16 WASTE MANAGEMENT

Chapter 16 describes the waste generated by the construction and operation of the Gas Field Component of the Queensland Curtis LNG (QCLNG) Project and the measures proposed by QGC to manage this waste.

16.1 PROJECT ENVIRONMENTAL OBJECTIVES

The Project environmental objectives for waste management are to:

- minimise waste generation and maximise reuse and recycling of waste products
- transport, store, handle, and dispose of waste in a manner that does not cause contamination of soil, air or water.

16.1.1 Corporate Standard

QGC is committed, under business principles developed by its parent, BG Group, to employing design and construction techniques that minimise the use of resources and generation of waste across the Project.

QGC has reviewed the current Queensland and Commonwealth waste management legislation. It has framed its existing waste management policies and procedures for the QCLNG Project to accommodate these legislative requirements.

In all cases, the more comprehensive standards shall take precedence. QGC's philosophy and standards for waste disposal are detailed in *Volume 1* in addition to both the Commonwealth and Queensland legislative requirements for waste disposal.

Relevant legislation includes, but is not limited to:

- *Environment Protection Act 1994* (Qld) (*EP Act*)
- Environmental Protection Regulation 2008
- Environmental Protection (Waste Management) Policy 2000
- Environmental Protection (Waste Management) Regulation 2000.

QGC will require an Environmental Authority under the *EP Act* prior to a petroleum lease application being granted by the Department of Employment, Economic Development and Innovation (formerly the Department of Mines and Energy).

Under Schedule 5 of the EP Regulation, the Gas Field will trigger the following Level 1 petroleum activity:

- a petroleum activity that is likely to have a significant impact on a category A or B environmentally sensitive area
- a petroleum activity that includes a Chapter 4 activity (as described in

Schedule 2 of the EP Regulation 2008) for which an aggregate environmental score is stated.

The Chapter 4 activities are likely to include:

- No. 08 Chemical storage
- No. 09 Hydrocarbon gas refining
- No. 15 Fuel burning
- No. 16 Extractive and screening activities
- No. 17 Abrasive blasting.
- No. 18 Boilermaking or engineering
- No. 38 Surface coating
- No. 56 Regulated waste storage
- No. 57 Regulated waste transport
- No. 58 Regulated waste treatment
- No. 60 Regulated waste disposal
- No. 62 Waste transfer station
- No. 63 Sewage treatment.

These activities relate directly or indirectly to waste management.

16.2 WASTE GENERATED

Gas Field wastes can be categorised as construction and operations waste and support services waste. Construction and operations waste consists of all the wastes generated by field infrastructure including wells, field compression stations (FCS), central processing plants (CPP), gathering systems, trunk lines, Associated Water production and water treatment facilities. Support services waste includes that generated by offices, camps and warehouses.

16.2.1 Construction and Operations Waste

16.2.1.1 Wells

Waste generated from the drilling of wells will primarily constitute drilling mud and Associated Water. Well sites that operate drill rigs 24 hours per day, and that are remote from existing camps, may have associated small drilling camps generating support services waste.

Waste oil will be generated from drilling operations and equipment maintenance. Associated Water is separated at the wellhead.

16.2.1.2 Field Compression Stations and Central Processing Plants

The primary waste generated at the FCSs and CPPs will be oily water. Other wastes include oily rags, used parts and support services waste associated with the control rooms.

Oil is to be used as a lubricant at these facilities. Used oil will be removed from the gas stream by a series of separators throughout the compression process and during regular maintenance of individual compression units.

Water suspended in the coal seam gas (CSG) will passively separate from the gas during the field compression process, with the triethylene glycol (TEG) units at the processing plants actively removing water from CSG. During both processes, wastewater will be associated with some amount of oil.

Oily water will be sent to an oily water storage tank, then to oily water ponds via an interceptor pit. The oily water storage tank and interceptor pit will trap most of the oil. Only trace amounts of oil in the water will be disposed of in the high-density, polyethylene (HDPE)-lined oily water ponds. The oily residue will be removed off-site via licensed waste transporters for disposal.

