28

WASTE MANAGEMENT

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28 Waste Management

This chapter provides a summary of the waste streams expected to be generated by construction, operation and eventual decommissioning of the Project and provides an assessment of environmental values that may potentially be impacted, and mitigation measures to achieve the stated environmental protection objectives.

Further details on waste generation and management measures are provided in the following chapters:

- Section 9 – Air Quality;
- Section 10 – Greenhouse Gas Emissions;
- Section 12 – Soils and Land Suitability;
- Section 13 – Geology and Landform;
- Section 14 – Groundwater;
- Section 15 – Surface Water;
- Section 16 – Aquatic Ecology;
- Section 17 – Terrestrial Ecology;
- Section 20 – Landscape and Visual Amenity; and
- Section 27 – Preliminary Hazard and Risk.

A cross reference to the locations where each of the requirements of the ToR has been addressed is given in Appendix B which references both the study chapters (Sections 1 through 34) and/or the Appendices (A through EE).

28.1 Legislative Context

The following legislation, policy and guidelines are relevant to waste management through all phases and activities of the Project including construction, operation and eventual decommissioning.

28.1.1 Commonwealth Requirements

In the Australian context, the following national legislation, policy, environmental goals and standards are relevant to waste management.

The *National Waste Policy: Less Waste, More Resources* (EPHC, 2009) builds on the *National Strategy for Ecologically Sustainable Development* commitments (COAG, 1992) to improve resource efficiency and reduce the environmental impacts of waste disposal. The National Waste Policy supports annual reporting of Project waste emissions to land, air and water through the national pollutant inventory (NPI).

Under the *National Environment Protection Measures (Implementation) Act 1998* (Commonwealth), the National Environmental Protection Council (NEPC) sets national environmental goals and standards for Australia through the development of National Environment Protection Measures (NEPMs). Currently, the following NEPMs are relevant to this Project.

- NEPM (NPI) sets out agreed national environment protection goals to collect an information base of emissions and transfers of substances on the reporting list that are accessible to all sectors of the community.
- NEPM (Movement of Controlled Waste between States and Territories) provides for tracking interstate transport of controlled wastes and provides lists of waste streams, specific constituents and hazardous characteristics to identify whether materials are hazardous.
- NEPM (Used Packaging Materials) requires businesses producing a significant amount of packaging waste to self-regulate to a specified standard to ensure their packaging materials are recycled or reused appropriately. Failure to comply will result in a fine.

Hazardous Waste (Regulation of Exports and Imports) Act 1989 (Commonwealth) regulates the export and import of hazardous waste to ensure that hazardous waste is disposed of safely so that human beings and the environment, both within and outside Australia, are protected from the harmful effects of the waste.

28.1.2 State Requirements

In the State of Queensland, the following legislation, policy and guidelines apply.

Environmental Protection Act 1994 (EP Act) (Qld) is administered by the EHP, and aims to protect Queensland's environment by promoting ecologically sustainable development.

The EP Act defines waste as anything that is left over, or an unwanted by-product from an industrial, commercial, domestic or other activity, or surplus to the industrial, commercial, domestic or other activity generating wastes.

General waste is defined by the *Environmental Protection (Waste Management) Regulation 2000* (EP (Waste Management) Regulation) (Qld) to mean waste (such as commercial waste, domestic waste or recyclable waste) other than regulated waste.

Environmental Protection Regulation 2008 (EP Regulation) (Qld) defines regulated waste as waste that is commercial or industrial waste, whether or not it has been immobilised or treated, and is of a type, or contains a constituent of a type, mentioned in Schedule 7 of the EP Regulation. Certain regulated wastes are considered trackable waste, and the EP Regulation provides a process to allow such wastes to be tracked from point of generation to processing, recycling or disposal facilities.

Certain waste management activities, including disposal and transport of waste, are defined as environmentally relevant activities (ERAs) and require approval under the EP Regulation. However the *Environmental Protection (Greentape Reduction) and Other Legislation Amendment Bill 2012* (the Greentape Reduction Bill) will introduce an integrated environmental approval process for all ERAs, which may need to be considered further in future.

Waste Reduction and Recycling Act 2011 (Qld) repeals the *Environmental Protection (Waste Management) Policy 2000* (Qld) and amends the EP Act and Regulation and encourages the proper use of resources by improving ways of reducing and dealing with waste, including allowing for introduction of a price signalling approach, i.e. waste levy.

