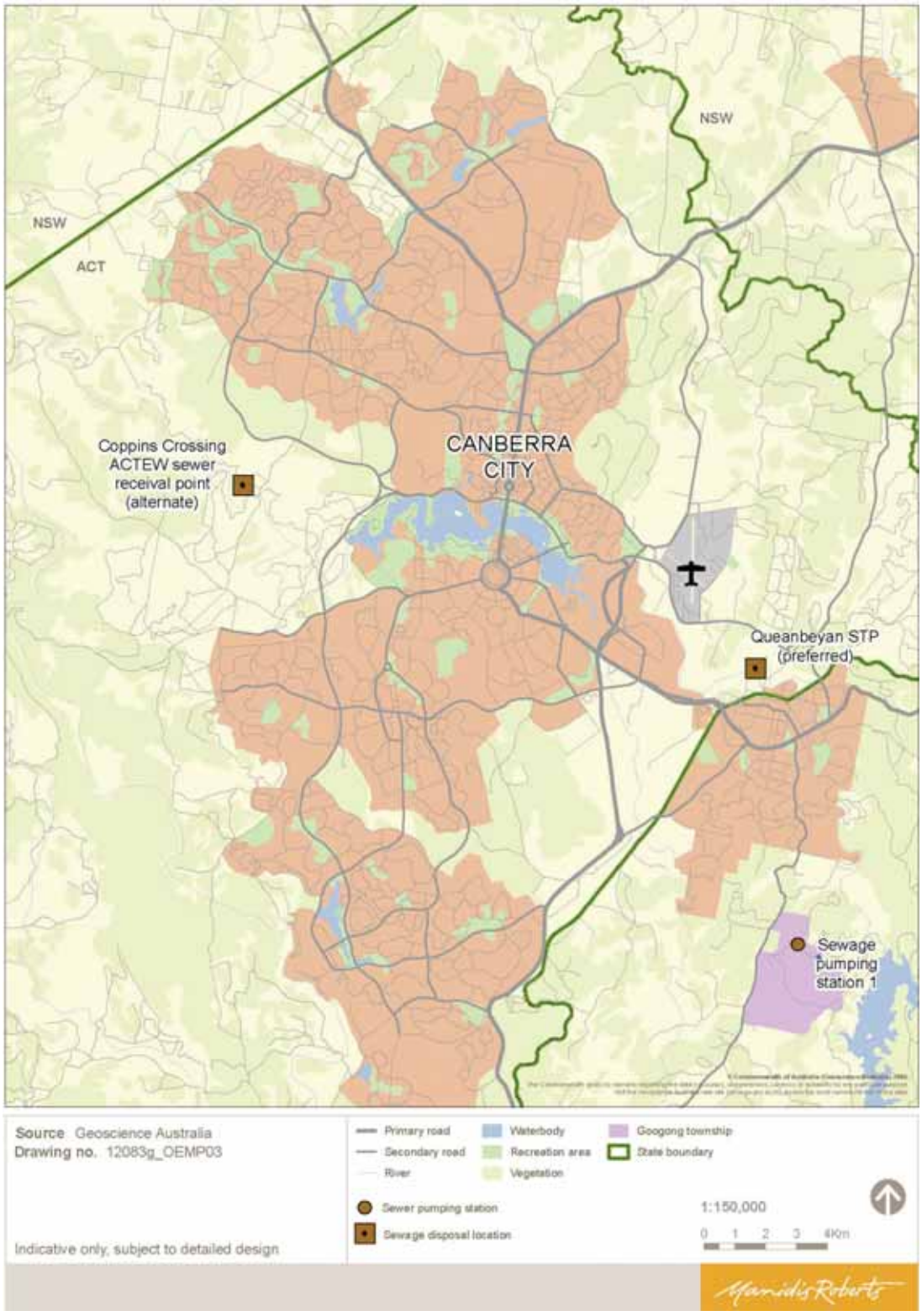
Sewage from the township will flow to SPS1 for storage in the wet well and associated emergency storage vessels. The SPS1 system also contains an aeration unit to help prevent odour. The sewage collected at SPS1 will then be pumped into tankers at the temporary tanker truck parking bay. The parking bay is situated immediately north of SPS1, adjacent to Googong Road (refer Figure 3). Once the sewage has been transferred the waste will be transported offsite to a licensed sewage treatment plant (STP) (refer Figure 4). Disposal options include:

- Queanbeyan STP (preferred).
- Coppins Crossing disposal point (alternative).

The alternative Coppins Crossing disposal point is part of ACTEW's network and will be used if disposal at Queanbeyan STP is not possible.

Figure 3 Operational arrangements at SPS1

Figure 4 Offsite treatment locations for sewage



3 Planning

3.1 Legal and other requirements

A register of legal and other requirements for Stage A – Network is contained in Appendix B. This register will be reviewed at regular intervals and updated to reflect any legislative or approval changes as required. Any changes made to the legal requirements register will be communicated to the wider project team.

Approval under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)

Stage 1 of the Googong Township IWC Project was approved by the Planning Assessment Commission of NSW under (the now repealed) Part 3A of the EP&A Act, on 24 November 2011. The ultimate development of water cycle infrastructure for the Googong Township IWC Project (including Stage 1) was also approved on 24 November 2011 under a Concept Approval.

This OEMP will comply with the conditions of both the Concept Approval and Stage 1 Project Approval, where relevant to Stage A – Network.

Part 3A of the EP&A Act was repealed on 1 October 2011. Under the transitional arrangement, the project will continue to be legislated by the provisions of Part 3A, as in force immediately before its repeal.

Approval under Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EBPC Act)

The Googong Township IWC Project was referred to the DSEWPaC under the EPBC Act due to potential impacts on matters of national environmental significance, including migratory species, threatened species and communities. The Googong Township IWC Project was declared a controlled action under the EPBC Act, and subsequently approved on 19 May 2011, subject to conditions.

This OEMP and environmental management documents will comply with the conditions of the EPBC Act approval, where relevant.

NSW *Protection of the Environment Operations Act 1997* (POEO Act)

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of environment protection legislation administered by OEH. It sets out classification of environmental offences as Tier 1, 2 or 3 and which includes the prohibiting of water pollution (under Section 120 of the POEO Act). There also requirements to notify government agencies in the event of a pollution incident. Appendix B outlines specific requirements for Stage A – Network relating to the POEO Act.

Other legal requirements

Refer to Appendix B for a register of all legal and other requirements relevant to Stage A – Network.

3.2 Approvals, permits and licensing

A number of approvals, permits and licenses will be obtained for the operation of Stage A – Network. Appendix B contains a register of all relevant legal and other requirements, identifying the need for any environmental approvals, permits and licenses. The register for Stage A – Network will be maintained by GTPL and reviewed annually.

In particular, the potable water tankering contractor will need to obtain approval under Section 68 of the *Local Government Act 1993* from QCC to draw water from a council supply and transfer it to the interim reservoirs.

In addition, a number of permits are required for the removal of sewage waste offsite to a licensed STP. They include a trade Waste Agreement (with QCC and ACTEW) and an Environment Protection Licence (EPL) for the transport of trackable wastes through NSW into another state/territory (issued by EPA NSW).

In regards to Waste Transport Certificates for the transport of waste across Australian state/territories, correspondence from the ACT Government received on 11/06/2013 granted a geographical exemption for the movement of a controlled waste (NEPM waste code K130) from the Googong Township to the QCC STP located in the ACT. However, a valid consignment authorisation number must still be obtained prior to the movement of any material.

In accordance with CoA A7, all necessary licences, permits and approvals required for the project will be obtained and maintained as required throughout the life of the project. During operations of Stage A – Network, a copy of the Project Approval and all other relevant approvals will be kept at GTPL's office, and at the relevant ACTEW and QCC office/depot.

No condition of the Project Approval removes the obligation to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 75U of the EP&A Act.

3.3 Environmental policies

ACTEW and GTPL have developed environmental policies as part of their operations. QCC has adopted a sustainability policy. Copies of all these policies are included at Appendix C. Each operator will endeavour to be consistent with the relevant policy, where it applies to operations.

Relevant environmental policies will be available on the project website, GTPL's office, and at the relevant ACTEW and QCC office/depot.

3.4 Objectives and targets

Environmental objectives and targets have been established as a way to monitor and evaluate environmental performance during operation of Stage A – Network. These objectives and targets have been developed with consideration of the key issues identified through the environmental assessment process.

The performance of Stage A – Network against the objectives and targets will be documented annually (refer Section 8.5) and should be reviewed for future stages of the Googong Township IWC Project. Environmental objectives and targets for Stage A – Network are provided in Table 3.

Table 3 Environmental objectives and targets

Objective	Target	Management tool
Comply with all statutory and legal requirements.	Full compliance with statutory approvals. No regulatory infringements (prosecutions, penalty infringement notices). No formal regulatory warnings.	Audits, compliance report.
Engage with the affected and broader community and minimise and manage complaints.	Communicate effectively with the community through the tools identified in the Community Information Plan. Record and response to complaints within the timeframe specified in the Community Information Plan.	Review complaints register, audits, operation compliance report.
Continually improve environmental performance.	Incidents and non-conformances requiring investigation or action are appropriately investigated, and corrective actions assigned. Corrective actions are completed within designated timeframes. A program of ongoing environmental training is developed and maintained. Lessons learnt from environmental incidents are implemented to minimise repeat issues.	Audits, incident investigation, operation compliance report.

4 Implementation and operation

4.1 Operation

Different organisations will be responsible for operating different water cycle infrastructure. Figure 5 and Figure 6 show the organisational responsibility for Phase 1 and Phase 2 of Stage A – Network. For comparison, Figure 7 shows the organisational responsibility for future operation of Stage A – Network and WRP, once the WRP is operational.

The figures also highlight which activities are temporary and which activities form part of Stage 1 of the Googong Township IWC Project approved under Part 3A of the EP&A Act.

Figure 5 Stage A – Network operation Phase 1

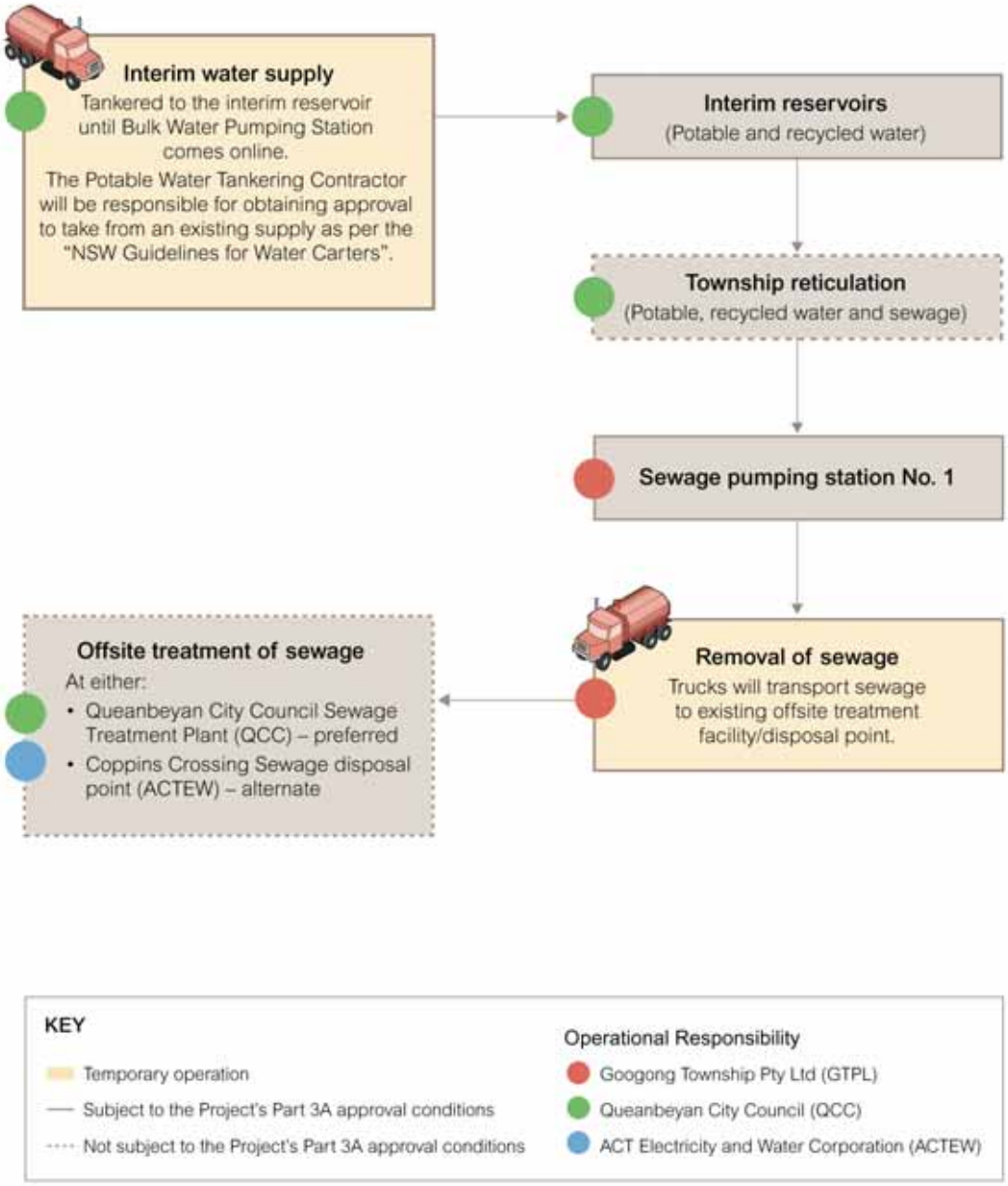


Figure 6 Stage A – Network operation Phase 2

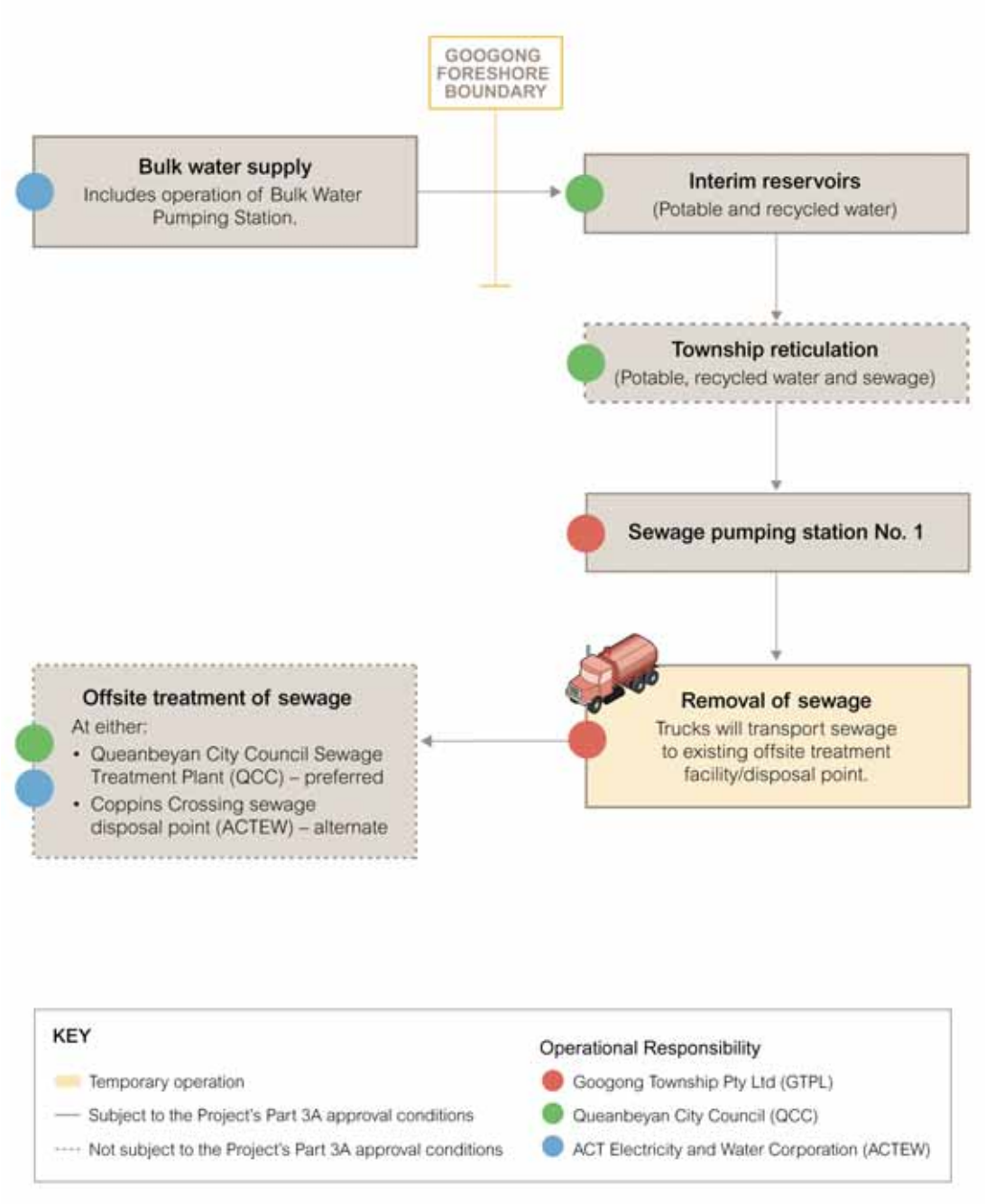
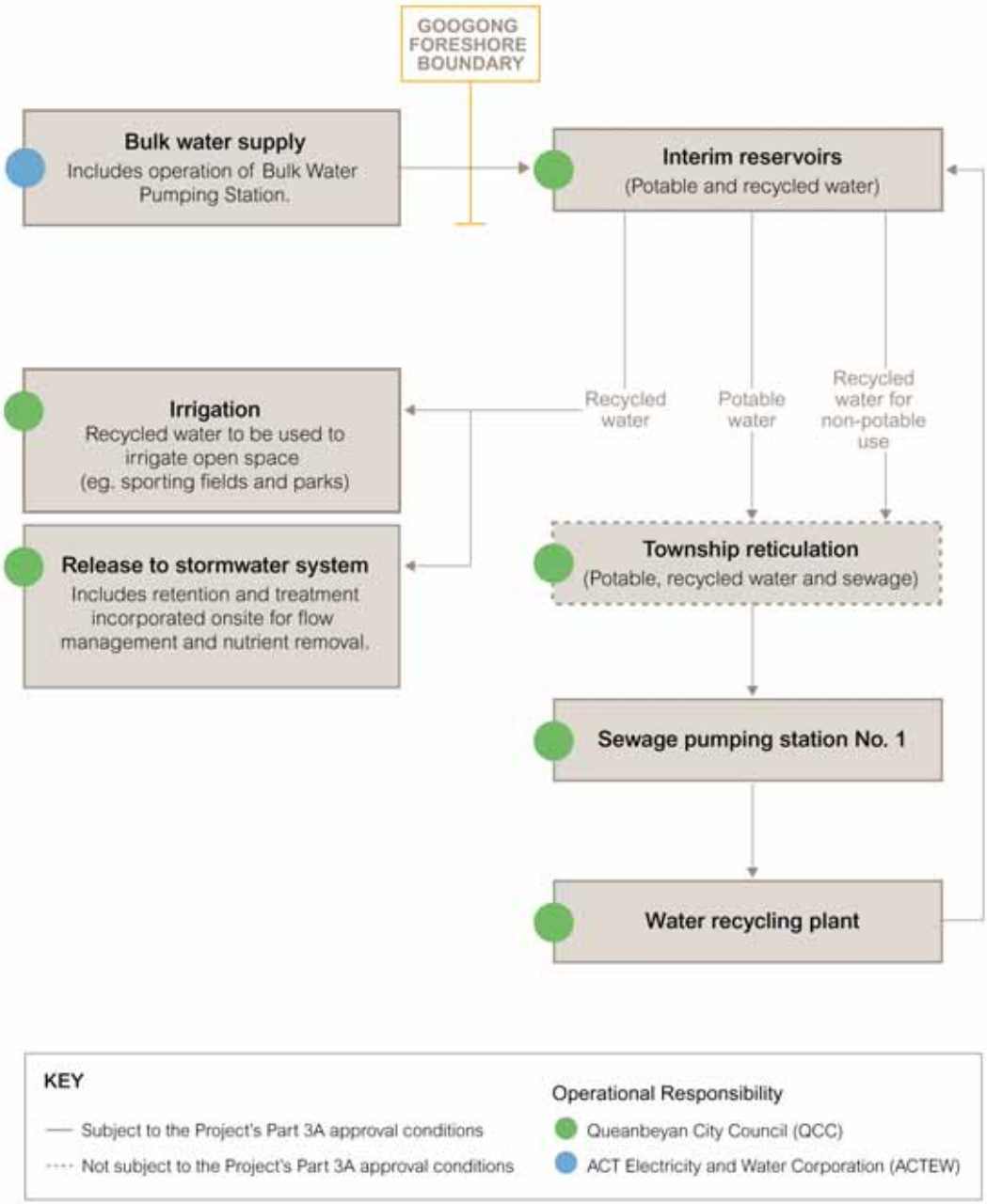


Figure 7 Stage A – Network and WRP operation



4.2 Roles and responsibilities

Within each organisation there will be a key contact person responsible for implementing relevant actions under the OEMP for Stage A – Network. Organisational charts for Phase 1 and Phase 2 of Stage A – Network operations are provided at the end of this section (refer Figure 8 and Figure 9).

GTPL

Assistant Project Director

The environmental responsibilities of the GTPL Assistant Project Director include, but are not limited to:

- Review the OEMP and any environmental management plans and related documents prepared for Stage A – Network.
- Oversee the implementation of the OEMP including and related management plans or monitoring programs.
- Monitor the environmental performance and compliance of Stage A – Network.
- Liaise with government stakeholders and provide information where environmental incidents have occurred.
- Co-ordinate communication between the other operators (QCC, ACTEW, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor).

IWC Development Manager

- Ensure all Stage A – Network operations comply with relevant regulatory and project requirements outlined in this OEMP.
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this OEMP.
- Ensure that all GTPL personnel and sub contractors receive appropriate induction training, including details of the environmental obligations for operation of activities under GTPL's control.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the GTPL Assistant Project Director.

Environment Advisor

The environmental responsibilities of the Environment Advisor include, but are not limited to:

- Development and updating of the OEMP and management plans.
- Advise GTPL on its compliance obligations in relation to all approvals, permits and licences.
- Provide support and advice for inspections, auditing and monitoring as required.
- Advise GTPL of its achievement of all environmental outcomes.

SPS Operator (Contractor – TBA)

The SPS Operator will be responsible for the operation of the SPS during operation of Stage A – Network. Operation of the SPS includes the following:

- Arrange and co-ordinate removal of sewage with Sewage Tankering Contractor. This will involve arranging for frequent inspections of the site and after a heavy rainfall event to check on sewage levels in SPS1. The results of the inspection will be relayed to the Sewage Tankering Contractor.
- Routine maintenance of diffusers, pumps, aeration unit, and suction line.
- Manage call-out maintenance of equipment (eg pumps).
- Respond to all emergency maintenance on a 24-hour callout basis and provide emergency contact details.
- Record collected volumes, dissolved oxygen and pH readings from SPS1 and maintain database of recordings.

The environmental responsibilities of the SPS Operator include, but are not limited to:

- Liaise with GTPL Assistant Project Director/GTPL IWC Development Manager/Sewage Tankering Contractor as required.
- Plan all operation works in a manner that avoids or minimises impact to environment.
- Ensure the relevant requirements of this OEMP are implemented, including the mitigation measures and monitoring/reporting requirements.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.

Sewage Tankering Contractor (Contractor – TBA)

The Sewage Tankering Contractor will be responsible for the collection and removal of sewage to an offsite facility during operation of Stage A – Network.

The tankering operation includes the following:

- Provide effluent waste pump out service on request by GTPL, in liaison with the SPS Operator.
- Dispose of all pump out effluent from Googong Township at Queanbeyan STP or Coppins Crossing disposal point.
- Record dissolved oxygen and pH readings and maintain database of recordings.
- Record the actual volumes of effluent waste removed from SPS1 and disposal volumes at STP.

The environmental responsibilities of the Sewage Tankering Contractor include, but are not limited to:

- Liaise with GTPL Assistant Project Director/GTPL IWC Development Manager as required.
- Develop and implement a Standard Operating Procedure (SOP) to ensure that all operation works are undertaken in a manner that avoids or minimises impact to environment.

- Obtain and update all environmental licences, approvals and permits as required for the handling and transportation of waste.
- Ensure the relevant requirements of this OEMP are implemented, including the mitigation measures and monitoring/reporting requirements.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.

Potable Water Tankering Contractor (Contractor – TBA)

The Potable Water Tankering Contractor will be responsible for the delivery of potable water to the interim reservoirs during Phase 1 of Stage A – Network.

The environmental responsibilities of the Potable Water Tankering Contractor include, but are not limited to:

- Liaise with QCC Manager – Water and Sewer and the GTPL Assistant Project Director/GTPL IWC Development Manager as required.
- Plan all operation works in a manner that avoids or minimises impact to environment and that is in accordance with the NSW Guidelines for Water Carters (NSW Health, 2012).
- Obtain and update all environmental licences, approvals and permits as required for the drawing and carting of potable water Including Section 68 approval under the *Local Government Act 1993*).
- Ensure the relevant requirements of this OEMP are implemented, including the mitigation measures and monitoring/reporting requirements.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the QCC Manager – Water and Sewer and GTPL Assistant Project Director/GTPL IWC Development Manager.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the QCC Manager – Water and Sewer and GTPL Assistant Project Director/GTPL IWC Development Manager.
- Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.