16.2.1.3 Gathering Systems

Gas- and water-gathering pipelines will be constructed of HDPE, generally 160 mm or 320 mm in diameter. Waste generated during the construction of gathering infrastructure includes HDPE offcuts, pipe delivery packaging and coating material. Wastes associated with pipeline operations will be minimal: the primary waste will be Associated Water, which must be routinely removed from low-point drains at various locations along the gas gathering line. This water is tested and, if below the trigger value of 2,000 parts per million (ppm) total dissolved solids (TDS), is released at the low point drain to land. If above the trigger value, it is removed to existing evaporation ponds for disposal.

16.2.1.4 Associated Water

Associated Water is the primary by-product of CSG production. The management of Associated Water and of storage ponds containing Associated Water has been addressed separately in *Volume 3, Chapter 11.*

Apart from the Associated Water, the primary source of waste will be stripped topsoil and cleared vegetation during the construction phase of storage ponds.

16.2.1.5 Water Treatment Facilities

Brine and salts will be generated through the treatment of Associated Water, as well as used treatment facility components. Management of brine and salts is described in *Volume 3, Chapter 11*.

16.2.1.6 Green waste

Where possible, facilities for green waste will be located on pre-disturbed land. Some vegetation clearing will occur during the construction of infrastructure. Where practical, cleared vegetation will be re-spread or mulched to aid in restoration.

16.2.2 Support Services Wastes

16.2.2.1 Office Wastes

Generally, office waste will consist of consumables such as paper, printer cartridges and from food consumption. Each office will have a small septic sewage system that will treat and irrigate the waste generated at the office kitchen and bathrooms.

16.2.2.2 Camps

Waste generated from the camps will include general domestic wastes such as food and other putrescible waste disposed to landfill, cooking oils collected by licensed contractors, effluent from the onsite sewage/wastewater treatment facility and recyclable containers.

In terms of general waste, approximately 20 litres (0.02 m^3) will be produced per person per day.

Sludge from wastewater treatment facilities will be removed as required. Based on current camp operations (approximately 200 people per camp), this will amount to approximately 10,000 to 15,000 L per camp every one to two months.

16.2.2.3 Warehouse

Apart from general office materials, the main source of waste from warehouses will be packaging materials. This will include plastic and other wrapping material, cardboard and paper packaging and wooden crates and pallets.

Waste oils and oil-contaminated materials (such as rags) will be stored at the warehouse until a licensed waste transporter removes them to an appropriately licensed facility.

Each warehouse will have a kitchen and bathroom facilities serviced by a small septic tank.

16.2.3 Details of Wastes

Typical wastes generated in the construction and operation of the Gas Field are set out in *Table 3.16.1.* The key classifications identified for each waste stream are recyclables, solid inert, putrescible waste and liquids (e.g. oils and drilling mud).

Regulated wastes within the meaning of the *EP Act* and state regulations will be disposed of to licensed facilities using a trackable process. This will be achieved through the use of Department of Environment and Resource Management (DERM) licensed waste operators.

Table 3.16.1 Waste Types and Classification

Type	Construction and/or operational activity	Classification	Approximate Volume
Tyres	Vehicle, plant and equipment maintenance	Recyclable	This is handled by contractors for the most part.
Associated Water	Well testing and production	Liquid	0.1 - 0.5 ML per well/day
Saline brine/salt	Water treatment	Regulated	Saline brine = 10%,and salt = 1% of the volume of Associated Water treated
Drilling fluids	Well installation/drilling	Liquid – non-regulated	150 kL per well
Liquid waste from human waste storage facilities or waste treatment, including pump-out waste and sewage	Camp activities	Liquid – regulated	200 - 250 L/person/day
Oils, lubricants	Vehicle, plant and equipment maintenance Well installation. Gas separation and treating operations	Liquid – regulated	78 kL/month
Engine coolant	Vehicle, plant and equipment maintenance	Liquid – regulated	3.6 kL/month
Spent TEG.	Plant dehydrator maintenance	Liquid – regulated	2.6 kL/month
Batteries, gasket adhesives, cutting lubricants, paint, cleaning agents and water treatment chemicals	Vehicle, plant and equipment maintenance. Operation of reverse-osmosis (RO) facility	Regulated	1 m^3/month
Wastes from food preparation at camp sites	Camp activities	General solid waste (putrescible)	20 L/person/day
Recyclables – Glass, aluminium cans, plastic bottles, welding rods, scrap metal and offcuts, scrap HDPE, paper, printer	Operation of construction camps Materials packaging. Construction of facilities	General solid waste (non-putrescible)	3.5 L/person/week