A waste levy was introduced across Queensland on 1 December 2011 following the passing of legislation on the 28 October 2011. A levy of $35 per tonne was applied to commercial and industrial waste and construction and demolition waste streams, with $50 per tonne applied to regulated waste and $150 per tonne for higher hazard regulated waste. However the newly elected Queensland Government has confirmed that the waste levy will be removed, effective from 1 July 2012.

However, while the State Government have reduced the landfill levy to $0, the legislation underpinning the levy, the *Waste Reduction and Recycling Bill 2011*, has not been repealed so that the levy could be returned in future. While the levy repeal has been confirmed, a number of uncertainties remain in regard to the Queensland Waste Strategy, which was largely funded by the levy.

Queensland waste reduction and recycling strategy 2010-2020 (DERM, 2010) aims to protect the environment by encouraging an increase in recovery and recycling of resources across all waste streams. The strategy emphasises reduction in waste generated and diversion from landfills, which aids in reducing greenhouse emissions from waste. The strategy also aims to reduce environmental impacts from illegal waste disposal.

Queensland EHP has worked with industry to prepare guidelines to support environmental compliance. Relevant policy and guidance include *Waste classifications* (EHP, 2011), *ERA 60 Waste disposal – Landfill siting, design, operation and rehabilitation* (EHP, 2010) and *Preparing an environmental management plan for CSG activities* (EHP, 2010).

28.1.3 Local Requirements

The Project comes under the jurisdiction of Central Highlands Regional Council, Isaac Regional Council and Whitsundays Regional Council local government areas (LGAs). Refer to the Land Use and Tenure chapter (Section 19) of this EIS for key local government requirements applicable to the Project.

28.2 Waste Impact Assessment

This waste impact assessment comprised of a desktop study to identify potential waste streams generated from activities associated with the construction, operations and decommissioning of the Project, based on design information available at the time of the assessment (Arrow, 2012).

The assessment included the identification of the likely impacts associated with waste streams generated during each phase of the Project as well as management options for waste minimisation and disposal. Waste types and quantities were based on information from the Arrow existing operations and expected types and quantities for the Project.

28.2.1 Existing Environment and Environmental Values

The existing environment that could be impacted by the generation of waste from Project activities has been described in the discussion of existing environment in the Air Quality chapter (Section 9), the Contaminated Land chapter (Section 11), the Soils and Land Suitability chapter (Section 12), the

Groundwater chapter (Section 14), the Surface Water chapter (Section 15), and the Landscape and Visual Amenity chapter (Section 20) of this EIS. The proposed Project activities expected to generate waste and types of waste generated is outlined in the Project Description chapter (Section 4).

The key environmental values that have the potential to be impacted by waste are:

- Life, health and wellbeing of people;
- Diversity of ecological processes and associated ecosystems;
- Soils and land use capability, having regard to economic consideration; and
- Management of finite natural resources.

28.2.2 Issues and Potential Impacts

The potential direct and indirect impacts of the Project on environmental values have been assessed using one of three impact assessment methods: significance assessment, risk assessment and compliance assessment; this study has used risk assessment. For further details see the Impact Assessment Method chapter (Section 6) of this EIS.

Potential waste management issues associated with Project activities include:

- Uncontrolled releases of waste resulting from failure to properly manage waste storage and containment systems could potentially result in soil and water contamination and impacts on visual amenity; and
- Controlled releases of waste to the environment (air, land, water) could potentially lead to adverse health and ecological impacts.

The potential impacts that are applicable to waste generation include:

- Wastage of raw materials (e.g. wastage of construction materials such as steel and concrete);
- Lost opportunity for resource re-use / recycling if product is disposed;
- Additional transport movements and fuel usage for cartage of waste;
- Consumption of landfill air space (where waste sent to landfill);
- Generation of landfill leachate and landfill gas to be managed (from waste sent to local landfills);
- Risks to human health or safety (e.g. dust, odour, exposure to hazardous substances); and
- Pollution of soil, groundwater, or surface water (through accidental spills or releases).

28.2.3 Environmental Protection Objectives

The environmental protection objectives relevant to waste management are:

- Comply with regulatory requirements and Arrow policy and procedures;
- Minimise the waste generated throughout the Project life;
- Maximise the reuse and recycling of waste materials produced, and divert from landfill disposal; and
- Store, handle, transport and dispose of waste in an environmentally responsible manner that does not cause harm or contamination to soil, air or water.