ACTEW

BWPS Operations Manager [TBC]

ACTEW will not be directly involved during Phase 1 of Stage A – Network while potable water is tankered to the interim reservoirs. During Phase 2 of Stage A – Network, ACTEW will be responsible for the operation of the BWPS and supply of bulk water to the network via the bulk water supply pipeline.

The BWPS and associated bulk water rising main operation includes the following:

- Operation and maintenance of the BWPS and associated bulk water rising main.
- Supply of bulk water from the BWPS to the Googong Foreshores boundary.

The environmental responsibilities of the BWPS Operations Manager include, but are not limited to:

- Liaise with the GTPL Assistant Project Director/GTPL IWC Development Manager and QCC Manager – Water and Sewer as required.
- Provide input into the preparation of environmental documents as required.
- Ensure that operation of infrastructure is carried out in accordance with the requirements of the OEMP including implementing the mitigation measures and undertaking monitoring/reporting requirements, as required.
- Identify resources required for implementation of the OEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental obligations.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.

QCC

QCC Manager – Sewer and Water

QCC will be responsible for the supply of potable water to the interim reservoirs during Phase 1 after handover from GTPL (ie after commissioning and testing), and operation of the interim reservoirs to provide potable water to the township during operation of Stage A – Network.

The interim reservoirs operation includes the following:

- Operation and maintenance of the interim potable water and recycled reservoirs operation including telemetry of reservoir levels and chemical levels.
- Supply of potable water for Stage A – Network from the Googong Foreshores boundary, to the interim reservoirs and into the township reticulation.

In addition, SPS1 will have telemetry installed. The telemetry will provide an alarm to QCC if it is reaching capacity and overflow storage is engaged (the alarm system has been arranged as such, given QCC will eventually take over operation of this asset). Typically, GTPL will co-ordinate with the Sewage Tankering Contractor based on visual inspections. However if the alarms are alerted and the volumes in SPS1 are getting too high, QCC will notify GTPL to arrange for sewage removal.

- QCC will be responsible for notifying GTPL when the alarm is triggered at SPS1.

The environmental responsibilities of the QCC Manager – Sewer and Water include, but are not limited to:

- Liaise with the GTPL Assistant Project Director/GTPL IWC Development Manager and BWPS Operations Manager as required.
- Provide input into the preparation of environmental documents as required.
- Ensure that operation of infrastructure is carried out in accordance with the requirements of the OEMP including implementing the mitigation measures and undertaking monitoring/reporting requirements, as required.

- Monitor and manage the water quality within the reticulation network in accordance with its Water Quality Assurance Management Program required under the *Public Health Act 2010* and Public Health Regulation 2012.
- Identify resources required for implementation of the OEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental obligations.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Stop activities where there is an actual or immediate risk of harm to the environment or risk to public health and advise the GTPL Assistant Project Director/GTPL IWC Development Manager.
- Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.

Figure 8 Organisational chart (Phase 1 of Stage A – Network)

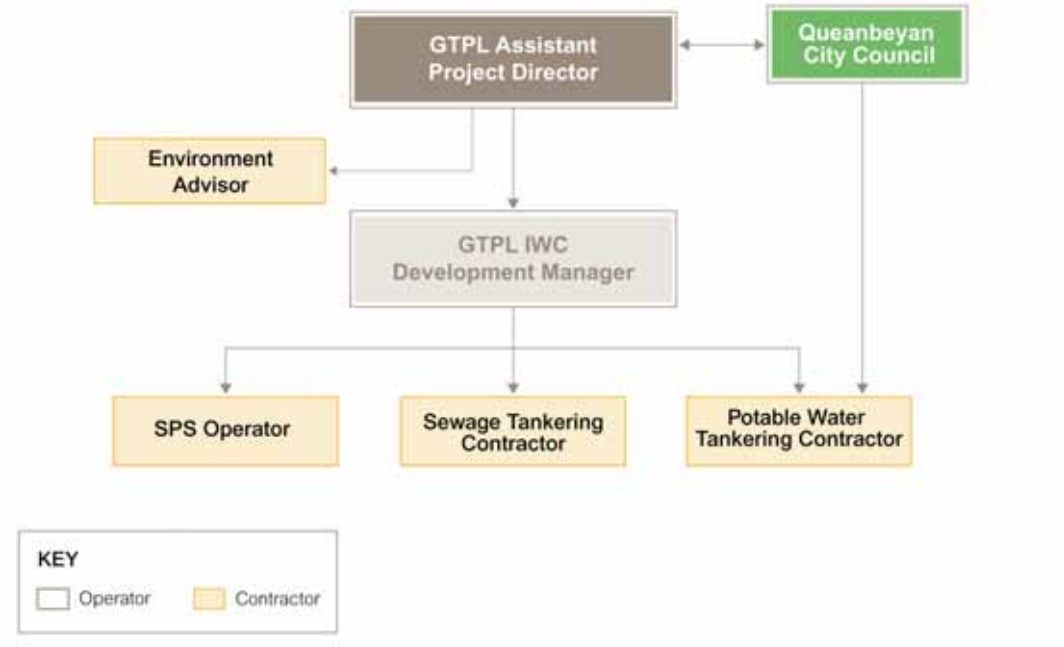
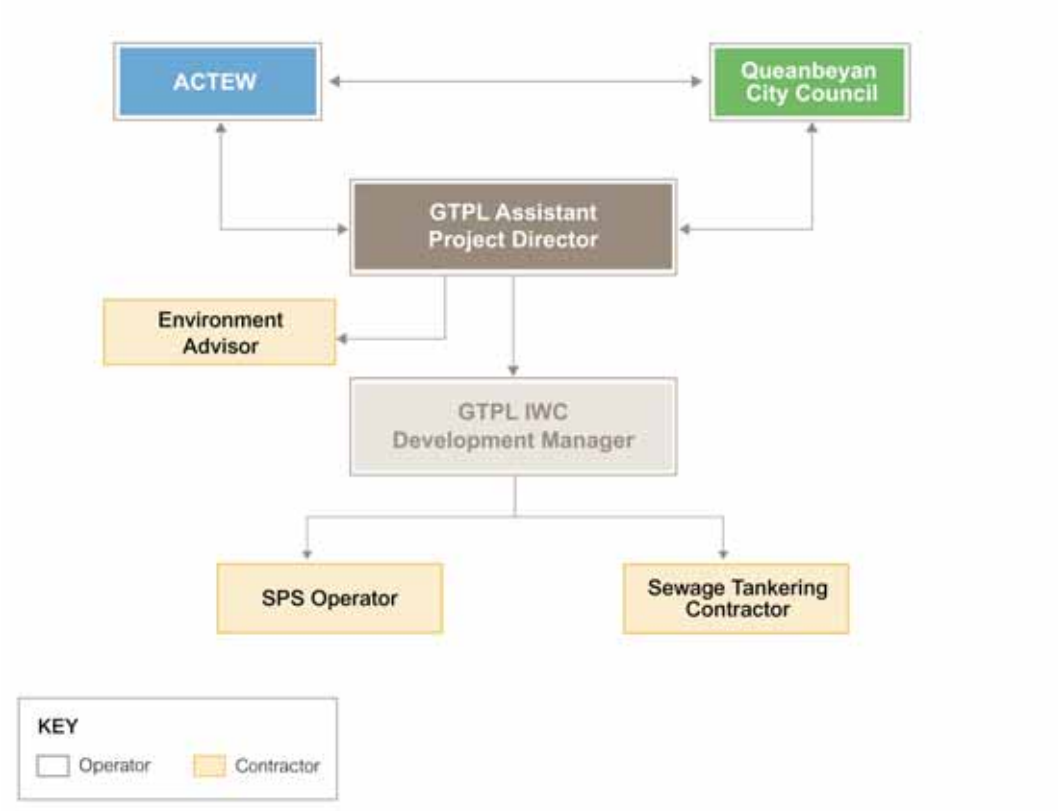


Figure 9 Organisational chart (Phase 2 of Stage A – Network)



4.3 Environmental aspects and impacts

This section summarise the key environmental risks associated with Stage A – Network. In order to assess the potential environmental impacts of an activity, the project has adopted a risk management approach. This process considers potential regulatory risks and the overarching commitment to protect the environment.

During the development of this OEMP for Stage A – Network, an environmental risk workshop was held to identify environmental risks. The outcome of this risk workshop provides the basis of the risk register (Appendix C). The risk register includes a list of activities associated with Stage A – Network, related aspects and corresponding risks.

The risk register will be reviewed by GTPL during operation of Stage A – Network as required, for example to assess the risk of new activities, or where an environmental incident has occurred. The environmental risk assessment will also be reviewed regularly to ensure the risk registers remains current. During operation, the environmental risk assessment will be updated:

- If a significant incident or impact occurs.
- If activities changes.

Outcomes from ongoing risk assessments will be incorporated into the OEMP as required.

In response to the risk assessment and to satisfy the CoA and SoC's for Stage A – Network a table of mitigation measures has been created (refer Section 4.4). Responsibility for the implementation of mitigation measures has also been considered.

Water

Water is a key issue for the Googong Township IWC Project, as recycled water will be used for various re-uses in the township, irrigation and any excess will be released to the stormwater ponds, which will eventually discharge into Queanbeyan River. Such releases of excess recycled water may cause changes to water quality, aquatic ecology, groundwater and stream banks and also affect the water supply of downstream users. A Water Management Plan (WMP) has been developed to address these issues throughout the operation of the IWC Project. The WMP seeks to establish a program for monitoring, and the results will inform a range of adaptive management actions to mitigate against potential impacts.

However, during operations of Stage A – Network the WRP will not be operational, and sewage will not be treated but transported offsite. As such, the strategies and mitigation measures detailed in the WMP are not yet applicable. Baseline monitoring will be undertaken, prior to operation of the WRP to better understand and track changes to downstream creeks and groundwater once the WRP comes online.

SPS1 is located adjacent to a water course and so there is a risk of spills from the sewage pump out or from other chemicals which could potentially affect water quality.

Waste

Pump out sewage will be the primary waste stream for Stage A – Network. Sewage will be collected at SPS1 and transferred offsite by the Sewage Tankering Contractor. Handling of such waste could result in contamination of soil or water or from leaks during storage and transportation, if not appropriately managed. There are also considerations for waste volumes and quality so that sewage can be accepted by the receiving treatment plant. All trade waste approvals and permits required for Stage A – Network are listed in Section 3.2, and will be obtained by the relevant body.

Other waste streams for Stage A – Network are likely to include general litter, special waste (waste tyres from maintenance vehicles) and general solid waste – non-putrescible (oil filter, oil rags etc). Such waste will be managed and appropriately disposed of as per the mitigation measures listed in Table 5.

Traffic

Up to nine tankers a day will be required to remove sewage offsite. Tankers will enter the site from Old Cooma Road and Googong Dam Road and travel for about 800 m past the tankering parking bay to the Googong Foreshores boundary to turn around and travel back along Googong Dam Road to enter the parking bay, where they will remove the sewage. After leaving the site they will transport the waste to a licensed STP (refer Figure 5).

A Traffic Management Plan has been prepared by the Sewage Tankering Contractor, and considers routes, timing and ingress/egress to SPS1, and potential interactions with other construction vehicles (refer Appendix E).

Potable water will be tankered to the interim reservoirs until the BWPS is operational. The potable water tankers will enter and exit the interim reservoirs site from Old Cooma Road via a new access road or Googong Dam Road. There will be about 46 tanker movements required to fill the interim reservoirs and associated potable and recycled water systems in the township. It is expected that the reservoirs will

need to be filled up to a maximum of five times a day before the bulk water supply is available. Traffic impacts from tanker movements are expected to be minor, when compared to the expected traffic movements in the area during that stage of the Googong Township IWC Project.

Some co-ordination between construction and operational vehicles may be required, if roads need to be temporarily blocked for construction works. However any delays should not affect the operation of Stage A – Network, as there is capacity in the sewerage system for eight days during which time any delays in accessing the site could be resolved.

Other operation and maintenance vehicles will use existing roads and park in the designated areas. There will be no more than five vehicle movements per week associated with operational activities such as inspections and maintenance. In addition, there will be around 2-3 truck movements a month for chemical delivery. Such vehicle movements will have a negligible traffic impact.

Noise

BWPS

The BWPS will emit noise not exceeding 80 dBA at a distance of 1 m. The BWPS will be contained in a building that will provide noise attenuation. The nearest sensitive receiver is located nearly 1 km away (refer Figure 10). as such, noise is unlikely to be an issue.

However CoA D1 states that noise emitted from the operation of project-related infrastructure shall not exceed 35 dB(A) ($L_{Aeq(15min)}$) at any residence on privately owned land. Noise levels from the BWPS will be confirmed through one-off noise monitoring at the nearest residential receiver once the BWPS is operational.

Interim reservoirs

The dosing pumps at the interim reservoirs would be considerably less noisy than the BWPS, and also contained in a kiosk that will provide noise attenuation. The nearest sensitive receiver is located about 300 m away. As such, noise is unlikely to be an issue.

SPS1

None of the permanent mechanical (eg pumps) or electrical equipment will be used during interim operations. However, a temporary submersible pump and aeration system will be used in the interim operations but it is not expected that noise from the pump or aeration system will be an issue for nearby receivers.

The removal of sewage offsite may require up to nine tanker movements a day. Tanker noise sourced from the engines may be audible to new residents and one existing receiver located north of Googong Dam Road. Traffic noise may also be sourced from the potable water supply tankers.

For the first six months there will be about a 325 m buffer from the nearest occupied house in the NH1A to the SPS (refer Figure 10). For the next six months there will be a 150 m buffer, and after one year the buffer distance to the nearest occupied residence will be 25 m. The closest existing sensitive receiver is located about 100 m north of SPS1.

To minimise noise impacts and avoid sleep disturbance, waste tanker operations will be restricted to between the hours of 7 am and 6 pm. There may still be some residual noise impacts but such impacts will be temporary as the tanker will not operate continuously and will not be required for the later stages of the IWC Project.

Odour

It is proposed that the sewage waste is removed daily. However in the event of an emergency and the SPS cannot be emptied, there is capacity for several days storage but this may lead to odour and septicity issues. Sewage pumping stations receiving flows from local gravity catchments do not normally require mechanical odour control but to address any potential odour issues associated with prolonged storage, an aeration unit will be operated, which is considered sufficient to reduce any odour impacts for sensitive receivers.

For the first six months there will be about a 325 m buffer from the nearest occupied house in the NH1A to the SPS (refer Figure 10). For the next six months there will be a 150 m buffer, and after one year the buffer distance to the nearest occupied residence will be 25 m. The closest existing sensitive receiver is located about 100 m north of SPS1.

The *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DEC, 2005 – The Methods), *Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2006a) and *Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2006b) provide information on assessing odour and use a sliding scale of odour impact criteria based on the density of the population potentially affected. The impact assessment criterion of two odour units (2 ou) was used in the odour assessment of the Stage 1 and ultimate configurations for the WRP, which is an acceptable odour level for receivers in a residential area (~2000 people/km^2). Odour monitoring will be conducted during operation of Stage A – Network to ascertain odour impacts and compare with guideline odour levels.

Odour will not be an issue at the BWPS or interim reservoirs.

Biodiversity

An Endangered Ecological Community (EEC) is located immediately north of the existing ACTEW Googong water treatment plant site, adjacent to the new potable water pipeline. The Blakely's Red Gum/Red Box/Bundy Grassy Woodland is a protected EEC under the EPBC Act and must not be impacted during operation of Stage A – Network. This EEC has been marked on the Environmental Constraints map for Stage A – Network which is included at Appendix A and will be taken into consideration during development of operating procedures.

A number of noxious and environmental weeds were identified throughout the project area. The operation of Stage A – Network is unlikely to increase the risk of spreading weeds as the majority of maintenance and operational vehicles will be using designated access roads. However for vehicles travelling off sealed access road, weed incursion is small risk, particularly adjacent to the BWPS. Weed maintenance during operation of Stage A – Network is listed as a mitigation measure in Table 5.

Cultural heritage

Known Aboriginal heritage sites GA7, GA27, GWTP1, GWTP3, GWTP4, GWTP5 and GWTP6 are identified in the Environmental Constraints Map included at Appendix A. These sites will be taken into consideration during the development of specific operating procedures and managed appropriately during operation.

Where these sites fall within close proximity to operation/maintenance works, exclusion fencing will be installed to protect the sites from inadvertent impacts.

Hazards, risks and emergency

The *Operation Management Plan – Interim Sewage Service* (GTPL, 2012) considers a number of operational risks associated with the collection of sewage and the offsite removal for interim operations (eg power failures, or other scenarios where the sewage may not be able to be removed as scheduled). Table 4 outlines these risks and how they will be managed. Other general hazards and risks for water cycle infrastructure are considered in this section.

It is important to note that SPS1 has been built to allow for capacity of ultimate development (Stage 1 and Stage 2) that will cater for an EP of 9,976. The estimated EP for the operation of Stage A – Network is only 600 EP and so there is significant storage capacity in SPS1, which will help to mitigate certain operational risks (ie power outages, high rainfall events, delay of tankering services, higher than expected sewage volumes). It has been estimated that there is up to eight days storage at SPS1 and as such other design features such as overflows which will be required for ultimate development are unlikely to be needed for operation of Stage A – Network.

A series of alarms and telemetry will be installed for each of the various water infrastructure elements to assist in minimising risks to community and the environment from spills, bushfire and other operational issues.

- The BWPS will be fitted with a security alarm, fire alarm (as it is located in bush fire prone land) and a pump failure alarm. All of these alarms will be configured to notify ACTEW of an incident or operational irregularity (eg power outage).
- The interim reservoirs will be fenced off and are not located in bush fire prone land. The alarms that will be installed at the interim reservoirs will be located at the chemical dosing unit and will alert QCC if there are low flows of chlorine, continuous operation (ie levels of chlorine are too high) and alarms to advise of power outages.
- SPS1 will have telemetry installed to measure sewage levels with an alarm configured to alert QCC of high levels in SPS1. QCC are required to provide this advice to the Sewage Tankering Contractor (refer Table 5 of OEMP). In addition the Sewage Tankering Contractor is also required to undertake daily visual inspections to ensure sewage levels are managed.

Spills

There is the potential for sewage spills if effluent is incorrectly removed or handled during transportation. The parking bay will include spill detention facilities to ensure sewage runoff is collected and does not enter waterways. The temporary pump to pump out the sewage will be manually operated and can be shut down in the event of a spill. The Sewage Tankering Contractor's Standard Operating Procedure contains procedures to respond to spills (refer Appendix E).

In addition, the Sewage Tankering Contractor will prepare an Incident Management Plan. Incidents on site will be managed in accordance with this Plan.

Structural failure of, or damage to, sewage pipes may result in sewage spills. However, if any sewage pipes are damaged during operation, then QCC will implement the relevant actions from Section 3.7 Brocken/Blocked Sewage Pipes of the Q*ueanbeyan City Council Sewerage System Recovery Action Plan July 2012* to rectify spills and repair infrastructure (refer Table 5).

There is a general risk of chemical spills associated with operation where chemical may contaminate soils or enter waterways. Sodium hypochlorite and sodium bisulphite will be required at the interim reservoirs for chlorine dosing and de-chlorination. These chemicals are classed as Class 8 Dangerous

Goods. Risks of spills will be managed through the implementation of the storage and handling mitigation measures listed in Table 5.

Overflows

There is a small risk of chlorinated water being released to the environment at the interim reservoirs if they exceed capacity.

Whilst such an event is unlikely during operation of Stage A – Network, the design of the interim reservoirs is such that water will overflow to a de-chlorination system so that any water discharged to the environment will meet acceptable environmental discharge limits.

Similarly, the potable water main within the Googong Foreshores boundary will include chamber pits with de-chlorination to allow for treatment of water before it is discharged into stormwater culverts.

The design capacity of SPS1 is for ultimate development (ie an EP of 9,976), which greatly exceeds the expected sewage volumes for the operation of Stage A – Network. As such, overflows at SPS1 are not expected and overflow structures, while in place, would not be utilised during this stage.

Power outages

- **BWPS:** Communication systems and radio telemetry at the BWPS have back-up batteries with four-hour capacity and would remain operational in the event of a power outage. ACTEW operate a Control Centre to monitor assets 24 hours, 7 days a week and in the event of a power outage the staff at the monitoring centre would immediately respond to the notification by contacting the supply authority to confirm the expected outage duration. If a long outage were expected then ACTEW would arrange for a generator. ACTEW can source one internally, but also have a standing arrangement with an external company. Generators typically can be provided within four hours during business hours, but if they are required for out of hours this will be organised by ACTEW staff from the Control Centre. Note that the demand for a generator will also be dependent on consumption patterns, interim reservoir levels and QCC requirements.
- **Interim reservoirs:** Water from the interim reservoirs will be gravity fed to the township, and is not reliant on an electricity supply and so would not be affected during a power outage. Communication systems and radio telemetry have back-up batteries and would remain operational in the event of a power outage. The alarm would notify QCC of a power outage and then a temporary generator would be arranged by QCC from an external supplier for the chlorine-dosing unit to ensure appropriate levels of chlorine (which would still be monitored by the telemetry and back up battery supply). The connection of a temporary generator could take between 1 hour and 2 days (for a generator outside the Canberra region) depending on the availability of the generators in the area. This would be sufficient time to maintain the quality of the water supply to the township.
- **SPS1:** The permanent pumps at SPS1 will not be operational during the operation of Stage A – Network. The Sewage Tankering Contactor will arrange for a temporary generator to operate the temporary pump to transfer waste to the tanker if required. However the need for sewage removal in a power outage would not be critical, as there is capacity at SPS1 for up to eight days storage.

Bush fire

The BWPS has been placed in a block building due to concerns around potential for bush fire given the presence of nearby vegetation. The building and apertures have been rated to the appropriate bush fire protection as required by Australian Standards. Fire monitoring and telemetry signals have also been installed inside the BWPS building.

Bush fire risk is considered to be lower for the interim reservoirs and SPS1. However, as a precaution the bush fire mitigation measures listed in Table 5 will be implemented for all water cycle infrastructure.

Overall, QCC will be responsible for responding to bushfires at the interim reservoirs, GTPL (and contractors) at SPS1, and ACTEW at the BWPS.

Figure 10 Sensitive receivers

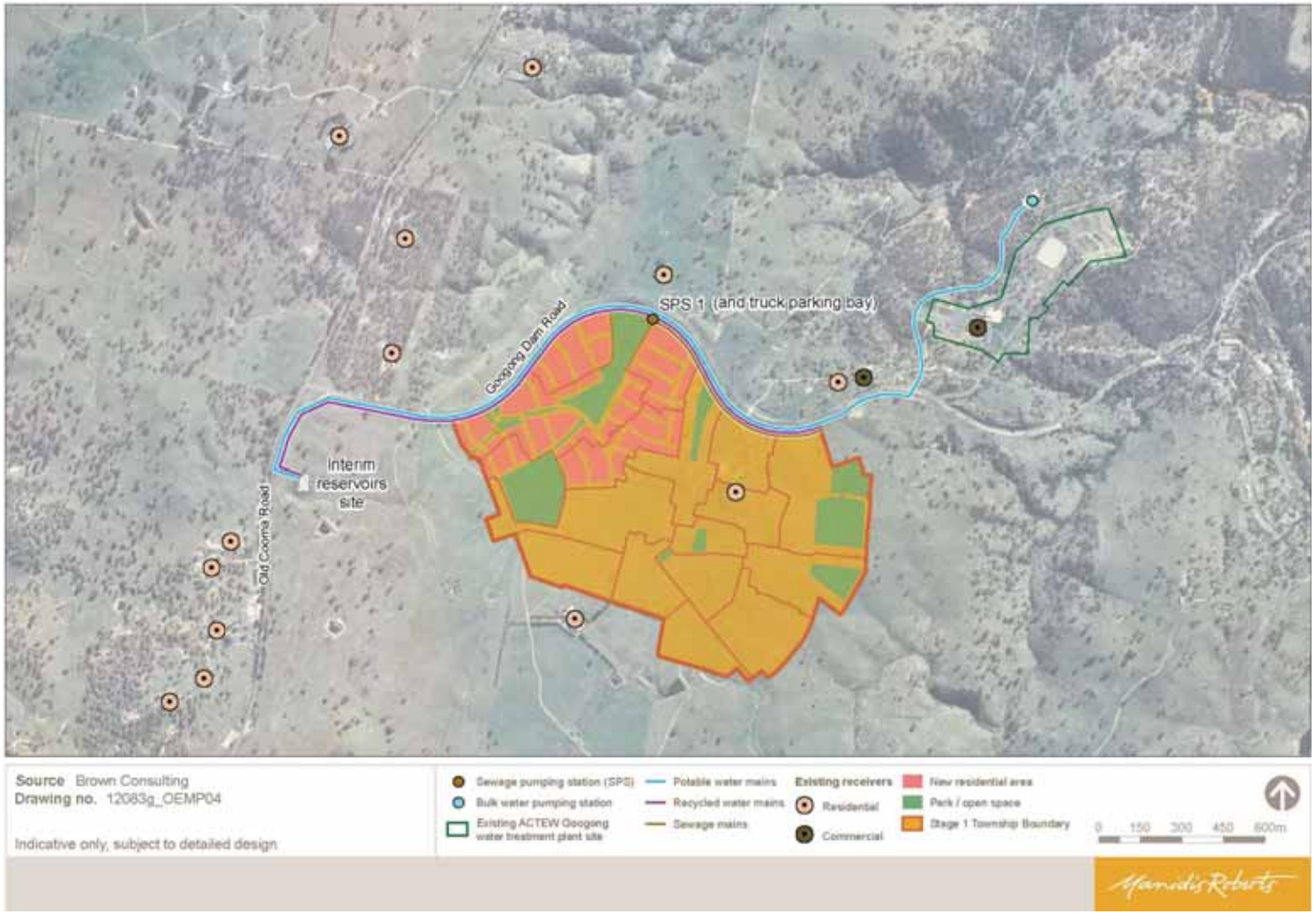


Table 4 Operational risks for SPS1 and offsite removal of sewage

Risk/hazard	Untreated impact	Treatment of risk	Treatment impact	Resulting risk to be managed
Power outage at SPS1	Low	A temporary pump will be installed at SPS1 to pump sewage into the tankers. In the event of a power outage, a temporary generator will be brought in by the SPS Operator to power the pump. No removal of sewage will take place at night so there will not be any effects to lighting from power outages. Is there a resultant risk: No	-	-
Tankering contractor is not available to remove sewage from SPS1 as scheduled (eg labour strike, long weekend, contract default, etc)	Med	SPS1 has been conservatively designed to have an emergency storage of up to eight days based on the “most likely” occupancy-timing scenario. This is considered adequate to allow for conflicts in other construction works to be resolved. However, it should be noted that extended storage of sewage could lead to septicity and odour issues. This has been addressed by the inclusion of an aeration unit. Nearest residences will be about 25 m away. Is there a resultant risk: No	Low	-
Sewage volume increases beyond worst case scenario prediction (ie more sewage than expected)	Moderate	It should be noted that there is ultimate emergency storage (including wet well storage) at SPS1 for an EP of 9,976 EP that greatly exceeds the EP of 600 expected for Stage A – Network. As such, sewage overflows or spills are not expected as the design capacity greatly exceeded even the highest estimated volumes of sewage from the operation of Stage A – Network. The risk here lies in the need to increase waste tankering operations. To deal with any increased sewage volumes there may be a need for additional truck movements, and the need for collections outside 7am-6pm. Is there a resultant risk: Yes	Moderate	Various approvals would need to be reviewed and discussed with relevant stakeholders to confirm if additional tankering was acceptable, should it be required.