Type	Construction and/or operational activity	Classification	Approximate Volume
cartridges, packaging material and cardboard	Repairs and maintenance		
Soils (top soil, fill materials), contaminated soils	Clear and grade of drill pads and flowlines Trenching Backfilling Maintenance.	Soils are stockpiled and reused and not considered to be waste. General solid waste (non-putrescible)	Contaminated soils are incident based.
Drained and crushed oil filters, oil soaked rags, oil absorbent materials.	Vehicle, plant and equipment maintenance	Regulated	2.5 m^3/month
General rubbish (e.g. used containers and drums, synthetic material fibres).	Survey and seismic work Flowline construction and operation Operation of temporary construction camps and maintenance workshop.	General solid waste (non-putrescible)	41 m^3/month
Oily water/sludge, chemical sludge, spent activated carbon	Water treatment and disposal operations	Regulated	15 kL/week
Concrete waste	Hardstand areas, infrastructure, drill holes	General solid waste (non-putrescible)	<10 m^3/contruction site
Green and timber waste	Infrastructure construction	General solid waste (putrescible)	0-100 t/ha

16.3 IMPACT ASSESSMENT

Potential impacts of waste generated by the Gas Field activities include:

- water pollution caused by release or spills of solid or liquid waste either directly to receiving waters or indirectly via stormwater run-off to receiving waters from waste-contaminated sites
- land contamination caused by spills or inappropriate disposal to soils of solid and liquid waste generated by Gas Field activities and operations
- groundwater contamination caused by release or spills of solid or liquid waste to land and subsequent transport of mobile or soluble waste constituents to the groundwater resource
- littering caused by lack of suitable containment measures for general rubbish, scrap metal or other waste
- odours caused by improper storage or treatment of putrescible waste
- decreased abundance and altered distribution of fauna and flora
- increased abundance of vermin and spread of disease
- loss of vegetation and increasing sodic condition of soils caused by improper release or spills of wastewater with high total dissolved solids (TDS) concentrations
- loss of visual amenities caused by poorly executed land-clearing activities and improper storage of green waste in cleared areas.

16.4 POTENTIAL LAND CONTAMINATION

Land contamination is discussed in detail in *Volume 3, Chapter 6.*

16.5 STORMWATER MANAGEMENT

Stormwater generated from hardstand and other infrastructure areas around the site will be managed. However, it is not necessary or feasible to manage all stormwater across the entire Gas Field, which covers 468,000 ha. Management of stormwater at various infrastructure locations is described below.

16.5.1.1 Well sites

During construction, stormwater flows from undisturbed areas on the site will be directed around the construction area. As approximately 50 per cent of the Gas Field is level to gently undulating terrain, QGC does not expect it will require significant measures to control run-off in these areas. Measures will be put in place to ensure that stormwater is not concentrated and is directed to stable areas (refer to *Volume 3, Chapter 4)*.

16.5.1.2 Right of Way and Pipelines

The easement of the gas- and water-gathering system will be managed in accordance with standard pipeline management techniques as set out in the APIA Code of Environmental Practice for Onshore Pipelines. This will include ensuring that there are appropriate stormwater controls.

Stormwater management on the right-of-way (RoW) and for pipeline construction will be managed via erosion and sediment control measures described in *Volume 4, Chapter 4.*

16.5.1.3 Hardstand Areas

Hardstand areas will be required for compressors, camp sites, water treatment facilities and administration areas. During construction, stormwater flow from undisturbed areas on the site will be directed around construction areas.

As approximately 50 per cent of the Gas Field is level to gently undulating terrain, QGC does not expect significant measures will be necessary to control run-off. Measures will be put in place to ensure that stormwater is not concentrated and is directed to stable areas. These are detailed in *Volume 3, Chapter 4*.

