



Section 5

EIS Waste Management

The respondent comments provided in this section have been collated from all stakeholder submission comments relating to EIS Section 5 Waste Management. Please refer to **Attachment A** for copies of all submissions received.

5.1 Introduction

No submissions were received for this section.

5.2 Regulatory Framework

No submissions were received for this section.

5.3 Waste Generation

5.3.1 Waste Generation

Respondent Comment

Gladstone Regional Council states that waste generation figures for general waste mentioned in Table 5.3.1 require clarification. These figures appear high and discussion is required with Council to ensure that the landfill has the capacity for this waste. Furthermore, Council will not support a landfill site being developed on Curtis Island.

Santos Response

Santos will discuss waste disposal options further with the Gladstone Regional Council to ensure adequate landfill capacity is available to cater for GLNG Project related wastes. Waste will be transported off Curtis Island by truck and barge to a licensed facility.

Respondent Comment

Gladstone Ports Corporation states that with a major accommodation camp on Curtis Island the quantity of recyclable waste would be significant. From the Table 5.3.1 it is unclear whether the recyclable waste associated with the construction activities on Curtis Island are included in the general waste quantities in this table.

Santos Response

Recyclable material generated by workers living in the CAF was not included in the EIS calculation; however, all recyclable construction waste material was included. Santos will work with the Gladstone Regional Council to determine which recycling facility should be utilised to process the recycled material generated by construction workers living in the CAF. Final volumes will be dependent on the size and timing of the CAF. However, Santos is committed to removing all solid waste from Curtis Island. Further information is available in **Attachment B3**.

5.3.1.1 Construction Waste

Respondent Comment

Banana Shire notes drilling fluids should be transported to other treatment or disposal facilities outside of Banana Shire. General Waste will only be accepted at Trap Gully landfill east of Biloela. Council advises

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that waste oils be stored appropriately and transported to treatment or disposal facilities outside of Banana Shire. The proponent should contract Council or local community groups for recycling options, or disposal of wastes at Trap Gully Landfill.

Santos Response

Santos will discuss recycling options further with the Banana Shire Council to ensure GLNG Project related wastes are disposed of or recycled correctly.

Respondent Comment

Maranoa Regional Council states that disposal of effluent by irrigation will generally be acceptable but a contingency plan may be necessary in wet weather.

Santos Response

A contingency plan for disposal of effluent during wet weather will be developed by Santos' EPC Contractor. This matter is addressed in the **Attachment B1**, Section 11.16.19.

Respondent Comment

Maranoa Regional Council states that how council receives waste material such as sanitary sludge, effluent and waste oil will depend on the method of delivery, quantities and frequency of delivery.

Santos Response

Santos will work with the relevant waste disposal facilities and councils to ensure GLNG Project related waste such as sanitary sludge; effluent and waste oil is transported in the appropriate manner. All such waste will be transported and disposed of in licenced facilities. Refer to **Attachment B1**, Section 11.16.19.

5.3.1.2 Operation Waste

Respondent Comment

Banana Shire states that all these wastes should be disposed of at an appropriate facility outside of Banana Shire.

- *Reverse Osmosis Brine, this regulated waste will not be accepted at the Council landfill.*
- *Rubber and tyres are accepted at Trap Gully Landfill for a fee.*
- *Waste chemicals/unused chemicals likely to be regulated waste are not accepted at Council landfills.*
- *Waste oil and lubricants (commercial quantities not accepted at Council landfills), waste should be stored and transported for treatment and disposal by a regulated waste carrier.*
- *Waste solvents likely to be regulated and cannot be disposed of within Banana Shire.*

Santos Response

Santos will work closely with local councils regarding waste disposal criteria prior to disposal of GLNG Project related wastes. All wastes will be disposed of at an appropriately licenced waste management facility.

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Respondent Comment

Banana Shire states that sanitary waste, sludge from treatment plants, will not be accepted at local Council Township landfills. Check with local Council prior to disposal. May be acceptable at Trap Gully Landfill for a fee.

Santos Response

Santos will work closely with local councils regarding waste disposal criteria prior to disposal of GLNG Project related wastes.

5.3.2.1 Construction Waste

Respondent Comment

Banana Shire states that the proponent should provide details regarding the sourcing of water for dust suppression.

General and Putrescibles waste will be accepted at Trap Gully Landfill for a fee.

For recyclable waste contact council or local community groups for recycling options, or disposal to Trap Gully Landfill.

Scrap Metal, if are large enough quantities, could be collected by a scrap collector.

Waste Oils must be collected for transport to treatment or disposal facility outside of Banana Shire.

Check with local council prior to disposal of Hydrotest water. This material may not be acceptable for disposal with Banana Shire environment licence.

Paper and cardboard could be recycled through Biloela Transfer Station. Printer toners and cartridges recycled via Planet Ark. Other waste types to be checked with Banana Shire Council's Environmental Officer responsible for Waste Management.

Contaminated Soil disposal. Check with council prior to disposal at council facilities.

Santos Response

Santos will discuss recycling and waste disposal options with the Banana Shire Council to ensure GLNG Project related wastes are disposed of or recycled correctly prior to commencing the project.