Risk/hazard	Untreated impact	Treatment of risk	Treatment impact	Resulting risk to be managed
Increased volumes in the network and at SPS due to high rainfall events	Low	High rainfall events could increase flows to SPS1 as water may infiltrate the pipe network. It should be noted that there is ultimate storage capacity in Stage A – Network for an EP of 9,976 EP that exceeds the EP of 600 expected for Stage A – Network. The risk here lies in the need to increase waste tankering operations if volumes are higher than expected. To deal with any increased sewage volumes there may be a need for additional truck movements, and the need for collections outside 7am-6pm. Is there a resultant risk: Yes	Moderate	Various approvals would need to be reviewed and discussed with relevant stakeholders to confirm if additional tankering was acceptable, should it be required.
WRP is not ready to be commissioned as scheduled	Moderate	Tankering will need to continue until WRP is ready to receive sewage from SPS1. The increased EP, until such time, could require an increase daily tanker volumes, and the need for collections outside 7am-6pm. A possible treatment could be to install and commission a skid mounted portable sewage treatment plant and/or to restrict the release of additional lost that would connect to the sewer. Is there a resultant risk: Yes	Moderate	Various approvals would need to be reviewed and discussed with relevant stakeholders to confirm if additional tankering was acceptable, should it be required.
EP required for WRP commissioning (600 EP) is not reached until after the “most likely” scenario prediction.	Moderate	Occupancy rate could be slower than forecasted but tankering will need to continue until an EP of 600 is reached and commissioning of the WRP can commence. The proposed interim operations and sewage removal arrangements in place for Stage A – Network are sufficient to manage this risk. Is there a resultant risk: No	-	-
The nominated waste facility is unable to accept tankered sewage due to unacceptable volume of sewage during high existing flows into STP.	Low	SPS1 has been conservatively designed to have an emergency storage of up to eight days based on the “most likely” occupancy-timing scenario. This is considered adequate to allow for reduction of peak flows at the receiving STP. Is there a resultant risk: No	Low	-

Risk/hazard	Untreated impact	Treatment of risk	Treatment impact	Resulting risk to be managed
The nominated waste facility is unable to accept tankered sewage because it does not meet operator's requirements.	Low	The sewage will comprise domestic sewage, so the likelihood of the waste not meeting operator requirements is low.	Low	GTPL will negotiate to use ACTEW (Coppins Crossing) as an alternative disposal facility.
Community complaints	Low	GTPL has in place a Community Information Plan and other procedures to inform residents (refer Section 6 of this OEMP). Is there a resultant risk: No	-	

4.4 Mitigation measures

A table of mitigation measures has been developed for Stage A – Network to address the environmental risks and aspects discussed in Section 4.3.

Table 5 Mitigation measures

Aspect	Mitigation measure/action	Reference	Responsibility
Aboriginal heritage	Impacts to known Aboriginal heritage sites GA7, GA27, GWTP1, GWTP3, GWTP4, GWTP5 and GWTP6 will be avoided. Where these sites fall within close proximity to operation/maintenance works, exclusion fencing will be installed to protect the sites from inadvertent impacts. Aboriginal heritage sites are identified in the Environmental Constraints Map included at Appendix A.	CoA C4 CoA C5 SoC H1 SoC H2	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Air quality/ Greenhouse gases	Ensure all plant and equipment used on site is: a) maintained in a proper and efficient manner. b) operated in a proper and efficient manner.	CoA B1	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Biodiversity	Ensure operational activities do not affect or impact on the listed threatened species or Endangered Ecological Communities (eg Blakely's Red Gum/Red Gum/Bundy Grassy Woodland, Hoary Sunray, and Pink-tailed Worm Lizard are marked on the Environmental Constraints Map for Stage A – Network and must be avoided).	SoC F3	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Biodiversity	Develop and implement a weed maintenance program for the Googong Township and BWPS.	SoC F3	QCC, ACTEW
Emergency and risk	Prepare and implement emergency procedures that are consistent with the emergency response approach detailed in Section 7.5 of the OEMP.	CoA D7(f)(vii) SoC R2	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Emergency and risk	QCC to respond to all alarms and telemetry signals for SPS1 (eg overflow, fire, electricity outage) by immediately notifying and providing details to GTPL, SPS Operator and Sewage Tankering Contractor who are responsible for SPS1 operation during Stage A – Network.	CoA D7(f)(vii) SoC R2	QCC

Aspect	Mitigation measure/action	Reference	Responsibility
Emergency and risk	Ensure the following bushfire controls are in place: • Fire alarms and monitoring are installed and maintained. • Flammable substances are stored safely. • Fire extinguishers are kept on site. • Water supply for fire fighting is identified. • Staff are trained to respond to bushfires and contact emergency services.	CoA D7(f)(vii)	GTPL, ACTEW, QCC, SPS Operator
Googong Foreshores	Maintain operation and viability of scour pits to ensure downstream water quality is not compromised.	CoA D7(f)(vi) SoC WQ5	GTPL
Greenhouse gases	Obtain electricity data from all available SCADA and telemetry for water cycle infrastructure during operation to assess electricity usage to help minimise consumption of electricity.	EA Section 14.3	GTPL, ACTEW, QCC, SPS Operator
Noise	Undertake noise monitoring for the BWPS once operational to ensure the noise does not exceed 35 dB(A) ($L_{Aeq(15min)}$) at any residence on privately owned land.	CoA D1	GTPL
Noise/odour	Maintain project hotline and document all noise and odour complaints and ensure that noise complaints are forwarded to the relevant operator.	CoA D7 f(ii)(iii)	GTPL
Noise/odour	Proactively respond to all noise/odour complaints by identifying noise/odour source, undertaking monitoring and considering options to address the noise (eg attenuation, temporary noise walls, altering chemical dosing). Refer also to the Complaints Management Procedure appended to the Community Engagement and Stakeholder Management Plan. Record and explain how noise/odour complaints have been addressed in the Compliance Tracking Report required for the first two years of operation.	CoA D7 f(ii)(iii) AQ3	GTPL
Odour	Collect meteorological data at the WRP site for at least 12 months prior to commissioning. Such data will be used to validate the Odour Impact Assessment and any odour complaints.	AQ1	GTPL
Odour	Ensure the aeration systems at SPS1 are properly maintained to minimise potential odour impacts.	CoA B6	SPS Operator
Odour	Minimise potential for odours by undertaking operations efficiently to reduce risk of sewage spills. Ensure covers to sewage access points are covered when not in use.	CoA B6	Sewage Tankering Contractor

Aspect	Mitigation measure/action	Reference	Responsibility
Operating procedure	The Sewage Tankering Contractor is to prepare a Standard Operating Procedure for tankering operations, which will consider all potential environmental risks and prescribe mitigation measures (refer Appendix E).	CoA A13	Sewage Tankering Contractor
Potable water	Ensure drinking water is dosed with chlorine at the interim reservoir and monitored to meet the requirements of the Australian Drinking Water Guidelines 6 (NHRMC & NRMMC, 2011) before it is supplied to the Googong Township.	CoA D2	QCC
Potable water	Develop and implement a Water Quality Assurance Program for Phase 1 (tankering of potable water to interim reservoirs after handover from GTPL) and for Phase 2 of Stage A – Network (BWPS providing potable water to the interim reservoirs). Ensure this Program includes ongoing management and monitoring of the supply of drinking water as part of the NSW Health Drinking Water Monitoring Program.	CoA D3	QCC
Potable Water	The carting/tankering of potable water is to be undertaken in accordance with the NSW Guidelines for Water Carters (NSW Health, 2012) all approvals (such as approval under Section 68 of the *Local Government Act 1993*) are to be obtained prior to commencement.	NSW Health submission	Potable Water Tankering Contractor
Power outages	Respond to power outage alarms by organising a portable generator to be connected to the BWPS (ACTEW) or interim reservoirs (QCC). Generators will be sourced within a suitable to allow for continuous operation.	CoA D7(f)(i)	ACTEW, QCC
Sewage pipe damage	Implement the relevant actions from Section 3.7 Brocken/Blocked Sewage Pipes of the Q*ueanbeyan City Council Sewerage System Recovery Action Plan July 2012* to rectify any sewage spills resulting from structural failure or damage to sewage pips, and repair infrastructure	CoA D7(f)(i)	QCC
Storage and handling	Develop and implement an Incident Management Plan to ensure rapid clean up of any spillages at the site and on route. Spillages must be loaded onto the vehicle or another vehicles. Disposal of washing to a drain or waterway is not permitted. Any incidents must be reported to the applicable stakeholder as determined in the Plan.	SPS Contract SoC S3	Sewage Tankering Contractor
Storage and handling	Develop and implement a service specific Safety Management Plan.	SPS Contract SoC S3	SPS Operator

Aspect	Mitigation measure/action	Reference	Responsibility
Storage and handling	Store and handle all dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) DECC's *Environment Protection Manual Technical Bulletin – Bunding and Spill Management*.	CoA B15 SoC S3	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Storage and handling	Store relevant chemicals below threshold quantity levels.	SoC R1	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Storage and handling	Undertake operational activities in accordance with relevant SDS's.	SoC R1	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Storage and handling	Use bunded areas for the storage and delivery of chemicals in accordance with AS 3780:2008 *The storage and handling of corrosive substances* and the relevant SDS's for storage of chemicals at SPS1, interim reservoir and BWPS.	SoC R1	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Storage and handling	Ensure spill response procedures and equipment for containment and recovery are available on site.	SoC S3	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Storage and handling	Conduct workforce training on the transport, storage, handling and disposal procedures relating to chemicals.	SoC S3	GTPL, ACTEW, QCC, SPS Operator, Sewage Tankering Contractor, Potable Water Tankering Contractor
Traffic	Repair any damage to roads, driveways and access points attributable to the project during the operation phase.	CoA D7 f(iv)	GTPL
Traffic	Advise contractors/operators, where possible, of any likely access changes along roads to water cycle infrastructure as a result of other construction activities for the Googong Township (eg partial or temporary closures of roads).	CoA D7 f(iv)	GTPL

Aspect	Mitigation measure/action	Reference	Responsibility
Traffic	The Sewage Tankering Contractor will prepare an operating procedure that will include details of vehicle routes, timing of trips, parking, ingress and egress considerations for accessing SPS1 to remove sewage. Where possible, the Procedure will prescribe vehicle routes outside built up areas and along main roads. The Procedure will also consider interactions with other construction vehicles present in the project area (refer Appendix E).	CoA D7 f(iv) SoC T5 SoC W2	Sewage Tankering Contractor
Traffic	The Sewage Tankering Contractor will track daily tanker movements and provide information to GTPL on a weekly basis.	CoA D7 f(iv) SoC T5 SoC W2	Sewage Tankering Contractor
Traffic	Waste tankers will not access the project site outside the following hours (7am – 6pm), unless in the unlikely event that additional loads are required to excessive volumes or during an emergency situation.	CoA D7 f(iv) SoC T5	Sewage Tankering Contractor
Traffic	All other vehicles will minimise traffic movements outside the following hours (7am – 6pm everyday) and park in designated areas.	CoA D7(f)(iv) SoC T5	GTPL, ACTEW, QCC, SPS Operator, Potable Water Tankering Contractor
Traffic	The Sewage Tankering Contractor, SPS Operator and GTPL will liaise and co-ordinate truck movements based upon sewage volume estimates obtained from visual inspections of SPS1 and past volumes.	CoA D7 f(iv) SPS Contract	GTPL, SPS Operator, Sewage Tankering Contractor
Waste	Reuse and recycle materials on site where feasible. Waste that cannot be recycled or reused is to be removed offsite. Waste must be correctly classified and disposed of at an appropriately licensed location.	CoA B8 CoA B9 SoC W2	GTPL, ACTEW, QCC, SPS Operator
Waste	Do not burn green waste on site.	CoA B10	GTPL, ACTEW, QCC, SPS Operator,
Waste	Bring no effluent/sewage into the Googong Township.	Sewage Tankering Contract CoA B7	Sewage Tankering Contractor

5 Competence, training and awareness

To ensure that this OEMP is effectively implemented, each organisation is responsible for ensuring that all personnel reporting to them are aware of the requirements of this OEMP.

A register of all project site inductions and environmental training carried out will be maintained by each operator.

5.1 Project inductions

Each organisation will be responsible for ensuring that all personnel (including sub-contractors) are provided with a project induction for Stage A – Network.

The environmental component of the induction will include, but not be limited to, an overview of:

- Purpose and objectives of the OEMP.
- Conditions of environmental licences, permits and approvals.
- Key environmental issues and responsibilities.
- Mitigation measures for the control of environmental issues.
- Transport, storage, handling and disposal procedures relating to chemicals.
- Incident management, response and reporting requirements.

6 Communication and consultation

6.1 Communication between operators

A key to ensuring compliance with environmental obligations and continual improvement is the ongoing communication to project personnel. GTPL, ACTEW and QCC will be responsible for the operation of Stage A – Network and a co-ordinated approach to communication will be adopted.

Representatives from each organisation will meet every six months (or as required) during operation of Stage A – Network, and in response to any non-conformance to discuss any issues or concerns with operational environmental management, timing and requirements for monitoring/audits, and any amendments to environmental management documents that might be required or any changes to operational activities for Stage A – Network.

6.2 Communication with government agencies

The GTPL Community Engagement and Stakeholder Management Plan outlines GTPL's approach to communication with government agencies.

The GTPL Assistant Project Director will be the main point of contact regarding specific environmental issues and has the responsibility to report on the ongoing environmental performance to the DP&I as part of the Compliance Tracking Program for the first two years of operation. The GTPL Assistant Project Director will also be the main contact point for reporting any environmental pollution incidents to the EPA.

6.3 Stakeholder and community consultation

Community Engagement and Stakeholder Management Plan

The Community Engagement and Stakeholder Management Plan provides a coordinated approach to stakeholder communication and liaison – from government agencies to Aboriginal and community groups – during the delivery phase of Stage 1. It provides an overview of activities, identifies key interfaces and promotes consistency of message, to ensure successful ongoing relationships.

It is an active document that will be updated as the Stage 1 project progresses.

Community Information Plan

A Community Information Plan (CIP) has been developed to provide an approach to community communication and consultation processes in accordance with the requirements of CoA A14. The CIP is included an appendix to the Community Engagement and Stakeholder Management Plan and identifies opportunities for providing information and consulting with the community during the construction and operation phases of the Googong Township IWC Project.

Communication tools defined in the strategy include:

- Community newsletters.
- Email updates.
- Displays.
- Community events.
- Advertising notifications.
- Letterbox notifications.
- Meetings.
- Fact sheets.
- Website.
- Signage.

GTPL will be responsible for implementing the CIP during the first two years of operation of the Googong Township IWC Project.

Complaints Management Procedure

The Complaints Management Procedure has been developed in accordance with CoAA15, and is included as an appendix to the Community Engagement and Stakeholder Management Plan. The procedure details:

- Protocols for receiving complaints.
- A methodology for the recording, tracking and reporting on complaints.
- Timeframes for responding to and resolving complaints.
- An escalation process for complaints that cannot be easily resolved.

The community can make an enquiry or complaint by telephone, post, email or face to face. Details of how to contact the project team will continue to be advertised in local newspapers (for at least the first two years of operation), on the project website, on site signage and on all communication materials.

The Complaints Management Procedure outlines the specific procedure that GTPL will undertake in order to manage complaints and should be read in conjunction with the Community Engagement and Stakeholder Management Plan and the CIP.

7 Incidents and emergencies

7.1 Classification of environmental incidents

There are two categories of environmental incidents.

Category one

Category one incidents include:

- Unauthorised sediment discharge or fuel, oil or chemical spill leaving site where the pollution incident causes or threatens material harm to the environment or people (as per Part 5.7 of the NSW *Protection of the Environment Operations Act 1997* (POEO Act)).
- Carrying out of work without necessary approval/permit/licence.

Category two

Category two incidents include:

- Pollution incidents that can be cleaned up without material harm to the environment or people (as per Part 5.7 of the POEO Act).
- A non-conformance with the environmental management system that does not result in a Category one incident.

7.2 Incident management

The incident management response will be as follows.

Category one

- If necessary, stop work in relevant area and take necessary actions or put in place suitable controls to avoid and reduce impacts of incidents to the environment or community.
- All operators must immediately notify the GTPL Assistant Project Director (refer to Section 7.3).
- GTPL to immediately notify all relevant authorities (DP&I, EPA, Ministry of Health, WorkCover, QCC/Palerang Council and Fire and Rescue NSW) for pollution incidents causing or threatening material harm (refer to Section 7.3).
- GTPL to immediately notify DP&I (and others as required) for all other category one incidents.
- All operators will complete an incident report form and record in the Incident Register (to be developed and managed by each contractor/operator) and submit report to GTPL within two days.
- All operators will investigate the incident (root cause analysis) and for implementing any opportunities for improvement (as soon as practical, but within one week) (refer Section 7.4).
- GTPL to issue copy of incident report and root cause analysis to DP&I (and others as required) for their consideration (within seven days).

Category two

- If necessary, stop work in relevant area and take necessary actions or put in place suitable controls to avoid and reduce impacts of incidents to the environment or community.
- All operators must immediately notify the GTPL Assistant Project Director (refer to Section 7.3).
- All operators will complete an incident report form and record in the Incident Register (to be developed and managed by the contractor/operator) and submit to report to GTPL within two weeks.
- All operators are responsible for investigating the incident (root cause analysis) and for implementing any opportunities for improvement (as soon as practical, but within one week) (refer Section 7.4).
- GTPL to report on category two incidents to DP&I in the six-month construction compliance report.

7.3 Incident reporting

ACTEW, QCC, the SPS Operator, the Sewage Tankering Contractor and Potable Water Tankering Contractor will each be responsible for identifying and investigating incidents related to their area of operations. GTPL will be kept informed of incidents and liaise with the relevant authorities, when necessary.

GTPL and the operator will determine if the incident is a Category one or Category two incident and then follow the appropriate reporting protocol.

All incident recording, management and reporting will be in accordance with the requirements of the Compliance Tracking Program (for the first two years of operation), which documents GTPL's:

- Mechanisms for recording incidents and actions taken in response to those incidents.
- Provisions for reporting environmental incidents to the Director-General during operation.

Category one pollution incident reporting – notification under the POEO Act

A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur. Material harm is defined under the POEO Act:

- If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.
- If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

All pollution incidents causing or threatening material harm to the environment must be notified to each relevant authority in accordance with Section 148 of the POEO Act. For Category one pollution incidents, GTPL will immediately (that is promptly and without delay, after they become aware of the incident) notify:

- DP&I.
- EPA.
- Ministry of Health.
- WorkCover.
- QCC and/or Palerang Council.
- Fire and Rescue NSW.

An incident report will be prepared by the operator and provided to GTPL within two days of the incident occurring, including learnings from the incident and proposed measures to prevent the occurrence of a similar incident.

Within seven days of the incident occurring, GTPL will provide a detailed incident report and copy of the root cause analysis investigation to the EPA and other relevant authorities.

All other Category one incident reporting

For all other Category one incidents, GTPL will notify the Director-General DP&I and any relevant agencies as soon as practicable after GTPL becomes aware of the incident.

An incident report will be prepared by the operator and provided to GTPL within two days of the incident occurring, including learnings from the incident and proposed measures to prevent the occurrence of a similar incident.

Within seven days of the incident occurring, GTPL will provide the Director-General of DP&I, and any relevant agencies, a detailed incident report and copy of the root cause analysis investigation.

Category two incident reporting

An incident report will be prepared by the operator and provided to GTPL within two weeks of the incident occurring, including learnings from the incident and proposed measures to prevent the occurrence of a similar incident.

Category two incidents will be reported to DP&I through the six-monthly compliance reports (required fo the first two years of operation).

Key contacts for environmental emergencies are provided in Table 6.

Table 6 Emergency contacts

Emergency contact/organisation	Name	Contact details
GTPL – Assistant Project Director	Craig Harris	0409 999 059
GTPL – IWC Development Manager	Matthew Lau	0481 035 715
QCC Manager – Water and Sewer	TBA	(02) 6285 6000 After hours (02) 6298 1234
ACTEW – Project Manager	Tim Brake	0414 014 228
SPS Operator (Contractor)	TBA	TBA
Sewage Tankering Contractor	TBA	TBA
Potable Water Supply Contractor	TBA	TBA
OEH	Pollution line	131 555
DP&I	Lisa Mitchell	(02) 9228 6284
Palerang Council	N/A	(02) 6238 1290 After hours 1300 735 025
Murrumbidgee/Southern NSW Local Health District Public Health Unit	N/A	(02) 6080 8900
NSW Health	N/A	(02) 9391 9000

Emergency contact/organisation	Name	Contact details
Police	N/A	000 (or 112 from mobiles)
Local Police	N/A	131 444
Ambulance	N/A	000 (or 112 from mobiles)
Canberra hospital	N/A	(02) 6244 2222
NSW Rural Fire Service	N/A	000 (or 112 from mobiles)
Gas/Electricity	N/A	131 909
Telstra	N/A	132 999
WorkCover NSW	N/A	13 10 50
WIRES	N/A	1300 194 737

7.4 Incident investigation

All environmental incidents will be investigated by the operator/contractor. A root cause analysis approach will adopted to assist identify the origin of the problem in order to:

- Determine what happened.
- Determine why it happened.
- Identify and implement measures to reduce the likelihood that it will happen again.

Incident reports are to be provided by the contractor to GTPL and then to the Director-General (where applicable) within seven days of the incident occurring.

Where the Director-General (DP&I) provides recommendations to address the cause or impact of any incident reported to the DP&I, the project (ie Stage A – Network) will meet the requirements of the Director-General's recommendations, in the timeframe specified, unless otherwise agreed.

Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

Any recommended actions to improve existing processes or systems will be managed through the Non-Conformance Register (which will be maintained by GTPL), as outlined in Section 8.4.

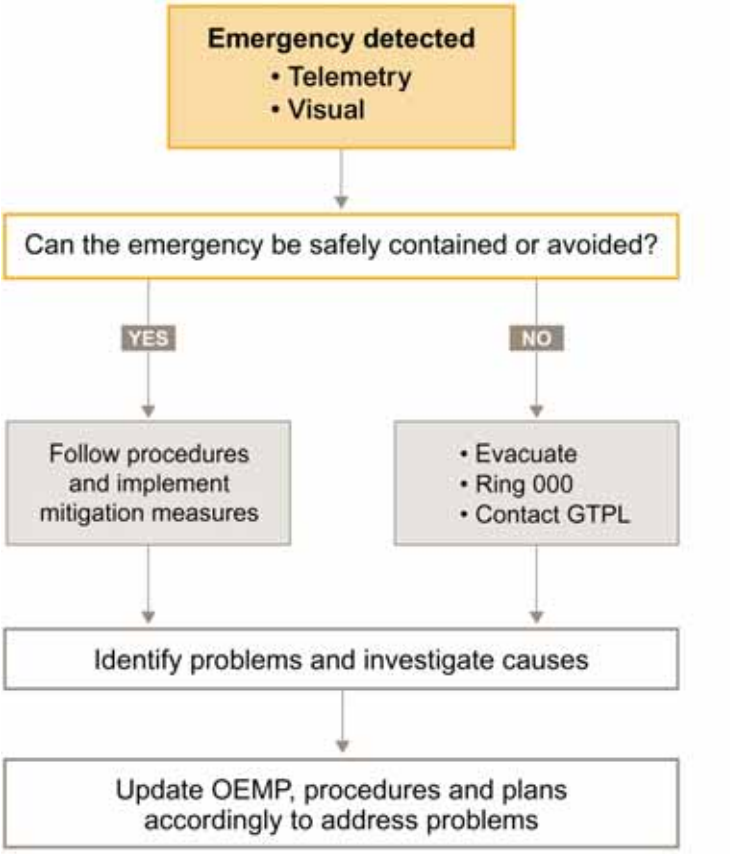
7.5 Emergency response

The types of emergencies that could occur during the operation of Stage A – Network could include, but would not be limited to overflows, electricity outage, fires and structural failures of the water cycle infrastructure.