The stormwater system for the compression facilities will be designed to ensure that clean stormwater is kept separate from potentially contaminated stormwater run-off. Overland flow from adjacent areas will be diverted around the site with the installation of a bund and clean stormwater on-site will be captured and directed to areas that will allow any sediment to settle out.

Stormwater management will be controlled on all CPPs and FCSs through the use of berms and bunding to segregate the site, with water collected from this zone flowing into a compressor drainage sump pit that feeds into a lined interceptor pit.

These controls will serve a dual purpose of excluding overflow from the interceptor pit in the event of significant rainfall.

Areas that may potentially be contaminated, such as ground around engines, transformers and oil and chemical storage, will be bunded and the drains directed to an oily water separator. Where practicable, the drains will be covered to minimise rain and groundwater ingress.

Diversion channels will be installed around all hardstand areas to prevent stormwater flowing through site infrastructure. These diversion channels will be used to direct water around infrastructure to undisturbed areas where it can dissipate.

16.5.1.4 Ponds

The engineering design of all ponds will accommodate appropriate stormwater management. Specifications of this pond design are detailed in *Volume 2, Chapters 7 and 11.*

Stormwater management for the Gas Field pond's construction will include:

- daily monitoring of weather forecasts during construction to enable adequate planning measures to be put in place each day
- installation of sediment fences to prevent soil transport into watercourse
- installation of berms to direct flow away from the construction area and onto stable ground
- provision of breaks in vegetation and soil stockpiles to minimise impacts on overland flows.

Diversion channels will be incorporated into pond design and will serve dual purposes by incorporating the pond spillway and management of stormwater. Diversion channels will be used to protect the pond embankment from water collecting around the pond toe and destabilising the banks. The diversion channels will direct water around the toe and channel it away to a stable area to dissipate.

16.5.1.5 Additional Storage Areas

All storage areas with the potential to release contaminants will be surrounded by a bund-type impervious wall. Wastes from the contaminated area will be directed into a collection pit and grating will be provided to contain loose solids. The contaminated stormwater inlet will be at least 1 m wide to prevent turbulence washing wastes from the interceptor pit. Collected waste will be disposed of using a licensed contractor.

16.6 MANAGEMENT AND MITIGATION MEASURES

QGC will develop a detailed Waste Management Plan for the Gas Field.

16.6.1 Objectives

The overall objectives of the Waste Management Plan will be to:

- minimise the amount of waste created during the Project
- recycle waste materials where practicable
- minimise the impact of any construction activities on the environment through minimisation of wastes
- minimise the interim storage volumes and duration of liquid or solid waste on-site
- comply with relevant environmental legislation regarding general and regulated waste disposal
- design and implement waste control systems that avoid environmental harm to groundwater, surface water, soils, fauna and flora
- design and implement waste control systems that result in reduced offensive odours, loss of visual amenity and litter and reduced waste transport
- investigate opportunities to coordinate waste disposal with organisations in the area that generate similar wastes to minimise travel movements between appropriate waste disposal facilities
- minimise impacts to human health.

QGC aims to promote best practice of waste management including disposal of waste products both on-site (through appropriate maintenance of waste disposal areas) and off-site (through awarding waste disposal contracts to licensed and environmentally responsible companies).

16.6.2 Indicators

Table 3.16.2 describes the key performance indicators for waste management and deliverables and objectives for each indicator.