28.3 Waste Management Strategy

Avoidance, mitigation and management measures have been proposed in accordance with the preferred waste management hierarchy (Figure 28–1) to achieve the identified environmental protection objectives.

The following hierarchy of management options will apply to waste generated during Project activities:

- Source reduction: avoid or reduce practices that result in the generation of wastes;
- Reuse: where practical, reuse waste materials that are in their original form;
- Recycling: where practical, send waste to appropriate facilities to convert waste into other usable materials;
- Treatment: where waste can no longer be reused or recycled, make safe for disposal; and
- Disposal: disposal by appropriately licensed operators either through landfilling or incineration.

Figure 28-1 Waste Hierarchy (DERM, June 2010)

The Arrow *Health Safety and Environment Standards* (Arrow, 2012) for Waste set out corporate expectations to manage the risks associated with waste generation, storage, treatment and disposal at Arrow sites. The *Environmental Standard for Coal Seam Gas Water* applies to the management of CSG water and salt waste. The *Environmental Standard for Air Quality* applies to emissions to air.

28.3.1 Waste Avoidance

Waste avoidance and resource efficiency is achieved primarily in the design phase of the Project through cleaner production, i.e. consideration of alternative materials and products, using efficient production and construction techniques and the application of sustainable procurement practices including supply contract provisions that utilise performance targets to encourage sustainable waste management practices.

Production technologies will be designed and production practices implemented to minimise resource consumption and increase production efficiency. In general, cleaner production will be achieved through a selection of one or more of the following:

- Input substitution (less toxic alternatives or modularised items including flare systems, high voltage substations, variable speed drives for compressors, oily water handling and loading facilities, instrument and plant air equipment, control and communications equipment, fire and gas detection and protection equipment);
- Product reformulation (e.g. fraccing fluids are free from benzene, toluene, ethylbenzene and xylene (BTEX), packaging reduction);
- Production process modification (selection of the best available practicable technologies);
- Effective operation and preventative maintenance program (selection and use of the most appropriate processes and equipment and management practices);
- Capture and reuse of resources that are otherwise wastes (drip pans and spill containment devices for chemicals and oils for reuse / recycling, which also minimises potential for soil to be contaminated and require disposal); and
- Closed-loop recycling (where a product is recycled and used again in the same form, e.g. water, salt, drilling fluids).

Mitigation measures involving cleaner production technologies and practices are described in the Air Quality chapter (Section 9), the Contaminated Land chapter (Section 11), the Soils and Land Suitability chapter (Section 12), the Surface Water chapter (Section 15) and the Preliminary Hazard and Risk chapter (Section 27) of this EIS.

28.3.2 Waste Reuse

Waste streams will be assessed for potential reuse, and adequate containment provided for source segregation and storage of reusable materials. Where practical, the following reuse strategies may be implemented.

- Reuse soil or cleared vegetation for fill or landscaping purposes onsite, or alternatively offsite (subject to testing for contamination from heavy metals or hazardous organic compounds);
- Set up supplier arrangements for return and reuse of excess chemicals, packaging materials, scrap metal, heavy duty plastics and wooden pallets;
- Encourage reusable packaging such as intermediate bulk containers; and
- Reuse chemical containers to store waste, where practicable.

Reuse opportunities related to CSG water are discussed in the Surface Water chapter (Section 15) of this EIS.

28.3.3 Waste Recycling

The Project will generate a number of waste materials that can be recycled to generate products that can be utilised for a beneficial reuse. There will be few wastes that have a market demand; however Arrow will review the marketability of its waste for recycling (and reuse) on a regular basis to ensure new and emerging opportunities for waste reuse are identified and maximised.

Where practical, Arrow will consider recycling opportunities for the following waste materials generated throughout the Project phases.

- Drilling cuttings may be recycled for use in fill / construction material, road base or soil conditioning;
- Wastewater may be treated to maximise beneficial reuse (refer to the Surface Water chapter (Section 15) of this EIS);
- Salts produced as a by-product of the wastewater treatment may be processed to recover products for possible beneficial use, including conventional salt (NaCl), bicarbonate and carbonate salts (bi-carb soda, soda ash and calcium carbonate) via crystallisation or enhanced evaporation treatment options such as:
  - conventional solar evaporation in storage dams; and/or
  - enhanced evaporation using thermal, chemical and/or mechanical assistance.
- Waste oils can be collected for recycling by a licensed operator;
- Construction materials, including off cuts and timber, can be collected for recycling by a licensed operator;
- Scrap ferrous and non-ferrous metals can be collected for recycling by a licensed operator; and
- Paper and cardboard, glass, some plastics (e.g. poly pipe), aluminium and tin can be recycled.