Many operational risks have been considered in the design process while residual risks will be managed through the installation of telemetry and alarms to notify operators of emergencies along with a range of mitigation measures for reacting to potential emergencies (refer Table 5).

Each contractor/operator will be responsible for developing and implementing an emergency response plan/procedure for water cycle infrastructure. Such procedures will be communicated to all project team members and persons working on Stage A – Network. All plans and procedures developed will be consistent with the emergency response flow chart shown in Figure 11.

Figure 11 Emergency response



8 Environmental inspections, monitoring and auditing

8.1 Environmental inspections

GTPL will arrange for regular inspections of Stage A – Network operational sites in consultation with ACTEW and QCC. Frequency of site inspections will be determined by the nature of activities being undertaken and their associated environmental risks. A record of each inspection will be maintained.

Required actions will be discussed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

8.2 Environmental monitoring

Monitoring will be undertaken to measure the effectiveness of environmental controls and implementation of this OEMP, and to address approval requirements. The monitoring and reporting requirements for Stage A – Network are included in Table 7.

8.3 Auditing

Internal auditing will be undertaken generally on a yearly basis for Stage A – Network and co-ordinated by GTPL with inputs from ACTEW and QCC. The purpose of auditing is to verify compliance with:

- This OEMP and management plans.
- Approval requirements (CoAs, SoCs).
- Any relevant legal and other requirements (eg licenses, permits, regulations).

Table 7 Monitoring and reporting requirements for Stage A – Network

Aspect	Reference	Monitoring requirement	Timing	Reporting	Responsibility
Air quality	AQ1	Collect meteorological data at the WRP site for at least 12 months prior to commissioning. Such data will be used to validate the Odour Impact Assessment and any odour complaints.	Commence monitoring at least 12 months prior to commissioning of the WRP	Prepare baseline meteorological data report	GTPL
BWPS	SoC OP2 SoC R2	Obtain telemetry data from water cycle infrastructure including flow monitoring for the BWPS.	Ongoing	Provide results of telemetry data for all to GTPL monthly	ACTEW
BWPS	QCC comment	Provide water quality data for bulk water that is to be supplied to the interim reservoirs to QCC.	Ongoing	As required	ACTEW
Drinking water	CoA D2 CoA D3	Ongoing management and monitoring of the supply of the drinking water shall form part of the NSW Health Drinking Water Monitoring Program and must be complaint with the Australian Drinking Water Guidelines 6 (NHRMC & NRMMC, 2011).	Ongoing	As required	QCC
Drinking water	NSW Health submission	Compile and keep records on deliveries and cleaning as per the NSW Guidelines for Water Carters (NSW Health, 2012).	Ongoing	Records must be kept for at least six months.	Potable Water Tankering Contractor
Drinking water	NSW Health submission	Compile and keep records of water carter details, as per the NSW Guidelines for Water Carters (NSW Health, 2012)	Ongoing	Records must be kept for at least six months.	QCC
Greenhouse gases	EA Section 14.3	Obtain electricity data from all SCADA and telemetry for water cycle infrastructure during operation to assess electricity usage to help minimise consumption of electricity.	Annually	Operators to provide electricity data, GTPL to compile results annually	ACTEW, QCC, SPS Operator
Groundwater	CoAD8 (b)(i) WMP	Obtain detailed baseline data of groundwater levels, yield and quality in the region, and privately owned groundwater bores, that could be affected by the Project.	Refer WMP	Refer WMP	GTPL
Groundwater	SoC G8 WMP	Undertake groundwater monitoring as outlined in Table 12 of the *Googong Township Water Cycle Project Submissions Report.*	Refer WMP	Refer WMP	GTPL, QCC

Aspect	Reference	Monitoring requirement	Timing	Reporting	Responsibility
Groundwater	CoAD8 (b)(iii) WMP	Monitor and assess: • Impacts on the groundwater supply of potentially affected landowners. • Impacts on any groundwater dependent ecosystems and riparian vegetation.	Refer WMP	Refer WMP	GTPL, QCC
Interim potable reservoir	SoC OP2 SoC R2	Obtain telemetry data from water cycle infrastructure including reservoir levels and chemical storage levels at the interim potable reservoir.	Ongoing	Provide results of telemetry data for all to GTPL monthly	QCC
Noise	CoA D1	Undertake noise monitoring for the BWPS once operational to ensure the noise does not exceed 35dB(A) ($L_{Aeq(15min)}$) at any residence on privately owned land.`	Once during first year of operation	Prepare noise monitoring report	GTPL
Noise	CoA D7(f)(ii)	Undertake noise monitoring at nearest receivers on an as needs basis to respond to noise complaints.	As required	Prepare noise monitoring report	GTPL
Odour	CoA D7(f)(iii)	Undertake odour monitoring at nearest receivers on an as needs basis to respond to odour complaints.	As required	Prepare odour monitoring report	GTPL
SPS	SPS Contract	Obtain and keep daily records of sewage volume, pH and dissolved oxygen (DO) at the SPS.	Daily	Provide records to GTPL on request	SPS Operator
SPS	SPS Contract	Conduct visual inspection of SPS1 to ensure ongoing operation and advise of levels in wet wells.	As required and after heavy rainfall event	Provide advice to GTPL on operation, as required	SPS Operator
Sewage waste quality	CoA B9	QCC will take random samples of sewage as it arrives from Googong Township via tankers to the Queanbeyan STP. Samples will be taken according to industry standards and be analysed at a NATA accredited laboratory. Samples will be clearly marked and sealed at the sampling point.	For each tanker	Provide results of monitoring to GTPL on a monthly basis	QCC
Sewage waste quality	CoA B9	Obtain and keep daily records of pH and dissolved oxygen (DO).	Daily	Provide results to GTPL on a monthly basis	Sewage Tankering Contractor

Aspect	Reference	Monitoring requirement	Timing	Reporting	Responsibility
Sewage waste quantity	CoA B9	Obtain and keep daily records of the pump out volumes from SPS and disposal volumes at the STP.	Daily	Provide results to GTPL on a monthly basis	Sewage Tankering Contractor
Soil	CoA D8(e)(i) SoC G7 SoC S5 WMP	Obtain baseline data of the soil properties of the proposed irrigation areas, including salinity levels and a nutrient budget.	Refer WMP	Refer WMP	GTPL
Soil	CoA D8(e)(iv) WMP	Monitor areas subject to irrigation to ascertain salinity impacts.	Refer WMP	Refer WMP	GTPL, QCC
Surface water and aquatic ecology	CoA D6 CoA D8(a)(i) SoC A1 SoC WQ4 WMP	Obtain baseline data of surface water flows and quality in creeks and other water bodies affected by the project.	Refer WMP	Refer WMP	GTPL
Surface water and aquatic ecology	CoA D8(a)(iii) WMP	Monitor and assess: • Surface water flows and quality. • Impacts on water users. • Stream health and habitat. • Channel stability.	Refer WMP	Refer WMP	GTPL, QCC
Tanker movements	CoA D7(f)(iv)	Monitor and record daily waste tanker movements.	Daily	Provide information to GTPL on a weekly basis. Records will be made available to QCC on request.	Sewage Tankering Contractor
Temporary pumps	Sewage Tankering Contract	Check temporary pumps for the removal of sewage for the SPS are working.	Daily	Provide advice to GTPL on malfunctioning pumps, as required	Sewage Tankering Contractor
Waste dockets	CoA B9	Track waste volumes and contents as per the conditions of the applicable trade waste agreement/licence.	Daily	Provide evidence of waste dockets and other receipts to GTPL on a monthly basis	Sewage Tankering Contractor

8.4 Non-conformity, corrective and preventative actions

A non-conformance is an action or omission that does not conform with the requirements of this OEMP and supporting environmental documentation, or any legal or other requirement as outlined in Appendix B. Any member of the project team can identify a non-conformance.

An opportunity for improvement may be identified through the review and monitoring processes that will be implemented during the operation of Stage A – Network. Review, monitoring or auditing may identify a variety of improvements that must or should be made to ensure continual improvement.

For example, an internal audit of an operator's Incident Register may identify an opportunity for improvement in areas such as documentation (OEMP, management plans, procedures, checklists etc) or resourcing (number and experience of environmental or other personnel). Any member of the project team can identify an opportunity for improvement.

Identifying non-conformance

Non-conformances may be identified in one of the following ways:

- Environmental incidents.
- Through monitoring and/or reporting.
- OEMP audits/review.
- Project team communication/feedback.

Reporting non-conformance

Non-conformances will be investigated and reported. The following details must be included:

- Details of the person reporting the non-conformance.
- Description of the non-conformance including time, date and location.
- Summary of the non-conformance including personnel involved, cause and environmental impact.
- Summary of actions taken to remediate the situation and mitigate further environmental impact.
- Further action required, a timeframe for completion and responsibility to correct or prevent future non-conformances.

Recording non-conformance

Following the investigation and reporting, a summary of the non-conformance must be recorded in a Non-Conformance Register, which is to be maintained by GTPL for the duration of Stage A – Network. Improvement opportunities will also be recorded in the Non-Conformance Register, for example to capture any system improvements recommended as the result of an incident investigation provided by the operator/contractor.

Review of the Non-Conformance Register

The Non-Conformance Register will be reviewed regularly by GTPL during Stage A – Network to ensure actions are closed out in a timely manner or as required.

8.5 Reporting

Monthly reports

Each month all operators and contractors will be required to submit a Monthly Report to GTPL that will include:

- All monitoring/tracking inputs as detailed in Table 7.

Annual operation report

GTPL will compile an annual operation report for Stage A – Network that will:

- Record compliance with the CoA, SoCs and other licence/approvals/permits (as per the Tracking Compliance Program required for the first two years of operation).
- Track progress of environmental objectives (refer Section 3.4).
- Discuss nature of and response to community complaints (refer Section 6.3).
- Include results from inspections, monitoring and the annual audit (refer Section 8.3).
- Discussion of Non-Conformance Register and opportunities for improvement (refer Section 8.4).

All operators will be required to provide all relevant information as requested by the GTPL Assistant Project Director, to assist with preparation of the annual operation report for Stage A – Network.

As outlined in the Compliance Tracking Program, annual compliance reports will be provided to the Director- General of DP&I for the first two years of operation.

The annual operation report will then be used to review the OEMP and supporting plans and procedures to ascertain whether current operations are adequate to meet the CoA/SoCs and environmental objectives for Stage A – Network. This process is explained in more detail in Section 8.6.

8.6 Adaptive management

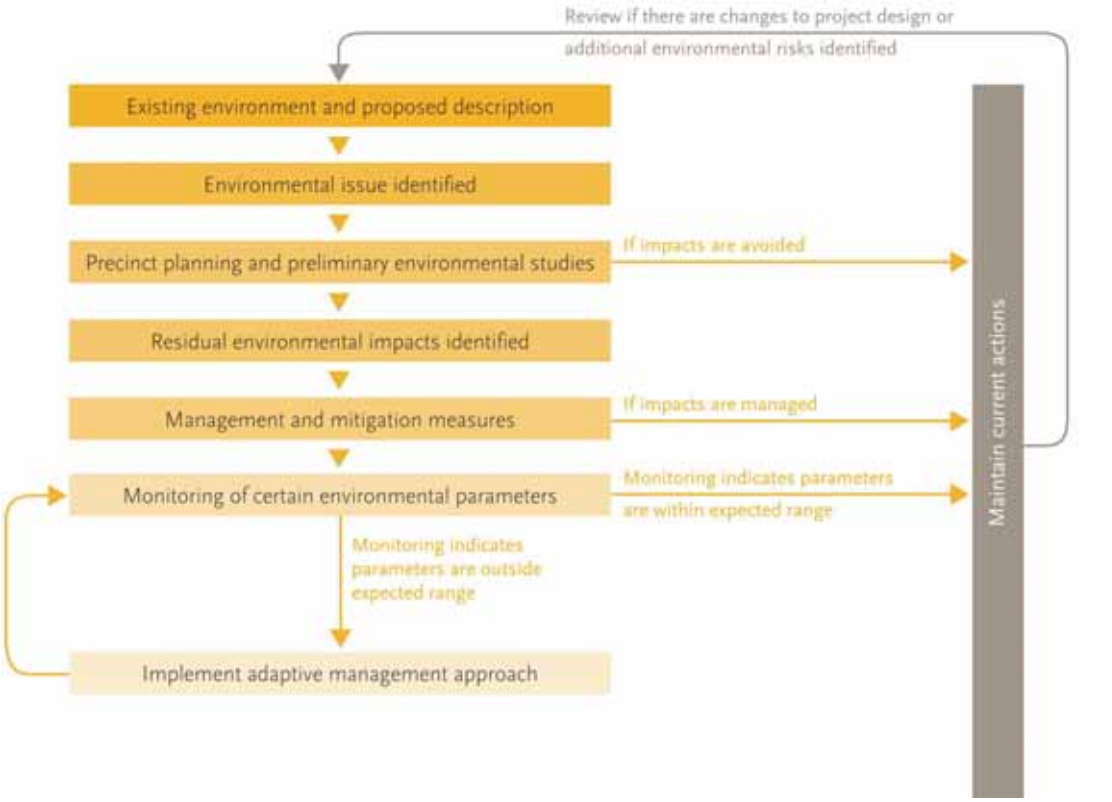
The OEMP has identified key environmental aspects based on earlier environmental assessment processes, recommends a range of mitigation measures and prescribes a program of monitoring, auditing and reporting that will allow for an adaptive management approach to the operation of the Googong Township IWC Project.

The program of monitoring (which includes monitoring detailed in the WMP) has been designed to identify and capture changes to the environment. In addition, auditing will help to identify non-conformances and ascertain whether mitigation measures are being effectively implemented.

The findings of the monitoring and audit reports for Stage A – Network will be collated annually by GTPL for consideration in consultation with the other operators and sub-contractors. This will allow for opportunities to improve the management of the IWC Project and inform later stages of operation. Such changes may result in changes to operations, to mitigation measures or monitoring/reporting requirements and other measures listed in this OEMP. The OEMP for Stage A – Network, the WMP and the Pink-tailed Worm-lizard Protection and Management Plan will be reviewed and updated on an annual basis as per the review process documented in Section 1.9.

The process used to assess and manage environmental issues is shown in Figure 12.

Figure 12 Adaptive management framework



9 Documentation

9.1 Environmental records

GTPL, ACTEW and QCC are responsible for maintaining environmental management records for Stage A – Network. Types of records include:

- All monitoring, inspection and compliance reports/records.
- Correspondence with government agencies.
- Induction and training records.
- Reports on environmental incidents, environmental non-conformances, complaints and close out actions.
- Environmental reporting as required by the contract documentation or the Compliance Tracking Program.
- Community engagement and stakeholder management information.

All environmental management documents are subject to ongoing review and continual improvement. This includes changes to legislative or licensing requirements.

Only the GTPL Assistant Project Director, or delegate, has the authority to change any of the environmental management documentation.

10 References

ANZECC & ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Published by Australian Water Association, Sydney.

DEC (2004) *Environmental Guidelines: Use of Effluent by Irrigation*. Published by Department of Environment and Conservation, Sydney.

DECC (2005) *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. Published by Department of Environment and Climate Change, Sydney.

DEC (2006a) *Assessment and Management of Odour from Stationary Sources in NSW.* Published by Department of Environment and Conservation, Sydney.

DEC (2006b) *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW.* Published by Department of Environment and Conservation, Sydney.

DECC (2007) *Environment Protection Manual Technical Bulletin – Bunding and Spill Management*. Published by Department of Environment and Climate Change, Sydney.

DECC (2008) *Waste Classification Guidelines*. Published by Department of Environment and Climate Change, Sydney.

DIPNR (2004) *Guideline for the Preparation of Environmental Management Plans*

EPA (2000) *NSW Industrial Noise Policy*. Published by Environment Protection Authority, Sydney.

EPA (2007) *Environmental Guidelines on the Use and Disposal of Biosolid Products.* Published by Environment Protection Authority, Sydney.

GTPL (2012) *Operation Management Plan Interim Sewage Service – Issue 2 December 2012.* Issued by GTPL, Canberra.

Manidis Roberts (2010) *Googong Township Water Cycle Project Environmental Assessment.* Prepared by Manidis Roberts on behalf of CIC Australia, Canberra.

Manidis Roberts (2011) *Googong Township Water Cycle Project Submissions Report*. Prepared by Manidis Roberts on behalf of CIC Australia, Canberra.

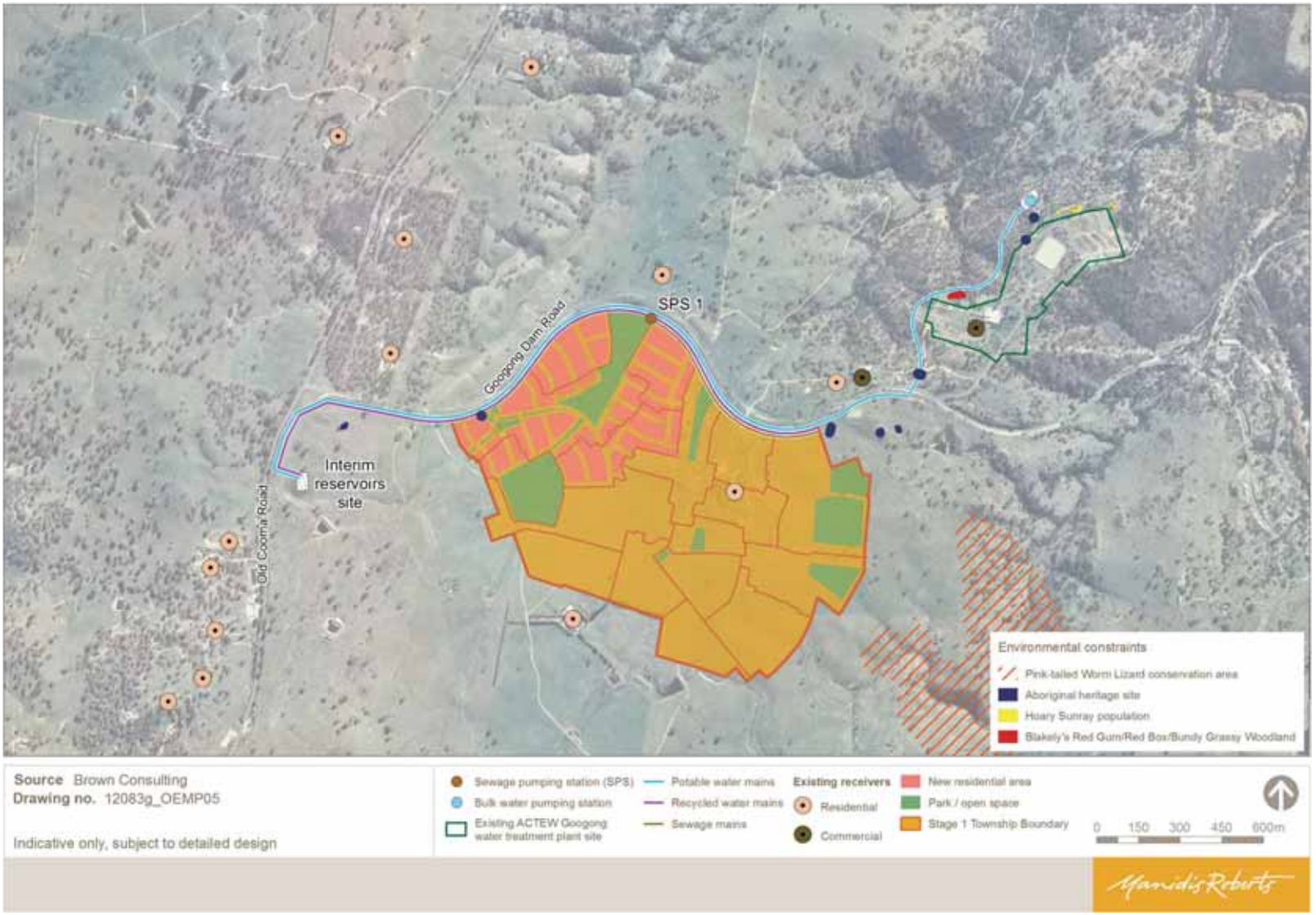
NHMRC and NRMMC (2004) *Australian Drinking Water Guidelines.* Published by the National Health and Medical Research Council and the Natural Resource Management Ministerial Council, Canberra.

NHMRC and NRMMC (2011) *Australian Drinking Water Guidelines 6.* Published by the National Health and Medical Research Council and the Natural Resource Management Ministerial Council, Canberra.

NRMMC, EPHC & AHMC (2006) *National Water Quality Management Strategy – Australian Guidelines for Water Recycling: Managing Health and Environmental Risks.* Published by Natural Resource Management Ministerial Council, Environment Protection and Heritage Council and the Australian Health Ministers' Conference, Canberra.

NSW Health (2012) *NSW Guidelines for Water Carters*. Published by NSW Health, NSW Food Authority, Sydney,

Appendix A Environmental Constraints Map


SPS 1
Googong Dam Road
Interim reservoirs site
Old Cooma Road
Environmental constraints
Pink-tailed Worm Lizard conservation area
Aboriginal heritage site
Hoary Sunray population
Blakely's Red Gum/Red Box/Bundy Grassy Woodland
Source Brown Consulting
Drawing no. 12083g_OEMP05
Indicative only, subject to detailed design
Sewage pumping station (SPS)
Bulk water pumping station
Existing ACTEW Googong water treatment plant site
Potable water mains
Recycled water mains
Sewage mains
Existing receivers
Residential
Commercial
New residential area
Park / open space
Stage 1 Township Boundary
0 150 300 450 600m
Mainidis Roberts

Appendix B Legal and other requirements

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
General				
Environmental Planning and Assessment Act, 1979 (EP&A Act)	All	Comply with the terms Minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	S75W	The Project has been approved under Part 3A of the EP&A Act subject to Conditions of Approval (CoA). The Project must comply with all CoA. Any changes not consistent with the Project Approval would require additional assessment and approval from the Minister.
Water				
Public Health Act 2010	Drinking water quality	Has requirements for suppliers of drinking water, including requiring drinking water to be fit for human consumption and requiring the establishment and adherence to a quality assurance program.	S15	The requirement to develop a Quality Assurance Program has also been included as a mitigation measure in Table 5 of Section 4.4 of this OEMP. This will be the responsibility of QCC (after handover of the interim reservoirs) to develop and implement.
Public Health Regulation 2012	Drinking water quality		Clause 34	
Local Government Act 1993	Supply of water	Approval from council is required to draw water from a council water supply.	S68	The Potable Water Tankering Contractor is required to obtain all necessary approvals and permits from QCC to take and transfer water and must carry out operations in accordance with the NSW Guidelines for Water Carters (NSW Health, 2012).