Table 3.16.2 Key Performance Indicators

Description of indicator	Responsible person	Deliverable	Target for indicator
Waste streams identified and quantities reported	Project Environment Officer	Register of waste generated Reports circulated to relevant personnel	All waste recorded and reported
Waste Management Plan developed	Project Environment Manager	All identified waste streams reviewed for optimal, efficient and effective management	Completed Waste Management Plan
Duration of waste storage	Project Environment Manager	Calculate existing day's storage for all waste streams Identify opportunities to minimise the duration that waste is stored on site	Decline in average day's storage by waste type
Waste segregated and managed, recycling implemented	Project Environment Officer	Regular inspections of waste disposal areas	All waste disposed of correctly
Non-compliance with environmental legislation	Project Environment Manager	All waste management and disposal complies with relevant legislation	No instance of non-compliance with environmental legislation
Environmental monitoring	Project Environment Officer	On a regular basis sample environmental parameters from soil and water that may be affected by waste disposal	Environmental indicators do not show a worsening trend over time
Fauna and flora monitoring	Project Environment Officer	Fauna and flora is not harmed by waste management practices Pest species' numbers do not increase due to waste management practices	No fauna or flora harmed No increase in pest species numbers
Personnel and sensitive receptors complaints about waste	Project Environment Officer	Complaints register detailing complaints about litter, odour, soil or water contamination and visual amenity	No complaints due to waste management practices
Instances of ill-health due to waste management practices	Project Safety Manager	Waste management practices to not result in loss of health to personnel or sensitive receptors	No instances of ill-health caused by waste management practices
Where opportunity exists, reduce waste to landfill by recycling	Asset Manager	Register of recycled waste Reports circulated to relevant personnel	20 per cent of waste recycled All recycled waste recorded and reported
Site personnel trained in waste management requirements	Asset Manager	Training program	All personnel trained

16.6.3 Waste Management Strategy

Waste management strategies will comply with the *EP Act* and resource management hierarchy principles of "avoid, reuse, recycle, recover and disposal".

Table 3.16.3 details the waste management strategy by waste type and contains details about storage location, ultimate destination for waste, whether waste tracking is required by legislation, as well as the person responsible for waste management.

16.6.3.1 Liquid Waste Disposal Facilities

Due to the remote location of accommodation camps, they will not be able to discharge into existing sewerage systems. Each camp will have a system capable of treating the maximum amount of effluent generated from the kitchen and accommodation, likely to be 50 to 75 kL per day, or a maximum of 240 kL per day over the Gas Field at the various camps, based on estimates from existing operations.

Raw sewage will be gravity-fed into a pump well and balance tank(s) and will then flow through treatment units composed of a number of components, including:

- a primary tank that undertakes sedimentation, digestion and storage of solid matter
- balance tank for flow equalisation
- aeration tank to reduce organic matter
- clarifier for further removal of residual suspended solids
- final effluent tank for disinfection and storage of treated water
- filter feed tank, gravity-fed from the final effluent tank
- ultra-filtration membrane
- chlorine dosing
- final treated effluent tank with three days wet-weather storage.

Once sewage is treated to Class A Effluent standard, it will be used for irrigation. Each 250-person camp will require approximately 2.8 ha of irrigation area. The effluent disposal system will consist of a fenced (sediment fencing and bund), appropriately vegetated area, where treated effluent will be irrigated above-ground. Sludge from wastewater treatment facilities will be removed as required to a council wastewater treatment facility, but will typically consist of approximately 10 to 15 kL per camp every one to two months.

Table 3.16.3 Waste Management Strategy by Waste Type

Waste	Management techniques	Storage on Site	Destination	Waste Tracking	Responsible Person
Tyres*	Waste tyres will be stored at a central location for disposal off site to a licensed tyre disposal facility or removed off site by a contractor (if waste generated by a contractor).	Tyre storage area	Licensed tyre disposal facility	Yes	Warehouse Supervisor
Saline brine and salt from desalination of Associated Water	Discussed in *Volume3, Chapter 11*, *Associated Water*				
Drilling fluids, including waste oil* from drilling	Well-drilling mud and water will be stored in a sump on the well pad during drilling. Upon well completion the water and sediment will be left to dry out in the sump, which will then be filled and the area rehabilitated. Waste oil generated from drilling operations will be stored in 1,000 L containers on site. Once full, or when drilling operations are complete, the container will be emptied into the waste oil tank at the chemical storage facility before being removed by a licensed waste contractor.	Self-bunded 1,000 L containers on site	Licensed oil recycler or disposal	Yes	Warehouse Supervisor
Treated sewage effluent	Onsite treatment of wastewater. Treated effluent from waste-water treatment will be disposed of via surface irrigation.	Treated and irrigated	Irrigation	No	Camp Manager
Sewage sludge*	Sanitary bio-solids or sludge from camp sewage treatment operations will be disposed at commercially licensed offsite facilities as necessary. Sludge from the onsite wastewater treatment facilities will be pumped out periodically and transported to the nearest licensed wastewater treatment works.	Holding tank	Licensed sewage disposal contractor	Yes	Camp Manager
Waste oil, lubricants, fuels, engine coolant, spent TEG, surfactants, acids and alkalis*	The use of oils, chemicals, and related materials will be continuously reviewed to determine alternatives that are less hazardous or of smaller volumes thus reducing the total volume of regulated waste. Waste oils will be stored on site in appropriately designed aboveground petroleum storage tanks, with separate secondary containment bunds as necessary for aboveground tanks. Waste oils will be collected for offsite recycling through a commercially licensed waste contractor. Waste TEG gas dehydrating reagent will be stored in onsite petroleum-grade waste oil tanks and managed in the same manner as waste oils. Grease traps from each camp kitchen will be pumped out approximately once every month. About 1,000 L of grease trap waste will be removed each time by a licensed waste transport company for disposal at Regional Council's wastewater treatment works.	Waste oil storage area at warehouse	Licensed oil recycler or disposal	Yes	Warehouse Supervisor