All wastes will be disposed of in an appropriately licenced waste management facility.

5.3.2.2 Operation Waste

Respondent Comment

Banana Shire states that the proponent does not adequately describe pigging operations, nor give an account of the type of regulated waste it generates.

The proponent should check with Banana Shire Environmental Officer responsible for Wastes Management prior to disposal. Disposal within Banana Shire may not be possible.

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Santos Response

"Pigging operations" is referring to the internal cleaning of the gas transmission pipeline. Operation of the gas transmission pipeline will generate very small quantities of waste, principally sludge from the cleaning (i.e. pigging) of the pipeline. This material is collected at scraper stations and will be transported to a licensed waste disposal facility.

Santos is committed to working closely with relevant local councils to ensure this regulated waste is able to be disposed of appropriately.

Please refer to **Attachment B2**, Section 12.16.14 for further details.

5.3.3 LNG Facility

Respondent Comment

Department of Environment and Resource Management states that details should be provided on the disposal method for waste from the LNG facility in general (including the water treatment plant) and opportunities for waste avoidance and reuse. Provide information on whether the Gladstone Regional Council Curtis Island landfill is proposed to be used as part of the waste management system.

Santos Response

EIS Appendix K outlines how individual waste streams generated by the LNG facility operations are to be treated. Santos will work with the Gladstone Regional Council to determine which landfill should be utilised to dispose of project generated waste. However, waste will be transported off Curtis Island by truck and barge and will be disposed of at an appropriately licenced facility.

5.3.3.1 Construction Waste

Respondent Comment

Gladstone Ports Corporation notes that the majority of waste generated during the construction phase will be transferred to local landfills and licensed facilities. It is assumed that these facilities are located on the mainland and will have the capacity to cater for the increase in waste. Some waste can be accommodated as back loads for trucks delivering product to the Island, however, it would be thought that some waste generated will require specific transport modes requiring the containers to be hauled both to and from Curtis Island (sewage, general waste). What allowances has been made for the transportation of these waste products from Curtis Island and what impact will result in the increased traffic generation.

Santos Response

Since the release of the EIS a revised transport and logistics strategy has been developed for the transportation of materials, equipment and personnel to and from the Mainland and Curtis Island. The revised strategy includes daily deliveries and return trips to manage services such as diesel fuel, waste management and water supply.

The traffic assessment has been updated to reflect the revised transport and logistics impacts and strategy for the Mainland Marine Facilities and is provided in **Attachment L**.

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5.4 Waste Management

Respondent Comment

Queensland Health states the proponent needs to ensure that health risks associated with the disposal and re-use of treated sewerage is assessed and mitigation through primary and secondary treatment and chlorination are effective.

Santos Response

All EMPs have been updated to include the following text.

- Ensure that all health risks associated with the disposal and reuse of treated sewerage are mitigated through appropriate primary and secondary treatment.

Refer to **Attachment B** for all revised EMPs.

5.4.2.1 Market Demand for Recyclable Waste

Respondent Comment

Maranoa Regional Council operates refuse tips and recycling facilities throughout the region. The recycling operation is carried out as a service to residents but is not commercially viable. Recyclable materials generated by the GLNG project would be received at the landfill sites, but commercial refuse charges would apply.

Santos Response

Santos notes Maranoa Regional Council's position. Santos will work closely with local councils regarding refuse charges prior to disposal of GLNG Project related wastes.

5.4.3 Waste Separation

Respondent Comment

Banana Shire states that the proponent should be aware that not all waste types are collected with Banana Shire, thus making effective waste separation difficult.

The proponent should check what recyclable wastes types are able to be recycled through Banana Shire before making efforts to source separate. Possibly could take recyclables to facilities in other shires.

Santos Response

Santos will work closely with local councils in regards to local recycling facilities availability and capability prior to disposal of GLNG Project recyclable material. All waste material will be disposed of at appropriately licenced facilities.

Respondent Comment

Department of Environment and Resource Management suggests to include information regarding the storage of reverse osmosis concentrate in ponds and its potential to adversely impact on groundwater if not properly constructed and maintained. Also detail mitigation measures to be undertaken to ensure

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groundwater will not be contaminated by leakage of reverse osmosis concentrate from storage ponds. Reference should be made to engineering standards to be adopted and to monitoring and reporting regimes.

Santos Response

An assessment of potential leakage from the storage of Associated Water is included in EIS Appendix P1 with risk and mitigation measures summarised in EIS Section 6.6.

Attachment D2 includes an assessment of the methods for containment of brine and the mitigation measures to be taken to prevent leakage and uncontrolled release from storage ponds. Section 8.5.3 of **Attachment D2** identifies the potential impacts of uncontrolled discharges of this material to the environment and recognises it as a higher risk. Section 8.10.2 of **Attachment D2** incorporates a series of mitigation measures to be used for the construction and operation of the storage ponds, which will significantly decrease the likelihood of uncontrolled releases or leaks. These include using liner systems, and embankment and spillway designs to reduce the likelihood of these occurring.

5.5 Decommissioning of the Project

No submissions were received for this section.

5.6 Summary of Findings

No submissions were received for this section.