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Water Management Act 2000 (WM Act)	Water access and use	Do not take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the ground, and includes coastal waters) without an access licence. Do not use of water on land (unless supplied by a water utility, irrigation corporation etc or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S91A	The Project has been approved under Part 3A of the EP&A Act. Section 75U states that a water use approval under section 89, a water management work approval under section 90 or an activity approval under section 91 of the WM Act is not required. The Project will be carried out work consistent with the aims of the WM Act and consult with Office of Environment and Heritage (OEH)/NSW Office of Water (NOW) where required, regarding works in and around waterways.
Water Management Act 2000	Water management works	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	S90 S91B S91C S91D	
Water Management Act 2000	Waterfront land.	Do not deposit material, excavate, or remove material within a watercourse bank, shore or bed, or on land 40 metres inland, or interfere with the likely flow of water to such a body, without a controlled activity approval.	S91	
Water Act 1912 (Water Act) Note that this Act is being progressively repealed by the *Water Management Act 2000.*	Surface water	Obtain a licence or permit for construction or use of 'work' for purposes including the taking and using of water.	S21B	Should the Project seek to take and use surface water GTPL will seek a licence or permit for use.
	Groundwater	Obtain a licence where interference with groundwater is likely to occur.	S112 S121A	GTPL plan to sink bores for groundwater monitoring. A Groundwater Licence under Part 5 of the Act will be required.
Protection of the Environment Operations Act 1997 (POEO Act)	Water pollution	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of any EPA licence.	S120	The Project will be carried out in accordance with the POEO Act, where relevant. An Environment Protection Licence would be required for the transport of trackable waste (refer waste section).
Water Industry Competition Act 2006 (WIC Act)	Construction and operate water and wastewater facilities	Obtain a Network operator's licence prior to construction for construction maintenance and operation of water industry infrastructure.		QCC will operate the water and wastewater facilities, as such GTPL are not required to seek a Network operator's licence under the WIC Act.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Local Government Act 1993	Water supply	QCC are licensed under the LG Act as a water supply authority.	S60	They must carry out their activities in accordance with the Australian Drinking Water Guidelines (NHRMC & NRMMC, 2011) and the NSW Drinking Water Monitoring Program.
Noise				
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Do not operate plant if it emits noise caused by poor maintenance or operation.	S139	The Project will be carried out in accordance with the POEO Act, where relevant.
Protection of the Environment Operations Act 1997	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	The Project will be carried out in accordance with the POEO Act, where relevant.
Contaminated land				
Protection of the Environment Operations Act 1997	Land pollution	Do not cause or permit land pollution other than under authority of a licence or regulation. It is however not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.	S142A – S142E	The Project will be carried out in accordance with the POEO Act, where relevant.
Contaminated Land Management Act 1997 (CLM Act)	Reporting contamination	Notify the EPA if: • Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water. • Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land. • Contamination meets other criteria that may be prescribed by the regulations.	S60	The Project will be carried out in accordance with the CLM Act, where relevant.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Biodiversity				
Noxious Weeds Act 1993	Weed control	As a private landowner, control noxious weeds on the land as required under the control category or categories specified in relation to the weeds concerned. Notify relevant control authority within 3 days of becoming aware (or ought reasonably to have known) that a notifiable weed (W1 weed) is on land. Must not scatter or cause to scatter notifiable weed material.	S12 S16 S30	The Project will be carried out in accordance with the *Noxious Weeds Act 1993*, where relevant.
National Parks and Wildlife Act 1974 (NPW Act)	Native fauna	Do not harm any animal that is of a threatened species population or ecological community, or its habitat except in accordance with a planning approval.	Part 8A	The Project will be carried out in accordance with the NPW Act, where relevant.
		Do not harm critical habitat except as in accordance with a planning approval.	S98	The Project will be carried out in accordance with the NPW Act, where relevant.
		Do not harm native fauna (other than listed unprotected fauna) except in accordance with a planning approval or licence.	S120	The Project will be carried out in accordance with the NPW Act, where relevant.
National Parks and Wildlife Act 1974	Flora and native vegetation conservation	Do not pick protected native plants without a licence.	S117 S131	The Project will be carried out in accordance with the NPW Act, where relevant.
Native Vegetation Act 2003	Flora and native vegetation conservation	Only clear native vegetation in accordance with a planning approval or property vegetation plan.	S12	The Project has been approved under Part 3A of the EP&A Act 1979. Section 75U states that an authorisation to clear native vegetation or State protected land referred to in section 12 of the *Native Vegetation Act 2003* is not required. The Project will be carried out consistent with the aims of the Act and will consult with OEH where required, regarding clearing of native vegetation.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Fisheries Management Act 1994 (FM Act)	Dredging and reclamation	Do not carry out dredging or reclamation work except under the authority of a permit issued by the Minister.	S201	The Project has been approved under Part 3A of the EP&A Act. Section 75U states that a permit under section 201, 205 or 219 of the FM Act is not required.
Fisheries Management Act 1994 (FM Act)	Mangroves, seagrasses and marine vegetation	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	S205	
Fisheries Management Act 1994	Fish passage	Do not block fish passage without a permit	S219	
Environment Protection Biodiversity Conservation Act, 1999 (Commonwealth) (EPBC Act)	Flora and fauna conservation	Do not kill, injure or take a member of a listed threatened species without a permit.	Part 13	The Project will be carried out in accordance with the EPBC Act, where relevant.
		Comply with the terms of any EPBC Act approval for the project.		The Project was approved on 19 May 2011 (EPBC 2011/5829). The approval is subject to conditions. Refer Pink-tailed Worm-lizard Protection and Management Plan.
Waste				
Protection of the Environment Operations Act 1997	Littering	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Part 5.6A	The Project will be carried out in accordance with the POEO Act, where relevant.
Protection of the Environment Operations Act 1997 (POEO Act)	Transport of trackable waste	An EPL is required for transport of category 2 trackable waste, meaning the transport of category 2 trackable waste from New South Wales to a participating State, into New South Wales from a participating State or through New South Wales from one participating State to another.	Schedule 1 Clause 48(b)	An EPL will be required by the trucking contractor for the transport of sewage across state and territory borders.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Local Government Act 1993	Management of waste	Obtain approval to dispose of waste into a sewer of the council.	S68	An application for a Liquid Trade Waste Approval/Agreement will be required for the disposal of sewage to QCC facilities during operation.
Utilities Act 2000 (ACT)	Prohibited substances—water or sewerage network	Obtain approval to introduce a substance which is likely to interfere with the sewerage network or a network facility, or form compounds that would be likely to do so.	S127(1)	An Application for Non-Domestic Discharge to the Sewer will be required for the disposal of sewage to ACTEW facilities during operation.
Protection of the Environment Operations Act 1997	Waste and transportation	Only transport waste to a facility that can lawfully accept the waste.	S143	The Project will be carried out in accordance with the POEO Act, where relevant.
		Do not dispose of waste in a manner that harms or is likely to harm the environment.	S115	The Project will be carried out in accordance with the POEO Act, where relevant.
Protection of the Environment Operations (Waste) Regulation 2005	Waste and transportation	Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	Regulation cl.49	The Project will be carried out in accordance with the POEO Act, where relevant.
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Regulation Part 3	The Project will be carried out in accordance with the POEO Act, where relevant.
National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 1998	Waste and transportation across Australian state and territory borders.	Obtain consignment authorisation from the relevant authority prior to transporting waste across Australian state and territory borders.	All	Correspondence from the ACT Government on 11/06/2013 granted a geographical exemption for the movement of a controlled waste (NEPM waste code K130) from the Googong Township to the QCC Sewage Treatment Plan in the ACT. A valid consignment authorisation number must still be obtained prior to the movement of any material.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Heritage				
Heritage Act 1977 (Heritage Act)	Heritage	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	S56-57	The Project has been approved under Part 3A of the EP&A Act. Section 75U states that an approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977 is not required. The Project will be carried out in consistent with the aims of the Heritage Act.
		Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or Do not disturb or excavate land on where a relic has been discovered or exposed.	S139	The Project has been approved under Part 3A of the EP&A Act. Section 75U states that an approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977 is not required. The Project will be carried out in consistent with the aims of the Heritage Act.
		Notify the heritage Council on discovery of a relic	S146	Under Section146 of the Heritage Act the Heritage Council may need to be notified should a 'relic' be found which has not been previously identified in the EA. This requirement is not removed by Part 3A approval.
National Parks and Wildlife Act 1974	Aboriginal places and objects	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	S86 S90	The Project will be carried out in accordance with the NPW Act, where relevant.
		Notify the OEH and DP&I within reasonable time of becoming aware of the location or discovery of all new or unrecorded Aboriginal objects.	S89A	The Project will be carried out in accordance with the NPW Act, where relevant.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Report any discovery of Aboriginal remains to the Federal Minister for the Sustainability, Environment, Water, Population and Communities.	S20	The Project will be carried out in accordance with the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, where relevant.
		Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.
General				
Protection of the Environment Operations Act 1997	Harming the environment	Do not risk harming the environment by wilfully or negligently: • disposing of waste unlawfully. • causing any substance to leak, spill or otherwise escape (whether or not from a container); or • emitting an ozone depleting substance	S115 S116 S117	The Project will be carried out in accordance with the POEO Act, where relevant.
Protection of the Environment Operations Act 1997	Control equipment	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices).	S167	The Project will be carried out in accordance with the POEO Act, where relevant.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Protection of the Environment Operations Act 1997	Notification of pollution incidents	Pollution incidents posing material harm to the environment should be notified to each 'relevant authority' as defined in section 148(8) of the POEO Act. 'Relevant authority' means: • the appropriate regulatory authority (ARA) (ie DP&I) • the Environment Protection Authority (EPA) • the Ministry of Health • the WorkCover Authority • the local authority, (ie QCC) • Fire and Rescue NSW.	S148	The Project will be carried out in accordance with the POEO Act, where relevant.
Protection of the Environment Operations Act 1997	Site licensing	Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA.	S47 S48	The Project will be carried out in accordance with the POEO Act, where relevant.
Environmentally Hazardous Chemicals Act 1985	Hazards and risks	Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes. Codes of practice for the Storage and Handling of Corrosive substances is required.		The Project will be carried out in accordance with the *Environmentally Hazardous Chemicals Act 1985*, where relevant.
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Ensure that dangerous goods are transported in a safe manner.	S9	The Project will be carried out in accordance with the *Dangerous Goods (Road and Rail Transport) Act 2008*, where relevant.

Act	Activity/aspect	Requirement	Reference	Applicability to the Project
Pesticides Act 1999	Hazards and risks	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	S12 S13 S14 S15 S17	The Project will be carried out in accordance with the *Pesticides Act 1999*, where relevant.
State Emergency and Rescue Management Act 1989	Hazards and risks	Manage risks in emergency and/or maintenance situations at key infrastructure (in this case bush fire, flood or similar natural disaster) (SoC R2).		The Project will be carried out in accordance with the *State Emergency and Rescue Management Act 1989* where relevant in relation to emergency preparedness and response.
Rural Fires Act 1997 and the Rural Fires Regulation 2002	Hazards and risks	Manage risks in emergency and/or maintenance situations at key infrastructure (in this case bush fire, flood or similar natural disaster).		The Project will be carried out in accordance with the *Rural Fires Act 1997* where relevant – in relation to emergency situation management.
National Greenhouse and Energy Reporting Act, 2007 and Regulations 2008	Greenhouse gas emissions	Requires that larger energy users and greenhouse gas (GHG) emitters that trigger a certain level of direct GHG emissions, or total energy produced or consumed must report on GHG emissions to the OEH. Applicability dependent on thresholds.		The *National Greenhouse and Energy Reporting Act 2007* (the NGER Act) is a unified framework for the reporting of greenhouse gas emissions (GHGs) and energy use for significant corporation emitters of greater than 50kt CO2-e and energy consumption of 200Tj. GTPL is not required to report under the NGER Act as they do not meet the required threshold.

Appendix C Environment policies

Environment policy

The following is the CIC Corporate Environmental Policy, as adopted by Googong Township Proprietary Limited (GTPL).

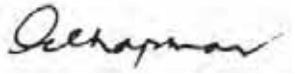
CIC is committed to a high standard of environmental management practice. To achieve this objective any consultants or contractors engaged by CIC shall provide an Environmental Management Plan that covers the following requirements as appropriate;

The Consultant or Contractor must implement an Environment Management Plan that:

- Acknowledges the potential impact of activities, products or services on the environment;
- Includes an environmental policy that has the total support of management involved in the works;
- Has planning processes and procedures in place that have the capacity to identify possible environmental impacts;
- Has planning processes and procedures in place to develop mitigation measures to minimise environmental impacts;
- Establishes responsibilities and procedures for implementing required mitigation measures;
- Establishes systems and procedures to review the implementation process.
- Establishes a process of management review of systems and procedures that support the environmental policy and which will lead to continually improving performance.

POLICY:-	
Policy No:	
Policy Title:	Sustainability Policy
Date Policy was adopted by Council:	27 July 2011
Resolution Number:	180/11
Previous Policy Review Date:	
Next Policy Review Date:	Annually
PROCEDURES/GUIDELINES:-	
Date Procedure/Guideline (if any) was developed:	
RECORDS:-	
Container Reference in TRIM: Policy	SF080616
Container Reference in TRIM: Procedure	
Other locations of Policy:	Intranet (linked to TRIM Container)
Other locations of Procedures/Guidelines:	SF100630
DELEGATION (if any):-	
RESPONSIBILITY:-	
Draft Policy developed by:	Kaya Michener
Committees (if any) consulted in the development of the Draft Policy:	Smarter Action Squad – Council's Sustainability Working Group
Responsibility for Implementation:	All employees and Councillors
Responsibility for Review of Policy:	Manager Environment and Health

INTEGRATED PLANNING FRAMEWORK:	
Community Strategic Plan:	Strategic Priority No. 7
Delivery Program Title:	State of the Environment and Sustainability
Operational Plan:	Program No. 521

Senior Authorizing Officer	**Position**	**Signature/Date**
	General Manager	 28 July 2011

ACTION	COUNCIL MEETING DATE	RESOLUTION NUMBER	REPORT ITEM NUMBER
NEW/RECOMMENDATION/ AMENDED			
New	27/07/2011	180/11	Item 6

DATE REVIEWED	REVIEWER POSITION	REVIEWER NAME

1. OUTCOMES:

The aim of this policy is to provide a clear statement of Queanbeyan City Council's commitment to progressing towards Sustainability.

2. POLICY:

Council acknowledges it has a responsibility and key role to play in promoting and implementing Sustainable Development (operations and practices).

Council will strengthen, adjust and build internal management frameworks that ensure sustainability performance improvement is integrated as a core part of Council's strategic and operational management via effective integrated management plans, specific action plans, training, communication, monitoring and reporting.

Council will systematically review its internal policies, Ecologically Sustainable Development (ESD) performance, processes and practices to further build the organisation's capacity to deliver ongoing triple bottom line performance improvement within its own operations.

3. DEFINITIONS

Sustainable development, as defined by the Brundtland Commission (1987), is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Sustainability, Sustainable Development and Ecologically Sustainable Development (ESD) are used interchangeably.

'Sustainable Development' when used in the context of Council refers to all our operations and practices and is much broader than the term 'Development' used to describe the use of land and work on buildings.

Triple Bottom Line Reporting (or Quadruple) looks at the Financial, Environmental Social and Governance effects of our actions.

4 LEGISLATIVE OBLIGATIONS AND/OR RELEVANT STANDARDS

Local Government Act 1993

Section 7e "purposes of the Act" requires "*Councils, Councillors and Council employees to have regard to ESD principles in carrying out all of their responsibilities*".

Section 8 of the Local Government Act 1993 (as amended 1997) sets out the charter of a local council in NSW and includes the requirement for a council to "*properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible in a manner which is consistent with and promotes the principles of Ecological Sustainable Development and "have regard to the long term and cumulative effect of its decisions*".

The Environmental Planning and Assessment Act 1979 objectives include "encouraging ecological sustainable development".

5 CONTENT:

Queanbeyan City Council will work to lead the region by example in sustainable practices. This will include (but not be limited to): water use, energy use, waste management, fleet management, sustainable procurement, natural resource management, pollution control, environmental compliance, parks management.

Council's commitment to applying the principles of sustainability to all decision making, functions and activities is underpinned by the principles adopted by all levels of government in Australia in the 1992 ESD National Strategy. These are:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- the global dimension of environmental impacts of actions and policies should be recognised and considered
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised

- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms
- decisions and actions should provide for broad community involvement on issues which affect them

6 PERFORMANCE INDICATOR

Our progress in improving our sustainability will be monitored, reported on and evaluated through systems already in place including: Annual reporting and State of the Environment Reporting – as well as additional measures (e.g. reporting regularly to the community and staff on GHG monitoring).

Specific performance indicators will also be further developed and incorporated into our existing reporting: e.g. Tonnes GHG emissions per year and percentage reduction, water quality and consumption, green criteria in purchasing, waste tonnage diverted from landfill, levels of staff and community awareness and understanding of sustainability issues.

Policy

Environment

1. Purpose

ACTEW Corporation provides water and sewerage services to the ACT region.

ACTEW Corporation's vision is to be a leader in the sustainable provision of water and wastewater services with a focus on:

- Safety
- Security
- Sustainability, and
- Efficiency.

ACTEW Corporation will achieve this vision through the effective integration of environmental, social, financial and technical considerations in all decision-making processes with an aim to maximise value to our customers.

2. Scope

The consideration of the natural environment is fundamental in our business activities. Every person conducting or undertaking business on behalf of ACTEW Corporation has a responsibility to comply with this policy. The policy applies to all ACTEW Water activities in Commonwealth, ACT and NSW jurisdictions.

3. Policy

3.1 Ecologically Sustainable Development

ACTEW Corporation will conduct its business in line with the principles of Ecologically Sustainable Development (ESD); namely:

- *the precautionary principle* – reduce the chance of serious environmental problems even if we are not sure that these problems will occur;
- *the inter-generational equity principle* – reduce the effects of activities on the environment that the community, both present and future, relies on to meet its needs and expectations;
- *conservation of biological diversity and ecological integrity* – maintain or enhance the range of native plants and animals and the health of natural areas; and
- *improved valuation and pricing of environmental resources* – improve the way we undertake valuation of environmental costs and benefits and use this information when making decisions.

3.2 How we will meet our responsibilities

In order to implement our activities in an environmentally responsible and sustainable manner we will:

- meet all environmental regulations and standards;
- mitigate and manage environmental impacts and pollution from all ACTEW Corporation's activities;
- collate meaningful environmental data relating to the condition of waterways and water supply catchments to help inform management decisions;
- manage water catchments to ensure high quality source water and balance urban and ecological water supply;
- continually improve environmental performance and transparent reporting;
- reduce greenhouse gas emissions from the business to achieve ACT Government targets;
- identify and address emerging environmental risks and issues which may affect operations.

ACTEW Corporation will pursue achievement of these commitments through its Environmental Management System (EMS).

4. Referenced Documents

Legislative requirements directly related to this policy are outlined in the EMS Legal Register, of particular importance is the Territory-owned Corporations Act 1990 (ACT) which requires ACTEW Corporation to operate in accordance with the object of ESD.

This policy is compliant with requirements of the AS/NZS ISO 14001 standard. The ACTEW Corporation Integrated Management System (IMS) provides the framework for developing, implementing, monitoring and reviewing the environmental objectives of this policy.

5. Definitions

Environment is defined in Section 528 of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC) Act as:

(a) ecosystems and their constituent parts, including people and communities; and

(b) natural and physical resources; and

(c) the qualities and characteristics of locations, places and areas; and

(d) Heritage values of places; and

(e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), or (c).

The ACT Government targets in relation to greenhouse gas emission reduction are set out in the *Climate Change and Greenhouse Gas Reduction Act 2010* and include:

- a 40 per cent reduction of 1990 emission levels by 2020;
- a 80 per cent reduction of 1990 emission levels by 2050;
- be Carbon neutral by 2060; and
- achieve 15 per cent renewable energy supply by 2012, increasing to 25 per cent by 2020.

Appendix D Risk register

D.1 Risk analysis background

The environmental risk assessment has been performed in accordance with the principles of AS/NZS4360:2004. This risk assessment was used to confirm the key issues and identify the scope of environmental impact mitigation and management measures required for construction of Stage A – Network. The risk assessment focused on the following issues, as identified in the Environmental Assessment (EA):

- Water quality and hydrology.
- Soils.
- Groundwater.
- Ecology.
- Heritage.
- Traffic and access.
- Waste.
- Air quality
- Noise and vibration.
- Hazards and risk.
- Visual amenity.
- Socio-economic.
- Community.
- Utilities and services.
- Incident management.
- Legislative approvals.

For each issue, associated risks (impacts) have been identified. The relative level of risk was assessed and ranked using the risk analysis matrix presented below. Each environmental risk is categorised based on:

- The environmental aspect.
- Relative scale of the potential impact (refer Table 8).
- Type of potential impact.
- Likelihood of occurrence (refer Table 9).

Table 8 Risk assessment consequence definitions

Consequence level	Definition
Extreme	• Would result in a major prosecution under relevant environmental legislation. • Would cause long-term and irreversible impacts.
Major	• Would result in a fine or equivalent under relevant environmental legislation. • Would cause medium-long-term, potentially irreversible impacts.
Moderate	• Would result in a medium-term, reversible impact.
Minor	• Would result in short-term, reversible impact.
Insignificant	• Would not result in any perceptible impacts.

The second descriptor of risk identifies the frequency of activities that may cause the impact and the probability of the impact occurring during that activity, the likelihood level is outlined in Table 9.

Table 9 Risk assessment likelihood definitions

Likelihood level	Definition
Almost certain	The impact is expected to occur in most circumstances.
Likely	The impact will probably occur in most circumstances.
Possible	The impact will probably occur at some time.
Unlikely	The impact could occur at some time.
Rare	The impact may only occur in exceptional circumstances.

When both the descriptors of risk have been identified for each potential impact the level of risk is determined using the risk matrix in Table 10.

Table 10 Risk matrix

		Consequences				
		Insignificant	Minor	Moderate	Major	Extreme
Likelihood	Almost certain	Moderate	Significant	High	High	High
	Likely	Moderate	Significant	Significant	High	High
	Possible	Low	Moderate	Significant	Significant	High
	Unlikely	Low	Low	Moderate	Significant	Significant
	Rare	Low	Low	Low	Moderate	Moderate

D.2 Risk analysis for operation of Stage A Network

Table 11 outlines the results from the environmental risk assessment by displaying the recognised risks and the associated risk rating (before and after implementation of the mitigation and management measures included in Table 5 of this OEMP. This risk assessment has considered the mitigation measures that are included in Table 5.

Rating key

- High
- Significant
- Moderate
- Low

Table 11 Risk assessment results for operation of Stage A – Network

No	Risk	Risk rating – before mitigation			Risk rating – after mitigation		
		Likelihood	Consequences	Rating	Likelihood	Consequences	Rating
Water quality							
1	Poor water quality discharges from WRP if treatment design fails, leading to reduced water quality in receiving waters.	Unlikely	Major		N/A	N/A	
2	Failure in treatment system, leading to discharge of poor quality recycled water and consequent reduced receiving water quality (quality related).	Rare	Major		N/A	N/A	
3	Failure in IWC system (including for interim sewer services ie pumping out at SPS1), leading to overflow and reduced receiving water quality (quantity related).	Rare	Extreme		Rare	Major	
4	Spills of pollutants (chemicals for operation, eg chlorine, fuels) causing pollution of receiving waters.	Rare	Major		Rare	Moderate	

No	Risk	Risk rating – before mitigation			Risk rating – after mitigation		
		Likelihood	Consequences	Rating	Likelihood	Consequences	Rating
5	Impact on quality of groundwater sources due to irrigation with recycled water.	Unlikely	Moderate		N/A	N/A	
6	Impact on quality of groundwater sources due to irrigation with potable water.	Unlikely	Moderate		Rare	Moderate	
Hydrology							
1	Changes in flows in receiving waters due to discharges of recycled water within stormwater flows.	Almost certain	Insignificant		N/A	N/A	
2	Changes in flows in receiving waters due to discharges of potable water within stormwater flows.	Unlikely	Insignificant		Unlikely	Insignificant	
3	Changed geomorphology of receiving water beds due to recycled water discharges (increased flows).	Unlikely	Moderate		N/A	N/A	
4	Changed geomorphology of receiving water beds due to potable water discharges (increased flows).	Unlikely	Moderate		Unlikely	Minor	
Heritage (Indigenous and non-Indigenous)							
1	Impacts on unidentified sites that are of heritage or recreational value.	Rare	Extreme		Rare	Moderate	
2	Impacts on identified sites that are of heritage or recreational value.	Unlikely	Major		Rare	Major	
Geology and soils/geomorphology							
1	Contamination of soils due to irrigation of public areas with recycled water.	Unlikely	Major		N/A	N/A	
2	Contamination of soils due to irrigation of public areas with potable water.	Unlikely	Major		Rare	Moderate	

No	Risk	Risk rating – before mitigation			Risk rating – after mitigation		
		Likelihood	Consequences	Rating	Likelihood	Consequences	Rating
Air quality (greenhouse gases, dust and odour)							
1	Increase in greenhouse gas emissions (from operation vehicles, plant and equipment; and fugitive emissions during operation).	Almost certain	Insignificant		Almost certain	Insignificant	
2	Odour emissions from WRP, leading to adverse impact on air quality (and amenity).	Possible	Major		N/A	N/A	
3	Odour emissions from malfunctions anywhere in the treatment and distribution system.	Possible	Major		Unlikely	Major	
Biodiversity							
1	Adverse impacts on threatened species (NSW/Cth) and Endangered Ecological Communities (EECs).	Unlikely	Major		Rare	Major	
2	Further migration of weeds (noxious and environmental) within disturbed areas.	Unlikely	Moderate		Unlikely	Moderate	
3	Increased active erosion and scouring, and loss of riparian vegetation in creeks due to increased flows.	Unlikely	Minor		Rare	Minor	
4	Impacts on downstream ecology due to changed hydrology in creeks.	Unlikely	Moderate		N/A	N/A	
5	Changes to water quality (alkalinity, conductivity and turbidity conditions) may create changes in aquatic ecology.	Possible	Major		N/A	N/A	

No	Risk	Risk rating – before mitigation			Risk rating – after mitigation		
		Likelihood	Consequences	Rating	Likelihood	Consequences	Rating
Traffic and access							
1	Traffic impacts due to interaction with other construction vehicles and other necessary deliveries/maintenance.	Almost certain	Minor		Almost certain	Minor	
Visual amenity and landscape urban/design							
1	Negative impact on visual amenity due to presence of infrastructure.	Almost certain	Major		Possible	Major	
Noise and vibration							
1	Noise and vibration impacts from operation of pumping stations and the WRP.	Almost certain	Moderate		Unlikely	Moderate	
2	Noise sourced from tanker and truck movements for removal of sewage and delivery of potable water.	Likely	Moderate		Likely	Minor	
Utilities and services							
1	Negative impacts on other major projects, infrastructure or land use in the area.	Rare	Minor		Rare	Minor	
Waste							
1	Impacts related to the trucking of liquid waste, specifically not having appropriate approvals to dispose of waste at a licensed facility.	Almost certain	Major		Unlikely	Moderate	
2	Sewage is not of an acceptable quality, or receiving STP is unable to accept the waste due to infrastructure limits.	Unlikely	Moderate		Rare	Moderate	
3	Impacts related to biosoild removal.	Almost certain	Minor		N/A	N/A	
Socio-economic							
1	Impacts on recreational use at various nearby sites during operation.	Possible	Insignificant		Rare	Insignificant	

No	Risk	Risk rating – before mitigation			Risk rating – after mitigation		
		Likelihood	Consequences	Rating	Likelihood	Consequences	Rating
Hazards and risks (including human health)							
1	Safety hazards and risks during operation (eg bushfire, power outages, chemical spills, traffic accidents).	Possible	Extreme		Unlikely	Extreme	
2	Risk to human health via pathways of exposure of recycled water.	Possible	Major		N/A	N/A	
3	Risk to human health due to inadequately treated potable water.	Rare	Major		Rare	Major	
4	Contamination of land or soils due to chemical spills.	Unlikely	Major		Rare	Major	

Appendix E

Traffic Management Plan for sewage tankering

EFFLUENT TRANSPORT GOOGONG TOWNSHIP TO QUEANBEYAN STP

INTRODUCTION

Transpacific has been contracted by Googong Township Pty Ltd (GTPL) to collect effluent from the Googong Township at Sewage Pumping Station (SPS) 1 and transport loads to Queanbeyan Sewage Treatment Plant (STP) for processing. A maximum of nine return trips will be made each day. This Traffic Management Plan outlines traffic considerations for this activity.