Waste	Management techniques	Storage on Site	Destination	Waste Tracking	Responsible Person
Vehicle Batteries, gasket adhesives, cutting lubricants, paint, cleaning agents and water treatment chemicals *	Waste chemicals will be collected and disposed of through a licensed waste contractor, preferably one with recycling facilities. Waste chemicals that are not consumed will be stored in well maintained, covered, appropriate containers (original containers when possible), labelled with contents, and stored on site in accordance with regulated waste provisions.	On a bunded pallet in a lockable area	Licensed battery or other chemical disposal facility	Yes	Warehouse Supervisor
General waste (e.g. packaging and food scraps)	Putrescible solid waste will be stored in covered, standard general waste containers to prevent odours and public health hazards, and disposed of by a waste contractor. General rubbish and non-recycled glass, paper, plastics and related materials will be disposed of to landfill at a commercially operated facility. General camp waste will be taken for disposal at a local landfill.	General skip/wheelie bins	Disposal via contractor to local council facilities	No	Supervisor Camp Manager Administration Manager
Recyclables – Glass, Aluminium cans, plastic bottles, welding rods, paper, printer cartridges, packaging material and cardboard	Recyclable wastes (including glass, paper and plastic) will be segregated and recycled whenever possible. Recycling bins will be provided for general paper waste and printer cartridges. Recyclable general waste will be recycled by a contractor. Plastic takeaway containers and juice/milk bottles will be disposed of in yellow wheelie bins. Printer/toner cartridges will be disposed off in bin marked 'cartridges'. Paper to be recycled will be stored in small paper recycling boxes at each work station. These will be emptied into blue wheelie bins. Cardboard will stored in red wheelie bins. Aluminium cans will be donated for recycling and local fund raising. Waste cooking oil will be offered to local landholders for use as a fuel source. Cardboard and plastic packaging, metal wastes and waste oils will be collected in containers at the warehouses and removed for recycling or disposal, as appropriate, when required. Shredded paper waste from the warehouse offices will be re-used in packaging where possible, or recycled if supply exceeds demand.	Wheelie bins	Disposal to recycler via contractor	No	Warehouse Supervisor Administration Manager
Scrap metal, scrap HDPE offcuts	Scrap metal and plastics (e.g. HDPE offcuts) will be collected on site, stored at a central location and preferentially recycled (or disposed when necessary) at commercially licensed offsite facilities. Steel pipeline offcuts will be recycled by a scrap metal dealer.	Scrap metal bin recycled plastic bin	Metal recycler	No	Warehouse Supervisor
Soils (top soil, fill materials)	Stripped topsoil for ponds and hardstand areas will be stored in stockpiles for use in rehabilitation of the site following decommissioning at the end of the Project's lifespan.				Rehabilitation Supervisor