Where practical, facilities will be made available to promote source-separation, collection and storage of recyclable components of the waste stream. For example, colour-coded bins may be used to promote segregation of cardboard / paper, steel, glass and aluminium cans in administration and accommodation buildings. Separate skips may be used to maintain segregation for storage and transportation, to avoid contamination and maximise economic recycling in preference to disposal to landfill.

28.3.4 Treatment

Where necessary, wastes will be subject to appropriate treatment to make safe for transport and disposal.

Where untreated water is unable to be used, wastewater will be treated to maximise beneficial reuse; this process and preferred technology options are discussed in the Surface Water chapter (Section 15) of this EIS.

In the absence of other reuse or disposal options such as product recovery discussed in Section 28.3.3, salt waste will be dried and transported to purpose built regulated waste facilities.

28.3.5 Waste Disposal

Where reuse and recycling options are ruled out, general waste will be removed to an appropriately licensed waste disposal facility. Regulated waste must be removed by a licensed waste transporter.

There are a number of landfills and waste transfer stations that currently exist across the Isaac, Central Highlands and Whitsundays LGAs. Commercial waste processing facilities are also licensed to operate in the region. The locations identified in Table 28–1 accept commercial, industrial, construction and demolition waste.

Table 28-1 Existing Licensed Waste Management Facilities near the Project

Operator	Location	Environmentally Relevant Activity	Threshold	Waste Accepted
Central Highlands Regional Council	Gemfields, Rubyvale-Sapphire Road	ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
Central Highlands Regional Council	Emerald, Glasson Street	ERA 56 Regulated waste storage	2 operating a facility for receiving and storing regulated waste other than tyres	Regulated waste other than tyres
Central Highlands Regional Council	Emerald, Lochlees Road	ERA 56 Regulated waste storage	1 operating a facility for receiving and storing 5 t or more or 500 or more equivalent passenger units, of tyres or parts of tyres	Scrap tyres
		ERA 60 Waste disposal	2(d) operating a facility for disposing of, in a year, more than 10,000 t to 20,000 t of only general waste or general waste and any of any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
Central Highlands Regional Council	Springsure, Tambo Road	ERA 60 Waste disposal	1(a) operating a facility for disposing of, in a year, less than 50,000 t of regulated waste or regulated waste and any, or any combination of general waste; limited regulated waste or if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste

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Operator	Location	Environmentally Relevant Activity	Threshold	Waste Accepted
Central Highlands Regional Council	Blackwater, Ardurad Road	ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
Central Highlands Regional Council	Rolleston, western side of Rolleston	ERA 60 Waste disposal	1(a) operating a facility for disposing of, in a year, less than 50,000 t of regulated waste or regulated waste and any, or any combination of general waste; limited regulated waste or if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
Central Highlands Regional Council	Tieri, Crinum Road	ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
Isaac Regional Council	Clermont, Turrama Road	ERA 60 Waste disposal	2(b) operating a facility for disposing of, in a year, more than 2,000 t to 5,000 t of only general waste and any combination of limited regulated waste that is no more than 10% of the total amount of waste received at the facility or – if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 56 Regulated waste storage	2 operating a facility for receiving and storing regulated waste other than tyres	Regulated waste

Operator	Location	Environmentally Relevant Activity	Threshold	Waste Accepted
Isaac Regional Council	Moranbah Landfill, Goonyella Road	ERA 60 Waste disposal	2(c) operating a facility for disposing of, in a year, more than 5,000 t to 10,000 t of waste of any, or any combination of regulated waste; general waste; limited regulated waste; if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 56 Regulated waste storage	2 operating a facility for receiving and storing regulated waste other than tyres	Regulated waste
Whitsundays Regional Council	Proserpine, Main Street	ERA 60 Waste disposal	1(a) operating a facility for disposing of, in a year, less than 50,000 t of regulated waste or regulated waste and any, or any combination of general waste; limited regulated waste or if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 60 Waste disposal	2(e) operating a facility for disposing of, in a year, more than 20,000 t to 50,000 t of any, or any combination of generation waste; limited regulated waste that is no more than 10% of the total amount of waste received at the facility; if the facility is in a scheduled are – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste, regulated waste
Whitsundays Regional Council	Proserpine, Kelsey Creek Road	ERA 60 Waste disposal	1(a) operating a facility for disposing of, in a year, less than 50,000 t of regulated waste or regulated waste and any, or any combination of general waste; limited regulated waste or if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
		ERA 60 Waste disposal	2(c) operating a facility for disposing of, in a year, more than 5,000 t to 10,000 t of waste of any, or any combination of regulated waste; general waste; limited regulated waste; if the facility is in a scheduled area – no more than 5 t of untreated clinical waste	General waste, construction and demolition waste
JJ Richards	Clermont, Gregory Highway	ERA 56 Regulated waste storage	2 operating a facility for receiving and storing regulated waste other than tyres	Regulated waste