Googong SPS1 site: Effluent is pumped from SPS1 on site into the tanker and then transported to Queanbeyan STP located about 14 km in the ACT.

The Project Manager is Chris Blackett, available on **0434 368 018**.

Please **notify the Project Manager if**:

1. Site conditions change; and/or
2. This Work Instruction is incorrect.

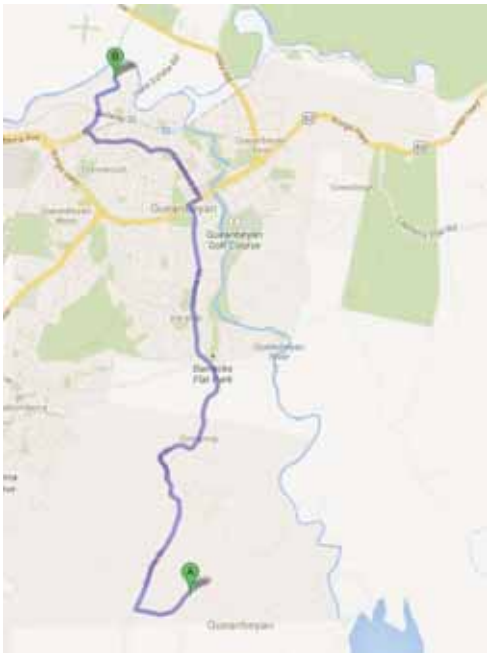
SPECIFIC TRANSPORT ROUTE

The following transport route has been formulated in conjunction with Queanbeyan City Council who operate the Queanbeyan STP and who have discussed the arrangements with OEH as well as the EPA in Canberra. It has been formulated to have minimum effect on the local residents with regards to noise, and traffic movements.

Googong to Queanbeyan designated route

Head south-west on **Googong Rd** towards **Cooma St**
Turn right onto **Cooma St**
At the roundabout, take the 1st exit onto **Lowe St**
Turn right onto **Kings Hwy/National Route 52**
Take the 1st left onto **Crawford St**
Continue onto **Uriarra Rd**
Turn right onto **Railway St**
Slight left onto **Mountain Rd**
Turn left at **Nimrod Rd** to enter Queanbeyan STP

Return to Googong SPS1 in the reverse direction.



SPECIAL NOTES

- Under no circumstances shall trucks deviate from this transport route.
- All tanker movements shall be undertaken between the hours of 7:00AM and 6:00PM as per the requirements of Queanbeyan City Council.
- Tankers will travel for about 800 m past the tanker parking bay to the Googong Foreshores boundary to turn around and travel back along Googong Dam Road to enter the tanker parking bay (see photo below).
- Tankers will park only in the designated tanker parking bay and not on Googong Dam Road.
- Tankers will have regard for other construction vehicles in the area and follow other traffic instructions as required.
- 40 km/hr School Zones apply 8:00AM to 9:30AM and 2:30PM to 4:00PM on school days. This applies to the school on Lowe Street.

MATERIALS REQUIRED

- Heavy vehicle prime mover and trailer.
- Googong & Queanbeyan Transfer Docket book.

OTHER REQUIREMENTS

- JSEA Job Safety and Environmental Analysis for collection and transport of liquid waste;
- Transpacific Transport Induction; and
- Project contact phone number listing.

Appendix F

Standard Operating Procedure for sewage tankering

EMERGENCY PROCEDURE GUIDE FOR DRIVER OPERATIONS

IF EMERGENCY SERVICES

IN AUSTRALIA: **Telephone 000 from a fixed line or 112 from a mobile phone;**

INTERNAL CONTACTS

POSITION	NAME	DIRECT CONTACT
Branch Manager	Glenn Horne	0408 010 044
Water Treatment Plant Manager	Chris Blackett	0419 891 009
On Call Supervisor		42752222
OH&S Coordinator	David Brinson	O439 463 143

EXTERNAL EMERGENCY CONTACT

CONTACTS		EMERGENCY NUMBER
Police, Fire, Ambulance	Australia	000 from a fixed line or 112 from a mobile
Poisons Hotline	Australia	13 11 26
Environmental Authority	Environmental Protection Agency	13 15 55
Energy Authority	Integral Energy	131 003
Water Authority	Sydney Water	132 090

VEHICLE ACCIDENT

SECURE YOUR VEHICLE – TURN OFF YOUR ENGINE – ACTIVATE HAZARD LIGHTS

In Situations where there is an injured person:

- Call Emergency Services;
- Contact your Supervisor immediately;
- ONLY IF SAFE TO DO SO, render assistance to injured person;
- Seek help from bystanders;
- Remain at scene until Emergency Services arrive.

In situations where there is property and/or vehicle damage:

- Contact your supervisor immediately
- Call Emergency Services;
- DO NOT ADMIT LIABILITY OR FAULT TO THIRD PARTIES;
- Do not allow the Company vehicle to be towed away unless you are directed by the police or your supervisor to do so;
- Your supervisor or Business Unit Manger must report the incident to the authorities;
- DO NOT SPEAK OR MAKE COMMENT TO THE MEDIA.

Use the Accident Detail form, attached to the flipchart and obtain details of injured persons, witnesses, property owners, and other relevant parties.

CONTACT WITH OVERHEARD WIRES

ASSUME ALL WIRES ARE LIVE

WHEN IT IS SUSPECTED THAT THE VEHICLE HAS MADE CONTACT WITH AN OVERHEAD WIRE OF ANY TYPE THE DRIVER AND ANY OTHER OCCUPANTS ARE TO REMAIN INSIDE THE CABIN

- WARN persons outside the vehicle to keep at least 10 metres away from the vehicle and not to touch any part of the vehicle;
- Call Emergency Services;
- Contact your supervisor immediately;
- DO NOT attempt to move or disentangle the vehicle from the overhead wire;
- Remain in the cabin until the power has been confirmed isolated by authorities;

ONLY IF YOU MUST LEAVE THE VEHICLE CABIN FOR ANY LIFE THREATENING REASON, ENSURE YOU:

- Jump clear from vehicle;
- DO NOT touch the vehicle and the ground at the same time;
- Try to land on both feet simultaneously, and avoid touching the ground with your hands;
- When moving away from the vehicle jump (like a kangaroo) landing on both feet – for at least a distance of 10 metres from the vehicle.

Prior to driving the vehicle from the incident site, a mechanic must deem the vehicle is roadworthy and in a safe condition to drive.

VEHICLE FIRE

IN THE EVENT OF FIRE IN THE BACK OF VEHICLE:

- As soon as detected pull over to a safe area;
- Call Emergency Services;
- Tell Emergency Services: “FIRE, I AM DRIVING A WASTE COLLECTION VEHICLE”;
- Follow instructions of Emergency Services.

COMPACTION VEHICLE:

Plush blade against load to maintain compaction and do not open hopper lid.

LIQUID VEHICLE:

Stop Product flow. If safe to do so, close all valves, hatches, caps etc.

- If required, move to a safer location;
- Shut down the vehicle, activate hazard lights;
- Exit the vehicle and move to a safe area;
- If it is safe to do so, use a fire extinguisher;
- Await the arrival of Emergency Services;
- Do not eject load until advised to do so;
- Contact your supervisor as soon as possible.

In the event of an engine, cabin or tyre fire:

- As soon as detected call Emergency Services;
- Shut down the vehicle and move to a safe location;
- If it is safe to do so, use the vehicle fire extinguisher;
- If unable to control the fire, evacuate immediate area and keep upwind;
- Ensure area remains safe from other persons or traffic;
- Contact your supervisor as soon as practicable.

BUSH FIRE

IF YOU ARE IN YOUR VEHICLE AND ARE CAUGHT IN A BUSH FIRE:

- DO NOT LEAVE YOUR VEHICLE;
- Call Emergency Services;
- Tell Emergency Services of your location and your situation (e.g. fire behind and in front), and inform them of the load you are carrying (e.g. combustible material)
- Contact your Supervisor immediately.
- Close all windows, vents and turn on the headlights;
- Lie down on the floor and cover yourself to shield you from radiant heat (e.g. coat, blanket);
- Stay in the vehicle until the fire front has passed;
- Try to stay hydrated by drinking water;
- Contact your supervisor as soon as possible.

IN THE EVENT IT IS NECESSARY TO LEAVE THE VEHICLE:

- Dismount clear from the vehicle;
- Stay close to the ground;
- Choose an area where there is little burning material on the ground;
- Cover you face as much as possible;
- Contact Emergency Services and advise of you situation;
- Contact your Supervisor as soon as practicable and advise of your situation.

MEDICAL EMERGENCY

IF YOU RE NOT A TRAINED FIRST AIDER DO NOT PROVIED FIRST AID

ALWAYS ENSURE THE SAFETY OF YOURSELF AND OTHERS BEFORE RENDERING ASSISTANCE

IN A SITUATION WHERE THERE IS A PERSON REQUIRING MEDICAL ASSISTANCE:

- Call Emergency Services;
- Tell Emergency Services of your location and the situation (e.g. how many injured);
- Contact your Supervisor immediately;
- If appropriate seek assistance from bystanders;
- If it is safe to do so, and you are trained in first aid, render assistance until Emergency Services arrive.

IN A SITUATION WHERE THERE IS EXTERNAL BLEEDING:

- Use a pressure pad from the first aid kit to cover the wound;
- Secure the pressure pad firmly with a bandage;
- Seek further medical assistance.

MEDICAL ASSISTANCE FOR A NEEDLE/SHARP OBJECT INJURY:

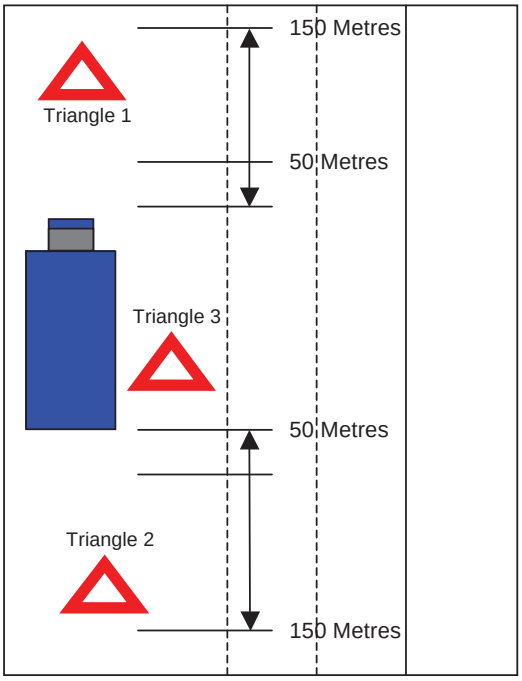
- Flush the area thoroughly using water continuously for approximately ten (10) minutes;
- Encourage the wound to bleed by gently squeezing it;
- If possible, take the needle/syringe to the doctor;
- Contact your supervisor immediately;
- Further medical advice will be recommended;
- REMEMBER: DO NOT PANIC

ROADSIDE BREAKDOWN

ALWAYS ENSURE THE SAFETY OF YOURSELF AND OTHERS IF YOU HAVE A VEHICLE BREAK DOWN

IF YOUR VEHICLE HAS BECOME DEFECTIVE AND BY DRIVING OR OPERATING THE VEHICLE MAY CAUSE FURTHER MECHANICAL DAMAGE, OR IT BECOMES UNSAFE:

- If possible, move the vehicle onto the side of the road or a part of the road not used as the main traffic area;
- Park the vehicle, and turn off the engine;
- Activate the hazard waring lights;
- Contact your Supervisor to arrange roadside assistance;
- Use the portable warning triangles in accordance with the road rules;
- DO NOT put yourself into an unsafe position;
- Avoid directing traffic unless you have no other choice – in this situation you must wear a reflective vest.



If your vehicle breaks down – warning triangles

A vehicle or a vehicle and trailer with GVM of more then 120 tonnes, must carry three portable warning triangles.

If a vehicle required to carry warning triangles stops on a road and is not visible for 200 metres in all directions, the driver must put one triangle at the front and one at the rear of the vehicle 50 to 150 Metres away. The third triangle is to be put at the side of the vehicles nearest to the centre of the road.

PERSONAL THREAT

IN ANY THREATENING SITUATION – DO NOT PUT YOURSELF IN DANGER. REMAIN CALM AND TRY TO CALM THE PERSON DEPENDING ON THE SITUATION.

IN A SITUATION WHERE YOU HAVE ENCOUNTERED A PERSON OF A THREATENING NATURE:

- If in the vehicle – DO NOT GET OUT;
- Drive off and ignore the person if you have the opportunity, don't get into an argument;
- Lock the vehicle and close the windows if necessary;
- Stay as calm as possible;
- Do not confront the person;
- Try to avoid the situation – use calming and helpful works, e.g. "I'll see if I can get someone else to help";
- Call Emergency Services to inform the Police if necessary;
- Contact your supervisor to inform them of the situation.

IN A SITUATION WHERE THERE IS A SUSPICIOUS PACKAGE:

- DO NOT touch, tilt or tamper with the package;
- Ask is someone owns the package if appropriate;
- Call Emergency Services to inform them of the situation;
- If required inform other persons in the area to stay clear of the area;
- Assist Emergency Services as required on their arrival.

TIPS TO REMEMBER

- **TAKE ALL THREATS SERIOUSLY EVEN IF THEY ARE CASUAL REMARKS.**
- **BE AWARE OF WARNING SIGNS – TRUST OUR INTUITION.**
- **ATTITUDE IS IMPORTANT.**
- **ALWAYS TREAT OTHER WITH RESPECT – BE RESPECTFUL NOT SARCASTIC.**
- **EVACUATE FROM THE SCENE IF NECESSARY**

SPILLAGE/LEAKAGE

ENVIROMENTAL INCIDENTS INCLUDE SOLID AND LIQUD SPILLS. ALL DRIVERS MUST BE AWARE OF WHAT IS BEING TRANSPORTED. THE RISK OF ENVIROMENTAL HARM IS DEPENDENT ON THE TYPE OF SUBSTANCE, THE AMOUNT AND THE LOCATION OF THE SPILL.

IN A SITUATION WHERE YOU HAVE DETECTED A SPILL:

- Stop the vehicle in a safe area that does not disturb other traffic or cause further pollutions to nearby stormwater drains, soil, etc;
- Identify the Dangerous Goods product information;
- Do not touch or walk through the substance;
- Isolate the leak if possible and safe to do so;
- Call you supervisor to arrange clean up assistance or stand by container;
- Call Emergency Services and the regulatory Authority if required;
- Select and wear the appropriate Personal Protective Equipment;
- Contain the spill by using the spill kit provided;
- Prevent any liquid from entering stormwater drains or river/creeks etc;
- If you cannot control the spill or prevent it entering any stormwater or water way, call the Fir Brigade, do not hesitate to use the emergency number, let the Fire Brigade assess the urgency;
- If the spill is outside the scope of the drive or Business Unit – contact Group Emergency Response on 1300 790 200 to initiate Group Emergency Response Plan;
- When assistance arrives, advised of the extent of the spill and aid in the clean up; and,
- Where a third party is involved ensure that a senior employee stays on site and is the last to leave.

IN A SITUATION WHERE SALVAGE IS REQUIRED:

- Contact your supervisor who will alert the Salvage Crew;
- On arrival of the Salvage Crew salvage operations will commence;
- After salvage – finalise clean up of the area.

AFTER THE EMERGENCY

AFTER EVERY EMERGENCY INCIDENT A DEBRIEF SHALL BE CONDUCTED

DEALING WITH THE MEDIA:

After the Emergency the media may wish to interview people from Transpacific Industries in relation to the details of the incident.

UNDER NO CIRCUMSTANCE SHOULD ANY COMPANY EMPLOYEE DISCUSS DETAILS OF THE INCIDENT WITH THE MEDIA.

- All media enquired must be directed to the Business Unit Manger who will advise the Chief Executive Officer.

DEBRIEFING:

After any emergency the employee shall discuss with their supervisor the incident details and complete an incident report.

In any situation that requires the incident to be reported to relevant authorities this will be done by the Business Unit Manager.

EMPLOYEE ASSISTANCE PROGRAM (EAP):

In severe circumstances the Employee Assistance Program is available to employees to assist them deal with any post trauma.

Contact details: Within Australia call Converge International – 1800 337 068

ACCIDENT DETAILS FORM

Third Party Driver Details			
Drivers Name			
Drivers Registration		**Registration No.**	
Address & Telephone			
Insurance Company			
Injury Detail			
Property Damage Details			

Witness and Police Details	
Witness Name & Telephone	
Witness Name & Telephone	
Witness Name & Telephone	
Police Name & Telephone	

Company Driver Details			
Drivers Name			
Drivers Licence No.		**Registration No.**	
Address & Telephone			
Vehicle Type			
Injury Detail			
Property Damage Details			

NATIONAL INTEGRATED MANAGEMENT SYSTEM

STANDARD OPERATING PROCEDURE

WASTE TRANSPORT

TIG SEQ SOP 1178

TRANSPACIFIC

WASTE TRANSPORT
STANDARD OPERATING PROCEDURE

CONTENTS

Revision Status

Date	Issue	By	Checked	Approved
20/09/08	0	Ken Telfer	Brian Guihot	*Craig Beikoff*
25/11/10	1	Ken Telfer	Darren Morgan	*Alicia Taylor*

1.0 PURPOSE AND SCOPE

This procedure defines the requirements for the safe transport of prescribed waste. The procedure does not cover the transport of Dangerous Goods which is covered in ***TIG SEQ SOP 1176 Dangerous Goods Transport***.

This procedure applies to all Business Units and shall be read in conjunction with applicable legislation.

2.0 KEY REQUIREMENTS

- Vehicle licensing;
- Vehicle pre-start checklists;
- Monthly Compliance Check list ,
- Emergency Contacts/ Procedures
- Waste Tracking Documentation

3.0 REFERENCES

Australian Dangerous Goods Code

4.0 DEFINITIONS

Consignment Authorisation Number is a number issued by the disposal facility to show that the waste stream has been assessed and can be accepted by the facility. This number must appear on the Transport Certificate.

Transport Certificate is a document issued by the disposal facility to show that the waste can be accepted. This must be issued by the disposal facility, before pick up of the waste and must be located in the emergency folder of the vehicle. Also known as Waste Data Form or Tracking Form.

5.0 RESPONSIBILIES AND AUTHORITY

5.1 Chief Operating Officer, Managing Director & General Manager

It is the responsibility of the Chief Operating Officer, Managing Director and General Manager to ensure adequate resources are provided to enable Business Units to implement this procedure.

5.2 Business Unit Manager

It is the responsibility of the Business Unit Manager to:

- Ensure that all relevant employees and supervisors are trained in the handling, transport and storage of Dangerous Goods; and,
- Ensure that all drums are correctly labelled, in good condition, correctly manifested and the waste tracking documentation is correctly completed.
- Ensure Monthly Compliance Checks are documented.
- Ensure that before a waste is picked up the disposal location and price are confirmed;
- Ensure that the storage/disposal site, which the waste is being taken to, is licensed to accept the waste and that disposal/treatment prices have been confirmed; and,
- Ensure that the waste tracking documentation is in place and correct, prior to commencing work.

5.4 Waste Receival Supervisor

It is the responsibility of the designated Waste Receival Supervisor at relevant Business Units to:

- Ensure that all packaged waste drums, transported on and off site are correctly labelled in good condition, correctly manifested and provided with correct waste tracking documentation.
- Ensure all bulk transport vehicles are correctly licensed and placarded in accordance with the relevant Country, State, Regional or Territory requirements.
- Ensure that quantities of waste stored on site do not exceed limits and are stored in accordance with the statutory limits and licence requirements; and

- Ensure safety equipment required for the storage/treatment is appropriately maintained and available.

5.5 Drivers

It is the responsibility of Drivers to:

- Ensure they are correctly licensed to transport the waste;
- Ensure the vehicle is correctly licensed to transport the waste
- Ensure all required documentation is carried in the vehicle, (including Waste Data Form);
- Ensure all required safety equipment is on the vehicle, including personal protective equipment;
- Ensure that the ***TIG SEQ F 1178 1 Waste Transport Checklist*** is completed;
- Ensure all drums carried on the vehicle are in good condition; and,
- Ensure all drums are correctly labelled.

6.0 PROCEDURE

All personnel must remember before doing anything -

S top Whatever you are doing!
L ook For hazards (These are everywhere)!
A ssess The risk of these hazards!
M anage The risk to an acceptable level!

6.1 Waste Identification and Acceptance

Prior to acceptance of any waste it shall be assessed by the receival facility for acceptance and generation of a Consignment Authorisation and Transport Certificate.

Waste is not to be picked up unless a Consignment Authorisation and Transport Certificate have been issued by the appropriate authority.

When generating such documentation the following shall apply:

- Is the receival facility correctly licensed to accept the waste under the licence?
- Is the site able to store the waste according to the statutory requirements and storage limits?
- Have the disposal/ treatment costs been confirmed and correctly quoted to the client.

Not all Business Units are able to accept all wastes. It is the responsibility of the Business Unit Manager to ensure that the waste can be correctly disposed of prior to accepting the waste.

6.2 Vehicle /Driver Licensing

- When scheduling a pick up, the Supervisor shall ensure that the vehicle and driver are correctly licensed to transport the waste.
- The Business Unit Manager shall determine whether the vehicle requires a Waste Transport Licence and/or a Dangerous Goods Transport licence.
- In all States and Territories the driver requires a Dangerous Goods Licence when transporting Dangerous Goods in accordance with ***TIG SEQ SOP 1176 Dangerous Goods Transport***. In some States and Territories the driver also requires to be licensed to transport prescribed Waste.
- If a Dangerous Goods vehicle licence is required the vehicle shall comply to the relevant technical requirements as described in the ***TIG SEQ SOP 1176 Dangerous Goods Transport***.

All drivers and vehicles must be appropriately licensed

6.3 Vehicle inspections

Once a month each vehicle will be audited against ***TIG SEQ CK 1176 2 Monthly Vehicle Compliance Checklist***.

6.4 Documentation Required in Vehicle.

Prior to pick up the driver shall ensure they have the following documentation in the cabin, located on the inside of a door of the cabin; or immediately adjacent to a door of the cabin all other documents such as JSEAs, invoices and .time sheets etc are to be stored separately.

Correct documentation is to be in the vehicle prior to pick up.

If the construction of the vehicle does not allow the holder to be attached to the inside of or adjacent to a cabin door—elsewhere in the cabin of the vehicle, provided that the position of the holder is identified on a notice affixed to the inside of the driver's door of the cabin. Any emergency information holder that is located other than as specified in must be visible and accessible.

- Current **TIG COR F 0024 12 Emergency Procedures for Drivers**, Business Unit manager to determine relevant pages to be used.
- Complete copy of Waste Transport Licence
- Transport Certificate (Waste Data Form);
- Material Safety Data Sheet (for the waste to be transported as appropriate);
- Transport of Dangerous Goods also requires Dangerous Goods Transport Licence and
- Emergency Procedure Guide (for Dangerous Goods HB 76:2010) and **TIG SEQ F 1128 1 Dangerous Goods Manifest**, if Dangerous Goods being transported.

The Waste Transport Licence and TIG COR F 0024 1 Emergency Procedure for Drivers document should be bound together.

6.4.1 State Specific Requirements

In NSW Emergency Procedures are required by law to be carried for all waste, the following below Emergency procedure guides are available as part of the **TIG SEQ SOP 1178 Waste Transport Procedure**. They are as follows:

- TIG SEQ F 1178 2 Emergency Procedure Guide Clinical Waste
- TIG SEQ F 1178 3 Emergency Procedure Guide Non Dangerous Goods
- TIG SEQ F 1178 4 Emergency Procedure Guide Bio-Solids
- TIG SEQ F 1178 5 Emergency Procedure Guide Grease Trap
- TIG SEQ F 1178 6 Emergency Procedure Guide Waste Oil

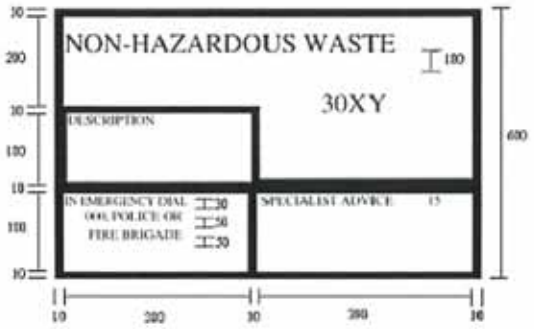
6.4.2 Victoria

Industrial waste:

A vehicle transporting the following industrial wastes in a tipper, tanker or container with a capacity of more than 500 kilograms or litres must display the following: 30XY Emergency Information Panel as depicted below.

a) animal and vegetable oils and derivatives;
b) animal effluent and residues including abattoir effluent and poultry and fish processing wastes;
c) grease interceptor trap effluent;
d) inert sludge's or slurries;
e) non-toxic salts;
f) vegetable, fruit, food processing effluent;
g) vehicle, machinery and industrial plant wash waters with or without detergents;
h) waste oil and mixtures or emulsions and hydrocarbon and water mixtures or emulsions;
i) waste oils unfit for their original intended use.