Waste	Management techniques	Storage on Site	Destination	Waste Tracking	Responsible Person
Oil filters* Oily rags*	Oil filters will be stored in a marked container that allows the oil to drain out but not escape. Oily rags will be stored in a marked oily rag bin.		Licensed oil disposal facility	Yes	Warehouse Supervisor
Oily water	Waste oils will be skimmed routinely from temporary oily wastewater dams and stored in onsite waste oil tanks for disposal by licensed waste contractors. Oily water ponds and interceptor pits will be pumped out periodically by a licensed waste company for treatment and disposal.	Separate oily liquid wastes and discharge the non-oily component to ponds.	Licensed disposal contractor	Yes	Project Supervisor/ Contract Superintendent
Absorbent material*	Absorbent material will be stored in the supplied disposal bags in a designated bin.		Licensed hazardous waste facility via contractor	Yes	Warehouse Supervisor
Oil drums*	Drums will be stored with lids on and stoppers in place.	Waste oil storage area	Drum recycler or supplier	Yes	Warehouse Supervisor
Chemical containers	Stored in designated area for periodic removal by licensed waste contractor.	Waste skip	General waste	No	Warehouse Supervisor
Oily water/ sludge,	Removal from oily pit separators	Oily wastewater dam	Licensed disposal contractor	Yes	Warehouse Supervisor
Concrete waste	Temporary bunds can be used for control of spillage from concrete pumps or trucks. Waste concrete slurry will be allowed to dry before disposal.		Licensed disposal contractor Truck rinse to ponds	No	Drilling Supervisor/ Contract Superintendent
Green waste	Cleared vegetation will be stockpiled for rehabilitation in designated and agreed areas.	In a designated area set aside for this sort of waste	Stay on site for rehabilitation activities	No	Project Supervisor/ Contract Superintendent
Timber waste (pallets, fencing, etc.)	Mulched or chipped if untreated. If treated wood, removed to council dump.	Onsite dump		No	Camp Manager

* refers to regulated wastes that usually have specific legislative requirements, including waste tracking.

16.6.3.2 *Waste Tracking*

The Environmental Protection (Waste Management) Regulation requires the tracking of wastes defined as Trackable Wastes in Schedule 1 of the regulation. The primary types of trackable wastes produced (with their waste codes in brackets) will be:

- grease trap waste (K110)
- oil and water mixtures or emulsions, or hydrocarbons and water mixtures or emulsions (J120)
- sewage sludge and residues, including night soil and septic tank sludge (K130).

The objectives of implementing a waste-tracking system are to:

- provide tracking of wastes of environmental concern from production to disposal, with the aim of ensuring that the waste is disposed in an environmentally appropriate manner
- ensure that only those facilities that have adequate treatment and disposal methods receive wastes
- promote producer responsibility to reduce the risk of illegal dumping and establish a system of accountability.

Any prescribed waste moving on roads, rail, water or air in Queensland is required to be accompanied by a Waste Transport Certificate stating the nature of the waste and any associated hazard.

All waste associated with Gas Field activities will be identified to determine if it is a regulated waste. If a particular waste stream is determined to be a regulated waste, QGC will contract a waste transporter with the appropriate DERM authority to collect and dispose of the waste. All procedures required by DERM will be followed.

16.6.3.3 *Council Waste Facilities*

Council waste facilities within Western Downs Regional Council will be used for waste disposal. It is not expected that waste generated by the Gas Field will compromise the ability of the council waste facilities to handle all waste. The majority of waste, by volume, will be wastewater generated by camps. The wastewater will mostly be treated and disposed of on-site, thereby minimising the impacts on council facilities.

16.7 CONCLUSION

Identified waste streams include general domestic waste, commercial and industrial waste and some hazardous waste. Waste management strategies, which take into account the remote location of the Gas Field Component and the necessity to provide a range of waste services, have been proposed to ensure proper disposal of these waste streams.

A Waste Management Plan has also been developed and forms part of a detailed Environmental Management Plan for the Gas Field, as detailed in *Volume 9* of this EIS. A summary of the impacts outlined in this chapter is provided in *Table 3.16.4*.

Table 3.16.4 Summary of Impacts for Waste Management

Impact assessment criteria	**Assessment outcome**
Impact assessment	Negative
Impact type	Direct
Impact duration	Short-term
Impact extent	Local
Impact likelihood	High

Overall assessment of impact significance: negligible.