30XY Emergency Information Panel



6.5 Interstate Transport

Interstate authorisation is required when transporting from one State to another.

- If waste is to be transported interstate, an Interstate Consignment Authorisation Number shall be obtained in accordance with the relevant State or Territory Environmental Authority to which the waste is being transported.
- Waste Transport Certificates / Waste Data Forms Tracking Forms shall accompany the load
- Waste tracking exemptions do not apply when transporting interstate.

7.0 FLOWCHARTS AND ATTACHMENTS

7.1 TIG SEQ F 1178 1 Waste Transport Checklist

7.2 TIG SEQ CK 1176 2 Monthly Vehicle Compliance Checklist

7.1 TIG SEQ F 1178 1 Waste Transport Checklist

WASTE TRANSPORT CHECKLIST

Business Unit:	Site Location:	Driver/Operator:	Vehicle Registration:
Date of Check: / /	Engine hours:	Odometer reading:	

DG – Truck				
Items	**Yes**	**No**	**N / A**	**Comments**
Fire extinguisher	☐	☐	☐	
Emergency Contacts	☐	☐	☐	
Emergency Procedures	☐	☐	☐	
Waste Transport Certificate	☐	☐	☐	
Emergency Spill Kit	☐	☐	☐	
First Aid Kit	☐	☐	☐	
PPE	☐	☐	☐	
EPA Waste Transporters Licence (complete ~30 page document is required to be kept with the emergency procedure)	☐	☐	☐	
Rego Stickers	☐	☐	☐	
Eye Wash Bottle & filled	☐	☐	☐	
3 x Breakdown Triangles	☐	☐	☐	
Valves Ok	☐	☐	☐	
Hoses Ok	☐	☐	☐	
Standard Operating Procedure	☐	☐	☐	

Other Comments

Driver's Name: _____

Sign: _____ **Date:** _____

7.2 TIG SEQ CK 1176 2 MONTHLY VEHICLE COMPLIANCE CHECKLIST

REGO No:	**Current :** Yes / No	**KMS:**		**ENGINE HOURS:**	
Type of service *(e.g. 5000 hrs 20 000 km etc)*		**Service due:**		**Last service:**	
Damage to Vehicle:					

Non Controlled Waste												
Items	**Yes**	**No**	**N / A**	**Items**	**Yes**	**No**	**N / A**	**Items**	**Yes**	**No**	**N / A**
Rego Stickers	☐	☐	☐	Standard Operating Procedure	☐	☐	☐	Camera	☐	☐	☐
Fire extinguisher (current tag and charged) Internal. External	☐ ☐	☐ ☐	☐ ☐	Reversing Beacon Reversing Alarm	☐ ☐	☐ ☐	☐ ☐	Emergency Spill Kit Suitable for Product being transported Broom/Shovel Torch (Dangerous Goods See Below)	☐ ☐	☐ ☐	☐ ☐
Wheel nut indicators	☐	☐	☐	2 Way Radio Check	☐	☐	☐	Emergency Stops	☐	☐	☐
Emergency information holder current TIG COR F 0024 12	☐	☐	☐	Load Restraints (chains or strap only)	☐	☐	☐	Standard PPE	☐	☐	☐
First Aid Kit, check expiry dates)	☐	☐	☐	Breakdown Triangles	☐	☐	☐	Daily Checks being undertaken.	☐	☐	☐

Controlled (Trackable Waste)		**Yes**	**No**	**N / A**	**Items**		**Yes**	**No**	**N / A**
EPA Waste Transporters Licence (complete document is required to be kept with the emergency procedure) including smaller type vehicles carrying >200kg /lt.		☐	☐	☐	MSDS		☐	☐	☐
Waste Transport Certificate/Waste Data Form		☐	☐	☐	Emergency and Transport information held in folder according to 6.4 of TIG SEQ SOP 1178		☐	☐	☐
Valves with caps seal, flow direction labelled.		☐	☐	☐	Hoses and cap seal, flow direction labelled		☐	☐	☐
Dangerous Goods		Yes	No	N / A	Items		Yes	No	N / A
EPA/DECC DG Transport Licence Stickers, manifest		☐	☐	☐	Emergency procedures guide (E.P.G.) (HB 76 2010)		☐	☐	☐
DG Signs on either side of barrel and rear of truck – Non DG, Flammable, Corrosive, Toxic, Oxidising, Acid **EIPs including emergency contact?** DG Diamond on front and rear of vehicle		☐	☐	☐	Breathing apparatus for DG Classes (2.3, 6.1, 8)		☐	☐	☐
Eye Wash bottle		☐	☐	☐	Flame proof torch and batteries compliant with AS2380.7 for DG Classes, 2.1, 3, 4, 5.2.		☐	☐	☐
Fire Extinguishers:		Packaged good, also in IBCs, except where total capacity greater than 10 t				One x 30B Dry powder Near Driver's door	☐	☐	☐
Dangerous goods .in placard-able units.	*Either:* One x 60B Dry powder . *or:* Two x 30B Dry powder in load area. ***Plus:*** One x 10B Dry powder In Cabin	☐	☐	☐	Flammable goods in tanks; bulk containers; and/or placard-able units.	*Either:* Two x 60B Dry powder *or:* One x 80B + One x 20B Dry powder Foam ***Plus:*** One x 10B Dry powder in Cabin	☐	☐	☐
Chemically resistant gloves for DG Classes 3, 4, 5.1, 5.2, 6.1, 6.2, 8, 9.		☐	☐	☐	Chemically resistant overalls DG Classes (5.1, 5.1, 6.1, 8)		☐	☐	☐
Chemically resistant boots for DG Classes 5.1, 5.2, 6.1, 8.		☐	☐	☐	Full face shield or Goggles for DG Classes 2.1 (bulk), 2.2 (Bulk), 2.3, 5.1, 5.2, 6.1, 8		☐	☐	☐

For further details of Emergency Equipment required for Dangerous Goods Transport consult Chapter 12 of ADG 7 at http://www.ntc.gov.au/filemedia/Publications/ADG7Volume2Part12.pdf

Operator Name: _____ Signature: _____ / / Supervisor Name: _____ Signature: _____ / /

NATIONAL INTEGRATED MANAGEMENT SYSTEM

STANDARD OPERATING PROCEDURE

VACUUM LOADING

TIG SEQ SOP 1169

TRANSPACIFIC

VACUUM LOADING
STANDARD OPERATING PROCEDURE

CONTENTS

Revision Status

Date	Issue	By	Checked	Approved
30/06/06	1	Grant Inglis	Craig Beikoff	*Craig Beikoff*
26/05/08	2	Grant Inglis	Craig Beikoff	*Craig Beikoff*
23/07/09	3	Grant Inglis	Brian Guihot	*Craig Beikoff*
09/03/11	4	Darren Morgan	Alicia Taylor	*Alicia Taylor*
10/05/11	4.1	Darren Morgan	Alicia Taylor	*Alicia Taylor*
31/01/12	5	Grant Inglis	David Shearer	*Alicia Taylor*

1.0 PURPOSE AND SCOPE

This procedure defines requirements for the safe and efficient operation of vacuum loading equipment within the Company.

All workers required to operate vacuum loading equipment shall follow this procedure while performing their duties.

This procedure applies to relevant Business Units and shall be read in conjunction with applicable legislation.

2.0 KEY REQUIREMENTS

2.1 Equipment

All equipment used during vacuum loading operations must be inspected before, during and after any use for signs of damage, fault or deterioration that may contribute to a safety and/or environmental incident.

All damage, fault or deterioration that may contribute to an incident must be immediately controlled and reported to the Supervisor or relevant Business Unit Manager.

2.2 Dangerous Goods

All loading, transport and disposal of dangerous goods shall be in accordance with the applicable legislation and the *Seventh edition Australian Code for the Transport of Dangerous Goods by Road and Rail 2007* and *New Zealand Land Transport Rule Dangerous Goods.*

2.3 Regulated Waste

All loading, transport, and disposal of regulated waste shall be in accordance with the applicable legislation and Company procedure.

2.4 Spillage of Product

Spillage of any product loaded, stored, transported or outside of the designated waste disposal location is not acceptable and will be treated as an environmental incident regardless of the product type.

2.5 Operation

All vacuum loading equipment is to be operated as per training and in accordance with the manufacturer's instructions only.

2.6 Personal Protective Equipment (PPE)

All PPE shall be in accordance with ***TIG SEQ SOP 1113 Personal protective Equipment***.

The minimum PPE required for vacuum loading shall be:

- Head protection – Safety helmet;
- Hearing protection – Ear plugs or ear muffs;
- Eye protection – Safety glasses (clear for limited light areas);
- Hand protection – Gloves (the type of gloves will depend on the hazards associated with the task);
- Foot protection – Steel cap safety boots (ankle high lace up boots only);
- Body protection – long sleeve shirt and long trousers or overalls in accordance with ***TIG SEQ SOP 1347 Uniform Selection and Issue***.

PPE for task specific requirements may include:

- Respiratory protection – The type of respiratory protection will depend on the hazards associated with the specific task or product and in accordance with specific material safety data sheets and the completed ***TIG SEQ F 1323 1 Job Safety and Environmental Analysis***;
- Foot protection – Steel capped rubber/gum boots;
- Chemical protection – Mono goggles, face shields, chemical suits, chemical gloves;
- Fall protection in accordance with ***TIG SEQ SOP 1107 Prevention of Falls***– e.g. safety harness and lanyard, TRAM system, hand rails, etc.

3.0 REFERENCES

AS 1742.1:2003 Manual of uniform traffic control devices – General introduction and index of signs

Seventh edition Australian Code for the Transport of Dangerous Goods by Road and Rail 2007

WJTA (WaterJet Technology Association – Recommended Practice for the Use of Industrial Vacuum Equipment

NZS 5433:2007 Transport of Dangerous Goods on land.

4.0 DEFINITIONS

Company - for the purpose of this Standard Operating Procedure the term Company shall have the same meaning as: Person conducting a business or undertaking (PCBU).

Blower Type Vacuum Loaders ***(Super suckers, Dry/Fast Vacs or Air Movers)*** rely on the air speed generated by the rotation of lobe type rotors within an enclosed casing. The product is picked-up within the air flow via the vacuum hose and trapped within an interceptor. The air flow is then filtered before release to the atmosphere.

Dangerous Goods are any substances classified in the Australia Dangerous Goods Code and a class allocated to a substance under *NZS 5433:2007*.

Filtration Systems are systems utilised in different combinations. These include:

- Bag or filter type – mainly used to trap dry particles that carry over from the interceptor before release to the atmosphere;
- Cyclone – usually a cone shaped apparatus that forces the air flow to spin within the housing, causing any larger particles that may carry over from the interceptor to fall out of the air flow into a trap; and,
- Water trap or bubbler – this system draws the airflow from the interceptor through a tank of water that captures light and heavy particles that may carry over from the interceptor before release to the atmosphere.

It is important that these systems are kept clean and treated as contaminated after use.

While loading, light products have a tendency to "carry-over" excessively from the interceptor and then through into the filtration systems causing a reduction in vacuum capability. Due to this the lowering of pump speed may be required to reduce "carry-over.

Hazardous substances is any substance having the potential to cause harm or, which may cause injury to persons or damage to property or plant or which may react with other substances to cause injury or damage, or in the course of normal operations, may produce harmful dusts, gases, fumes or vapours.

For the purpose of these procedures, the term "Hazardous Substances" shall define all industrial waste, chemicals and materials as classified by the 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004).

Safety Data Sheets (SDS) is a document that describes the properties, and uses of a material, i.e. identity, chemical and physical properties, health hazard information, precautions for use and safe handling information.

Personal protective equipment (PPE) are items of clothing or devices worn to protect an individual from the actual or potential risk of health or safety incident arising from an activity or process.

Regulated Waste is any waste product that is regulated by a regulatory authority and must be loaded, transported and disposed of following the regulatory authority requirements.

Vacuum Tanker a tanker style semi trailer arrangement with the vacuum created within the tank via an external mounted oil fed vein style vacuum pump or small liquid ring pump. These units are mainly designed to load liquids. The vacuum pump can also be reversed to create a positive pressure within the tank to blow the product out.

Wet Ring Type Vacuum Loader uses rotating veins housed within a casing and relies on water within this housing to create a seal between the veins and the casing to create vacuum. The vacuum is created within an interceptor where the wet or dry product via a vacuum hose is trapped. The air flow is then filtered before release to the atmosphere.

Worker: A person is a ***worker*** if the person carries out work in any capacity. They can be an employee, contractor or labour hire personnel.

Note for NZ:

While reading this SOP "worker" shall be replaced with "employee or independent contractor" for the purposes of New Zealand legislation.

Employee— means any person of any age employed by an employer to do any work for hire or reward under a contract of service.

Independent contractor means a person engaged to perform work under an agreement that is not an employment agreement.

5.0 RESPONSIBILITIES AND AUTHORITY

5.1 Executive Management Team

It is the responsibility of the Executive Management Team to ensure adequate resources are provided to enable Business Units to safely and efficiently perform vacuum loading operations.

5.2 Business Unit Manager

It is the responsibility of the Business Unit Manager to:

- Provide adequate training to provide workers with suitable knowledge to perform vacuum loading operations safely and efficiently;
- Provide equipment that will enable vacuum loading operations to be conducted safely and efficiently; and,
- Ensure Supervisors provide suitable amounts of information and supervision to workers undertaking vacuum loading operations.

5.4 Supervisors

It is the responsibility of the Supervisor to:

- Ensure that the risks of vacuum loading operations have been suitably assessed and that the control methods are adequate to control the identified hazards;
- Allocate an adequate number of workers to safely and efficiently undertake the task as per risk assessment;
- Coordinate the vacuum loading operations in a safe and efficient manner; and,
- Supervise vacuum loading operations as appropriate for the task performed.

5.5 All Workers

It is the responsibility of all workers to:

- Assess the risks of hazards and assign control methods to minimise risk to an acceptable level;
- Never operate vacuum loading equipment that they have not received training in;
- Ensure all long hair, loose clothing and all jewellery etc is secured before vacuum loading operations; and,
- Follow correct operational practices as per training/instruction and never use vacuum loading equipment for a purpose that it was not intended.

6.0 PROCEDURE

All personnel must remember before doing anything -

S **top**	**Not so fast! Think through the task!**
L **ook**	**For hazards (These are everywhere)!**
A **ssess**	**The risk of these hazards!**
M **anage**	**The risk to an acceptable level!**

6.1 General

Before commencing any vacuum loading operations, necessary steps shall be taken to ensure that all hazards likely to affect the safety of persons operating equipment or working in the vicinity of vacuum loading operations are minimised.

6.2 Risk Assessments

Vacuum loading operations shall be subject to a risk assessment using ***TIG SEQ F 1323 1 Job Safety and Environmental Analysis***. Specific hazards associated with vacuum loading shall include, but not be limited to:

6.2.1 Air Movement - The velocity of air/material movement through larger diameter hoses can achieve speeds in excess of 250 Kilometres per hour. At these speeds parts of the body can be sucked into the airstream (e.g. hose ends) in an extremely violent action. Due to the fast airflow rates vacuum suffocation can also occur if the work end of hoses

enters a persons breathing zone and preventing the person's lungs to expand.

6.2.2 Vacuum (Negative) Pressure – Most modern vacuum loading systems have the potential to produce 170 Kg to 360 Kg negative force. At these forces if a bodily part becomes trapped it can cause significant injury to the muscular skeletal system and bodily tissue damage.

6.2.3 Manual Handling – Vacuum hose weights greatly increases when full of product. Manual manipulation of vacuum hoses requires significant exertion of strength. Always consider methods to limit manual handling requirements when planning any vacuum loading tasks.

6.2.4 Noise – Vacuum loaders can produce noise exceeding 120 dB(A) at the unit. This is well above the national exposure standard of 85 dB(A) over an eight hour exposure period. Hearing protection in accordance with ***TIG SEQ SOP 1009 Noise Control and Hearing Conservation*** must be worn while vacuum loading. Consider sensitive times and locations when planning vacuum loading tasks.

6.2.5 Engulfment – Some vacuum loading tasks involve large piles of product to be vacuumed. Undermining or shifting of these materials can cause it to slide and engulf personnel. Always consider control methods to minimise risks during task planning.

6.2.6 Static Electricity – The continuous fast movement of air/material flow through hoses and vacuum systems generate a static electrical charge. The gathered static charge can discharge striking personnel, metal structures and earthed apparatus with significant force. The spark created from this discharge is also capable of igniting flammable dusts/liquids. Always attach the static dispersion wire to a suitably earthed structure or earthing ground stake. Also consider earthing hose fittings to disperse static charge at the work end of the hose.

6.2.7 Explosion – Fine dusts, flammables, incompatible chemicals, pyrophoric (self combustible) products, and reactive materials always have the possibility to cause explosion when vacuum loaded. Strict control measures must be implemented, e.g. earthing, spark arrestors and nitrogen introduction. Always follow product SDS and specialist instructions.

6.2.8 Implosion – The majority of vacuum loading systems operate by producing a significant amount of negative pressure within the interceptor and filtration systems.

If the negative becomes too great for the structure it will collapse in on itself causing a sudden equalisation of atmospheric pressures and damage to the unit. Always check all pressure relief valves/control systems on vacuum loaders to ensure that they are in working condition. Regular visual inspections are to identify any weakened or excessively worn and damaged components of the vacuum loader.

6.2.9 Vehicle Weight Change – Most vacuum loaders are transported via trucks. When the interceptor fills with product the centre of balance and overall vehicle weight changes. These weight changes can lead to vehicle rollover, equipment/vehicle failures, overweight vehicle capacities, and changes in the vehicle handling and performance.

6.3 Product Identification

Before any vacuum loading task is conducted the product type and amount to be loaded shall be correctly identified and an authorised disposal location confirmed.

If the client has requested that the product be unloaded onsite or they have arranged the disposal location a positive confirmation (preferably in a documented format) shall be obtained before commencement of task.

6.4 Pre-start Inspections

6.4.1 Vacuum Unit

A pre-operational inspection of the vacuum unit shall be conducted on the following items, as applicable:

- Drive unit - lubricating oil, water, hydraulic fluid and fuel levels;
- Pump unit - lubricating oil and gearbox oil levels;
- Hydraulic hoses;
- Condition of guards, shields and safety interlocks;
- Electrical leads and connectors;
- Filters - all filters shall be checked at regular intervals, dependent upon the product being loaded, and in accordance with the vacuum unit manufacturer's recommendations.

6.4.2 Vacuum Interceptor

The vacuum shall be empty and decontaminated before use to prevent cross contamination of materials or creating a chemical reaction.

6.4.3 Hose and Hose Assemblies

All hoses and hose assemblies shall be visually inspected prior to each use to ensure:

- The correct hose rating for the product being loaded;
- The correct hose size and length is selected;
- There is no apparent structural damage to the hose, e.g. kinking, flat spots or cuts;

- All hose fittings and couplings are in good order with correct gaskets/seals in place; and,
- All hose connections to equipment or other hoses shall have the ability to be earthed if loading of flammable, explosive or combustible materials.

Certain materials that are vacuum loaded can significantly increase the internal wear of hoses and cause fittings to become sharp.

6.4.4 Engine Controls

All throttle controls, cables, computer control systems (if fitted) and engine stop devices shall be clearly identified and checked daily to ensure that they are functioning properly.

6.4.5 Operational Leaks

Should any abnormal leaks be observed, the system shall be isolated or shut down immediately and the cause of the leak or leaks corrected before further operation.

After assessment of leaks within the interceptor and/or vacuum system it may be a requirement to engage the vacuum unit to create a negative pressure within and prevent further spillage.

6.5 Job Set-Up

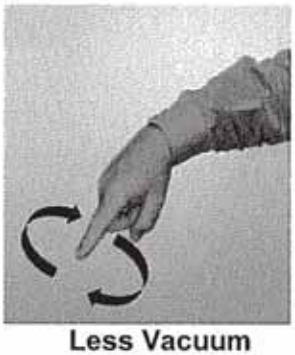
On arrival at the work site, conduct a risk assessment using ***TIG SEQ F 1323 1 Job Safety and Environmental Analysis*** and consult with the client to determine the most suitable positioning of the vacuum unit, having regard to the following:

- Position the vacuum unit as close to the work area as practicable using a spotter to minimise the amount of hose required and to maximise vacuum efficiency;
- Avoid obstructing the road, rail or pedestrian traffic areas;
- Avoid obstructing emergency access points;
- Ensure the vacuum unit is standing on firm ground, sitting reasonably level and that the park brake is engaged. Consider the use of approved wheel chocks;
- Ensure that vacuum process does not cause hazards to others in the area, e.g. trip hazards, exhaust fumes, noise, and dust;
- Ensure the unit is positioned so that the truck / auxiliary and blower exhaust does not impact overhead structures, e.g. cabling in cable trays, as this may result in a fire risk;

- Ensure the unit is positioned clear of overhead obstructions, e.g. power lines, especially if the unit is fitted with a hose boom which can significantly increase the height of the equipment when extended as this may result in electrocution. "**Look up and live**";
- If operating the vacuum unit within an enclosed area, e.g. inside a building, control measures must be considered for the build-up of exhaust fumes, heat from engines and blower discharge; and,
- Due to the noise and general working conditions associated with vacuum loading operations every member of the work team must fully understand the correct hand signals to indicate specific instructions, for example:

Start-up

More Vacuum



Less Vacuum

Shutdown

Emergency Stop

6.5.1 Warning Barriers

Suitable barriers conforming to the general recommendations of *AS 1742.1:2003 Manual of uniform traffic control devices – General introduction and index of signs* shall be erected to encompass the hazardous area. The perimeter of this area shall include the vacuum unit and all associated equipment e.g. hoses etc.

Hoses have a tendency to kick, jump, and move around in a violent manner and hoses must be adequately barricaded to prevent intentional or unintentional entering of the striking range of the hose, connections, boom hoses and/or associated equipment.

The only area of the hose assembly that personnel should come into contact with the hose while in operation is the work end of the hose as indicated in **Figure 1**.

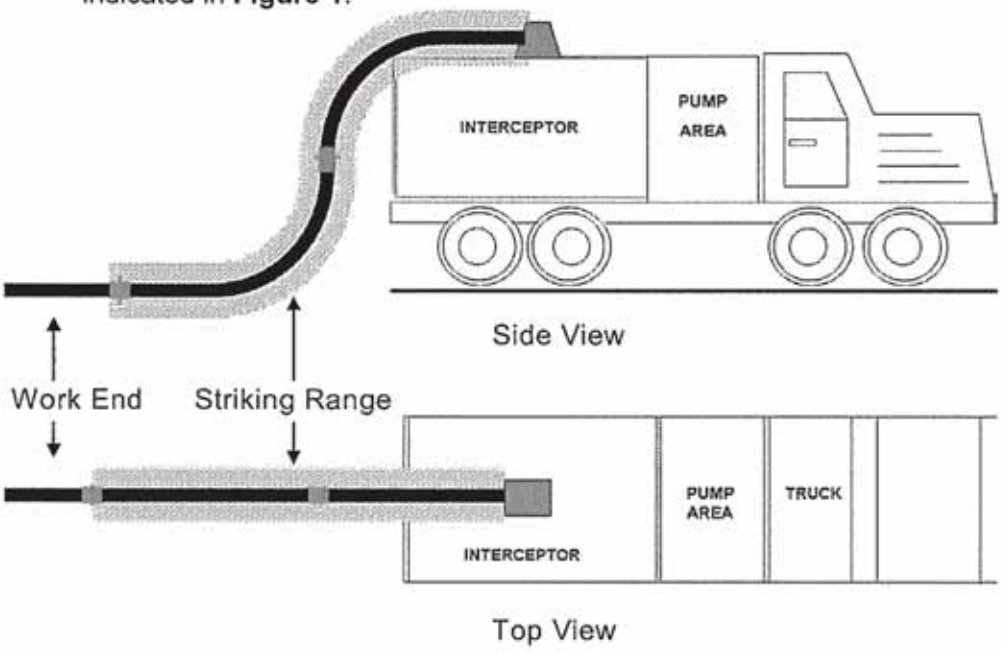


Figure 1

The barriers may be of rope, safety tape, or barricades. The actual form of the barriers is not important provided they are highly visible and give an effective warning. Signs conforming to the recommendation/s of *AS 1319:1994 Safety signs for the occupational environment* shall also be posted to warn of the approach to a hazardous area.

6.5.2 Client Permits and Procedures

Check with the client to determine if a work permit, isolations and/or personal tagging is required, and if so, ensure all relevant documentation and procedures are completed by the appropriate person.

6.5.3 Hose Layout

Select a safe route and run out the hoses from the vacuum unit to the work site, avoiding stairways and walkways, if possible, and minimising the number of bends in the hose.

If working at high levels, support the hoses by tying them off at various points to avoid strain on the couplings and below each join on the hose as indicated in ***Figure 2.***

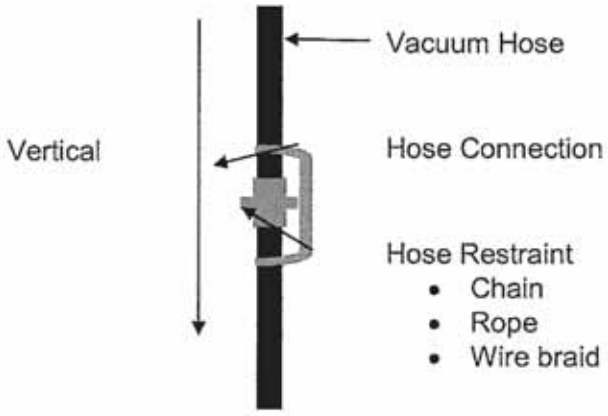


Figure 2

If there is any risk that personnel may enter the striking range of the vacuum hose, connections, booms or associated equipment it must be adequately restrained to a secure anchorage point to prevent any movement that has the potential to cause injury and/or damage.

Chains or rope shall be used to support couplings/fittings. Never rely the coupling to hold the weight of the hose especially when vertically arranged.

All hoses that are required to be suspended greater than 1.8 metres must be secured to prevent them from falling.

Before lowering long lengths of hose into pits etc., attach a guide rope near the work end of the hose. This will assist in the hose retrieval process when the task is finished and minimise the risk of hoses/fittings getting caught on ledges, lips and other obstructions.

If static electricity is a hazard, earth each hose to the main structure or designated earthing points.

6.5.4 Vacuum Breakers

A vacuum breaker shall be used in cases where workers using the hose end can not be seen by the vacuum unit operator and has no other form of relieving vacuum pressure if a part of the body is sucked in to the hose.

The most common vacuum breaker is a three (3) way connection that is fitted inline between the hose connected to the vacuum system and the vacuum hose work end. The top (third) opening is sealed by a plate seal or butterfly valve that is connected to the work end near the operator. If the operator has a body part sucked into the hose or another problem occurs, the operator pulls on the rope to break the vacuum breaker seal as indicated in **Figure 3**.

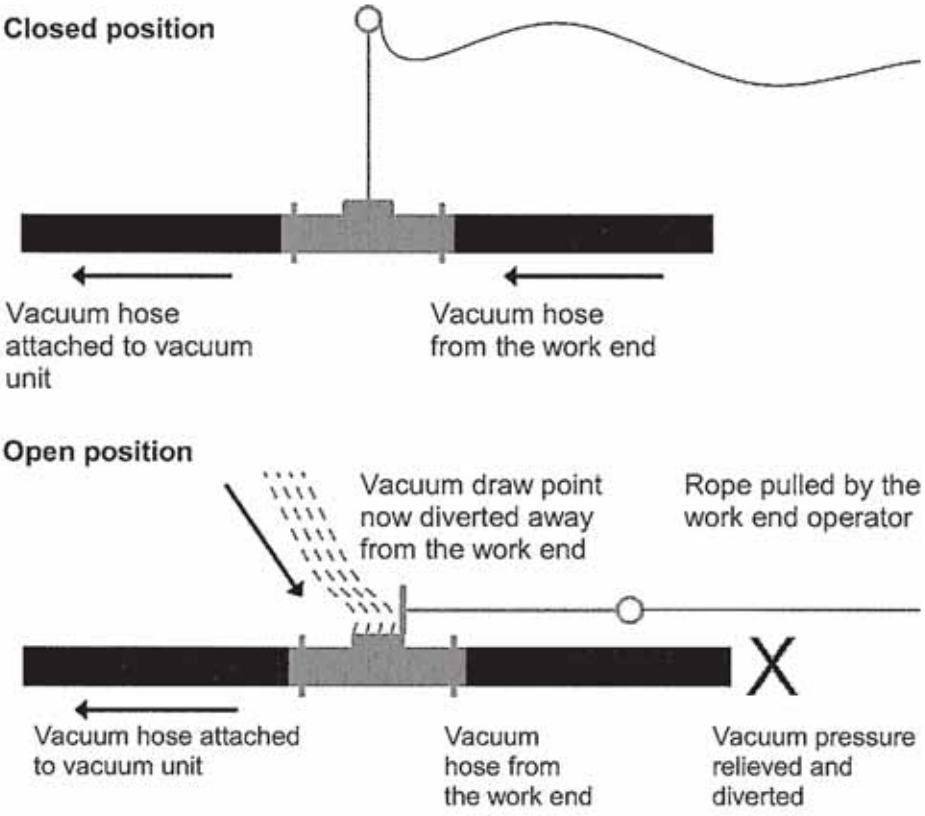


Figure 3

6.6 Vacuum Unit Start-up

The vacuum unit shall be started as per the manufacturer's instructions and operator training.

6.7 Applications

At no stage is any person allowed to sit on, stand on, straddle, lie on or be in the striking range of the vacuum hose while vacuum loading any material with the exception of the work end only.

6.7.1 Dry Product

The following is a general guide to vacuum load dry products:

- Never bury a hose into a pile;
- Always work the hose into the pile, keeping the hose on the ground and a constant flow of product entering the hose;
- Avoid reducing hose size, the product tends to accumulate in the larger diameter hose and reduces performance;
- Light dusty products tend to generate static electricity in the vacuum hose. This is a major hazard in explosive atmospheres;
- Large areas of light spillage can be cleaned quicker by sweeping the product into piles and vacuuming the piles up;
- Hold the hose approximately 1m back from the work end, the vacuum will hold the work end of the hose on the ground. Move the work end about with your other hand;
- Keeping 1m of hose out, it stops the hose sticking to the ground. The work end of the hose should be at approximately 45° to the ground; and,
- It may be necessary to introduce water into the airflow when dry product dumping is not allowed or if the product is hot in temperature.

6.7.2 Liquid

The following is a general guide to vacuum load liquids:

- Sludge Gulpers and Gully Suckers can have their hoses completely submerged and will continue to operate, most other blower style units require air in the hose and can only be partially submerged;
- Using large vacuum units on liquids the hose has a tendency to dive to the bottom of the sump, or to flick out after gulping a full head of liquid. The hose must be adequately restrained to a secure anchorage point to prevent any movement that has the potential to cause injury and/or damage;
- When vacuuming large areas, always place the hose at the lowest point and then direct the product towards the vacuum hose; and,
- Never walk over the top of a hose as it is sucking liquids as it has a tendency to kick up.

6.7.3 Flammable Products

Any vacuum loading of flammable products or potentially flammable product shall be undertaken in accordance with ***TIG SEQ SOP 1172 Flammable Liquids Collection and Transport***.

6.8 System Blockages

Never attempt to clear a blockage by placing your hands or feet in the vacuum hose while the unit is running, never lift the hose above waist height while operating and never direct the end of the hose towards other personnel.

6.8.1 Work End of Hose

When there is a visible blockage at the work end of the hose, try and dislodge the blockage with a bar, long handled implement or striking against solid object.

If unsuccessful, shut the vacuum unit down and manually remove the blockage. If a vacuum breaker is used, simply activate it to the open position to divert the vacuum and then remove blockage.

6.8.2 Within the Hose/s

When a blockage within the hose is suspected, lower the pump speed to an idle pace or activate the vacuum breaker.

Undertake the following:

- Feel along the outside of the hose for vibration. The area with the strongest vibration will be the point of the blockage;
- Feel the weight along the hose. Where it starts to feel heavy is the area of the blockage;

Once the blockage has been located the following methods can be used to attempt to clear it:

- Open and close the vacuum breaker (if fitted) to convulse the airflow and dislodge the blockage.
- Roll the hose at the suspected blockage to induce movement of the product within.
- Pick-up the hose at the suspected blockage and drop it on to the ground to dislodge the product within.
- Strike the hose at the suspected blockage with a solid implement e.g. back of a shovel. This will break-up the product within the hose and allow it to flow.
- Reverse the length of hose containing the suspected blockage.

If any of these methods fail, remove the hose and replace it. Ensure the blocked hose is returned to the Business Unit for alternate methods of clearing the blockage.

6.9 Pre Shut-Down Requirements

All product within the hoses must be cleared before total shut-down and detachment of fittings. All precautions shall be taken to prevent any spillage of product trapped within the hose assembly.

6.9.1 General

Once the interceptor is approaching full capacity, remove the work end of the hose from the product to allow airflow to clear all the product within the hoses.

6.9.2 Drawing from Tank

Turn off the shut off valve on the tank and open the vent valve to allow airflow into the hose. Allow airflow to clear the entire product from within the hoses as per **Figure 4**.

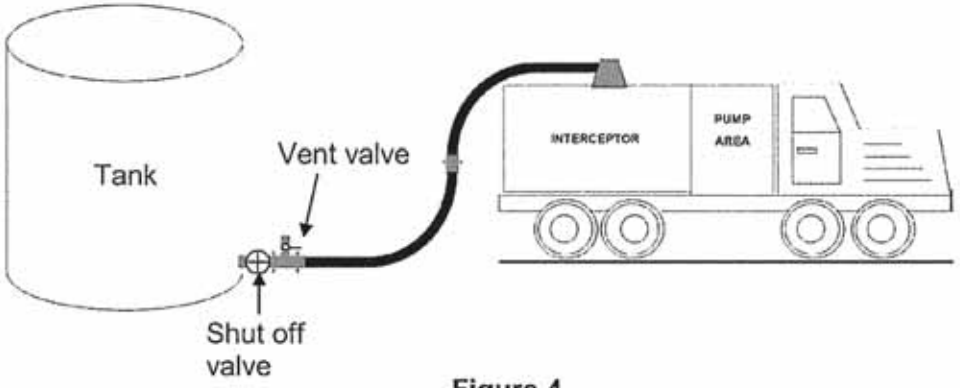


Figure 4

6.9.3 Incomplete Loads from Pits, Fixed Lines etc.

Open the vent valve to allow airflow into the hose and allow airflow to clear the entire product from within the hoses. Leave the vent valve open so any product below the valve can drain back into the receptacle as per **Figure 5**.

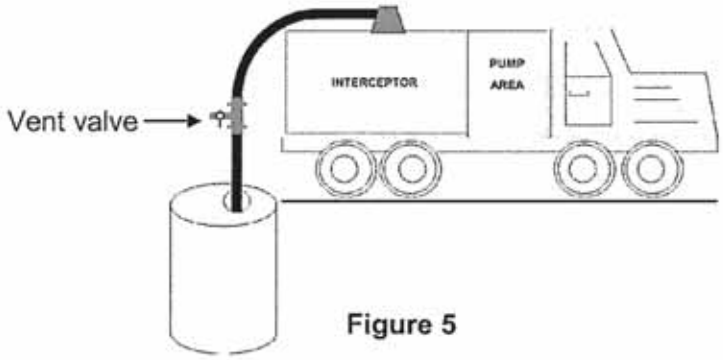


Figure 5

6.10 Vacuum Unit Shut-Down

The vacuum unit shall be shut-down as per the manufacturer's instructions and operator training.

During vacuum unit shut-down check all equipment for leakage as the vacuum pressure within the system dissipates. If leakage occurs and can not be controlled it may be a requirement to re-start the vacuum unit to regain the negative pressure to contain the leak.

6.11 Task Completion

At the completion of the task and before demobilising, contact the client representative and request an inspection to ensure the client is satisfied with the completed task.

The retrieval of long lengths of vacuum hoses, especially from long enclosed vertical areas, e.g. pits, can be difficult due to the weight and risk of hoses and fittings getting caught on ledges, lips and other structures. Use the attached guide rope as described in ***Section 6.3.3. Hose Layout***, to manipulate the hose past any areas that it may get caught on and it will also help disperse the overall weight of the hose assembly.

Where safety rails are not fitted to openings, ensure the use of a fall restraint system, and secure openings when not using.

Some vacuum units are fitted with a hydraulic boom that positions the hose to reduce manual handling. While using these devices ensure all workers are clear of the hose assembly (at least two (2) metres). If the hose assembly gets caught on a ledge, lip or other structure cease operations immediately to reduce the risk of the hose stretching.

Reverse the direction of the boom to relieve the stored pressure and then re-try using the guide rope to navigate the hose away from the area that it was caught at. This method can be used if cranes or winches are utilised as well.

At no stage shall the truck be used to tow the hose assembly in an un-controlled manner. This increases the risk of hoses and fittings getting caught on ledges, lips and other structures causing the hoses to stretch. Once the hose stretches the stored energy can discharge if hoses or fittings release or fail. This action leads to the hose retracting with great force and may cause significant injury and/or damage.

Disconnect all hoses taking care not to drop hoses from elevated positions and store in preparation for transport. The hoses may still contain residue of the product that was loaded so the same precautions relating to PPE is required.

Pack up all equipment including the dismantling of barricades etc.

Clean hoses, attachments and store in correct locations on vehicle. Task Specific PPE items MUST be removed at the completion of the work related task, cleaned and stored in the correct locations on the vehicle prior to entering the cabin of the vehicle. Ensure all hatches, valves and outlets are capped, doors are closed, sealed and locked in position. All hoses must be secured or stowed in hose trays correctly to prevent falling from the vehicle before leaving the site.

Place caps/plugs on hoses, including main vacuum boom hose end, and store hoses in hose trays at the side of the vehicle. Ensure that the hose tray drains are shut (if fitted) to prevent accidental leakage from hoses.

Ensure safety and secondary fail safe locks are installed to prevent accidental interceptor door opening, or where fitted with a main vacuum boom, the boom hose restraint to prevent accidental boom swing.

Ensure client has completed and signed the required waste transfer documentation if required.

All operators are required to physically walk around the vehicle to identify any obstructions that may be above, behind, around, or in front of the vehicle before climbing into the vehicle cabin.

6.12 Disposal of Materials

Follow all instructions given by the approved disposal site personnel.

Manoeuvre vehicle into position for dumping, ensuring that the vehicle is on flat level ground prior to tipping and that the rear of the vehicle is clear of persons and property and that it is safe to discharge the load.

No person is allowed under the raised interceptor or unlocked rear door while fully loaded with any type of product.

If it is a liquid, start to discharge using the rear decant. Once the liquid level is lowered to a safe level the rear door may be opened.

The rear door may be opened immediately if the interceptor contains dry or sludge type materials, and it is safe to do so, and the area that it is to be discharged in is of adequate size to contain the load.

If possible after disposal of load wash out the interceptor, rear door, door seals, ball float (if fitted), cyclone (if fitted) and material catchment areas (e.g. torpedo tubes) at the disposal location.

If at any stage personnel are required to work beneath a raised interceptor or opened rear door (e.g. for washing out) a **safety prop** must be installed to prevent un-intentional lowering or closing.

Drop bubbler and seal water tanks within disposal location if it is able to be suitably contained and washout at the disposal location.

If this cannot be achieved the operator is to contact their Supervisor/Business Unit Manager to inform them to arrange alternative clean out arrangements.

Regular cleaning prevents excessive material build-up within the system that leads to reduced vacuum ability and minimises the risk of cross contamination of loads.

Ensure approved disposal site representative has completed and signed the required waste transfer documentation, if required.

6.13 Maintenance and Repair

Always use correct support device (e.g. safety prop) if working under the raised interceptor or rear door of a vacuum unit as hydraulic rams and attachments can fail causing them to either fall rapidly or slowly over time.

Isolation of the truck and vacuum system in accordance with ***TIG SEQ M 1109 Isolation of Energy Sources*** is required when undertaking any repair or maintenance task in or on the vacuum unit.
If entry is required inside the interceptor of the vacuum unit the requirements of ***TIG SEQ SOP 1105 Confined Spaces*** shall be followed.

6.14 Training and Development

All personnel that undertake the following duties relating to vacuum loading shall be deemed competent as per the Transpacific Training Plan (TTP) with completion of CBT15560 Introduction to Vacuum and pumping Operations, , or an external qualification that satisfies all required competencies set out within the Transpacific Training Plan:

- Any worker that supervise vacuum loading operations;
- Any worker that may direct or arrange vacuum loading operations;
- All workers that operate vacuum loading equipment;
- Any worker that may purchase, maintain and inspect vacuum loading equipment; and,
- Any worker that may write procedures or instructions for the use of vacuum loading equipment.

All testing, maintenance and/or repair undertaken by the manufacturer, agent or other person/s authorised by the manufacturer, agent or other suitably qualified persons are not required to adhere to this section. It shall be an expectation of Transpacific Industries Group that the selected manufacturer has already deemed these personnel as competent to perform the task they have been requested to undertake.

6.15 Operational Trainers and Assessors

Any person that provides training and/or assessment in vacuum loading operations shall meet the following criteria:

- Be deemed competent as per the Transpacific Training Plan (TTP) with completion of CBT15560 Introduction to Vacuum and pumping Operations.
- Have a minimum of five (5) years experience in various types of vacuum loading operations and must include a suitable amount of hands on work;
- A Certificate IV in workplace training and assessment, or the equivalent;
- Has successfully undertaken a minimum of five (5) supervised training/ assessment sessions under the guidance of an appointed vacuum loading operations trainer/assessor;
  - Has been appointed by the relevant Business Unit Manager and endorsed by the relevant Managing Director; and,
  - Has been appointed by the Technical Training Manager and endorsed by the National Training Manager.

Skills demonstration of the training/assessment course is a mandatory step to be conducted after the theory elements. This is to be conducted in a controlled environment, before any use in the workplace under working conditions.

6.16 Refresher Training

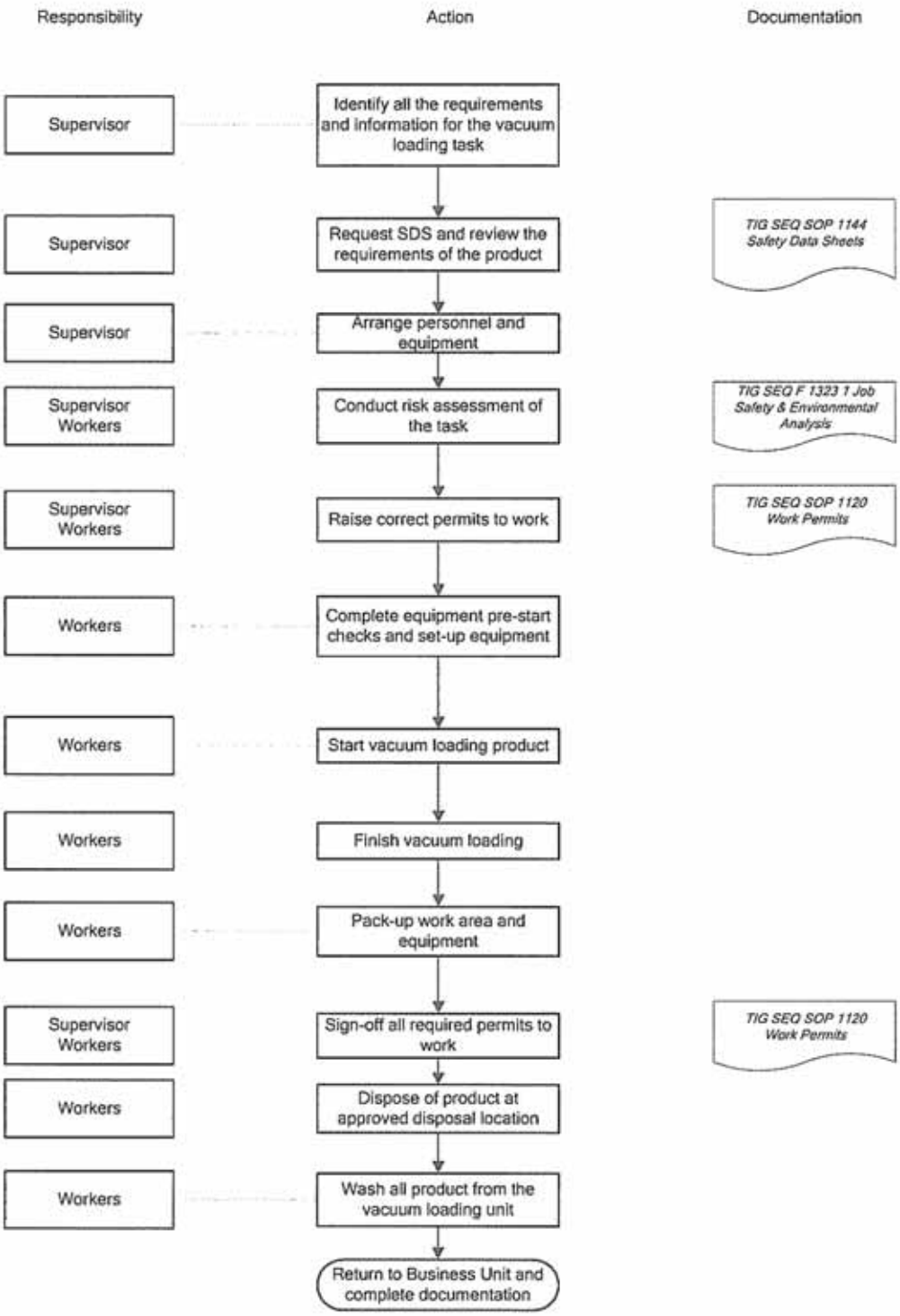
It is recommended that vacuum loading refresher training should be undertaken by personnel every two (2) years. The intent of the refresher training is not to re-establish competence, but to up-skill personnel vacuum loading knowledge including but not limited to:

- Changes to legislation relevant to vacuum loading;
- Amendments to standard operating procedures relevant to vacuum loading;
- Provide information and practical experience of technological vacuum loading advancements;
- Key learnings from any vacuum loading incident that may have occurred; and,
- Recent Industry information.

7.0 FLOWCHARTS AND ATTACHMENTS

7.1 Vacuum Loading Flowchart

7.1 Vacuum loading flowchart



Liquid Waste Tanker Inspection

FLEET NO: _____ **DATE:** _____ **VEHICLE REG:** _____

SPEEDO: _____ **HUBO:** _____ **C. O. F. DUE:** _____

A CHECK ITEMS

		OK	Needs Attn.
1)	Inspect tank and subframe for any damage or stress cracking		
2)	Inspect tank mountings or tipping hoist and hinge gear if fitted		
3)	Inspect rear discharge door, rear door seal hinging and latching		
4)	Check intake and discharge valves		
5)	Check vacuum gauge on tank		
6)	Check vacuum filter		
7)	Check exhaust filter or oil catcher		
8)	Check condition of vacuum pump, and if an oil vane pump, the oiling system		
9)	Check and adjust bell drive to vacuum pump if fitted		
10)	Check condition of hydraulic drive to vacuum pump if applicable		
11)	Check condition of water blaster hose, and wand if fitted		
12)	Check oil level in water blaster		
13)	Fire extinguisher charged		
14)	Spill kit on vehicle and complete		
15)	Report any safety problems		

ADDITIONAL B CHECK ITEMS

Carry out in line with COF occurring in second half of Year i.e. between July and December inclusive

16)	Change hydraulic oil and filter, if applicable		
17)	Inspect hydraulic filter and tank breather		
18)	Check operation of vacuum pump, check pull down rate and leakage, note times		
19)	Check vacuum shut off systems		
20)	Check hoses, pipes and ancillary items condition		
21)	Check all operational and safety decals in place		

REMARKS/DISCREPANCIES

_____
_____
_____
_____
_____

NOTE: ALL REPAIRS ON REPAIR ORDER, NOTIFY SUPERVISOR OF ANY MAJOR PROBLEMS IMMEDIATELY

I HAVE CHECKED ALL OF THE ABOVE AND NOTED DEFECTS REALISING MANY MAY CONTRIBUTE TO THE SAFE OPERATION OF THIS VEHICLE

COMPANY _____

SIGNATURE _____ **DATE** _____

APPROVAL _____ **DATE** _____

Please return or post within three working days to the Transpacific Industries Group Branch Operating this Vehicle

Liquid Waste Tanker Inspection

FLEET NO: _____ **DATE:** _____ **VEHICLE REG:** _____

SPEEDO: _____ **HUBO:** _____ **C. O. F. DUE:** _____

A CHECK ITEMS

		OK	Needs Attn.
1)	Inspect tank and subframe for any damage or stress cracking		
2)	Inspect tank mountings or tipping hoist and hinge gear if fitted		
3)	Inspect rear discharge door, rear door seal hinging and latching		
4)	Check intake and discharge valves		
5)	Check vacuum gauge on tank		
6)	Check vacuum filter		
7)	Check exhaust filter or oil catcher		
8)	Check condition of vacuum pump, and if an oil vane pump, the oiling system		
9)	Check and adjust bell drive to vacuum pump if fitted		
10)	Check condition of hydraulic drive to vacuum pump if applicable		
11)	Check condition of water blaster hose, and wand if fitted		
12)	Check oil level in water blaster		
13)	Fire extinguisher charged		
14)	Spill kit on vehicle and complete		
15)	Report any safety problems		

ADDITIONAL B CHECK ITEMS

Carry out in line with COF occurring in second half of Year i.e. between July and December inclusive

16)	Change hydraulic oil and filter, if applicable		
17)	Inspect hydraulic filter and tank breather		
18)	Check operation of vacuum pump, check pull down rate and leakage, note times		
19)	Check vacuum shut off systems		
20)	Check hoses, pipes and ancillary items condition		
21)	Check all operational and safety decals in place		

REMARKS/DISCREPANCIES

_____
_____
_____
_____
_____

NOTE: ALL REPAIRS ON REPAIR ORDER, NOTIFY SUPERVISOR OF ANY MAJOR PROBLEMS IMMEDIATELY

I HAVE CHECKED ALL OF THE ABOVE AND NOTED DEFECTS REALISING MANY MAY CONTRIBUTE TO THE SAFE OPERATION OF THIS VEHICLE

COMPANY _____

SIGNATURE _____ **DATE** _____

APPROVAL _____ **DATE** _____

Please return or post within three working days to the Transpacific Industries Group Branch Operating this Vehicle