Operator	Location	Environmentally Relevant Activity	Threshold	Waste Accepted
		ERA 8 Chemical storage	3(a) storing 10 m^3 to 500 m^3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3	Regulated waste
North Queensland Resource Recovery (NQRR)	Mackay, Crichtons Road	ERA 17 Composting and soil conditioner manufacturing	Manufacturing, from organic material or organic waste, 200 t or more of compost or soil conditioner	Organics
		ERA 54 Drum and container reconditioning	Operating a facility on a commercial basis for receiving and reconditioning metal or plastic drums or containers	Drums or containers (metal or plastic, may be contaminated by chemicals or hydrocarbons)
		ERA 55 Regulated waste recycling or reprocessing	2 operating a facility for receiving, and recycling or reprocessing, regulated waste to produce saleable products other than threshold 1 [Note: threshold 1 is operating a facility for receiving, and recycling or reprocessing, less than 10t of regulated waste in a day to produce saleable products with no environmental release other than to sewer or a licensed waste facility]	Regulated waste
		ERA 8 Chemical storage	3(a) storing 10 m^3 to 500 m^3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3	Regulated waste

Waste management assets in the region have been established by councils to service isolated rural communities. These waste disposal sites are generally not engineered facilities but unlined areas with limited, if any, leachate or landfill gas management systems. The open tip face is directly accessed for disposal of general solid waste.

Sites are often unmanned; however, councils conduct regular inspection and maintenance activities to ensure the applicable rules and regulations for use of these facilities are complied with. Users of regional council waste facilities must obey all signage and directions given by authorised regional council waste staff. These facilities may be closed during wet weather.

In general, facilities are provided to encourage source separation of clean green waste, timber, steel, batteries, engine oil, concrete / bricks and commingled recyclables for reprocessing.

Arrow will work with regional councils to assist them in planning of expansion and upgrade of any landfill where appropriate to ensure that waste generated from the Project can be accommodated.

In the event that onsite landfill disposal of wastes is allowed, the relevant permits and licences shall be obtained from the regulatory authority for the waste to be disposed prior to commencement. Only non-regulated wastes shall be disposed to an onsite landfill. Considerations involved in the selection of an appropriate landfill site include size, location, topography and geology and human health concerns.

The appropriate soil and erosion control measures including pest and vermin control shall be implemented in accordance with an approved landfill operations plan. The landfill site shall be surveyed when each disposal cell is full and has been covered.

Where required, groundwater monitoring wells shall be installed and regularly monitored to ensure that the groundwater is not contaminated.

28.4 Waste Management Measures

This waste impact assessment adopts the approach and estimations used for the Surat Gas Project due to similarities in type and scale of the projects. Therefore waste generation and management from the following Project activities were assessed:

- Construction of production wells (up to 6,625 wells, over its projected 35 to 40 year life);
- Construction of facilities and gas and water gathering system;
- Gas field operation; and
- Decommissioning and rehabilitation.

Construction of Production Wells

Production well construction involves site preparation (access roads, fencing, vegetation clearing, stripping and stockpiling of topsoil, grading and compaction, pit excavation or surface tank installation), drilling (using drilling fluids), cementing and casing.

Approximately 200 m^3 of drilling fluid will be used to drill a production well. Drilling fluids (commonly known as mud or drill mud) are used to maintain primary well control in the well and are pumped down the drill pipe to lubricate and cool the drill bit and flush out the drill cuttings. Arrow's preference is to use an inert, water-based drilling fluid largely comprised of fresh water and 2% to 3% of salts, which increases the mud weight and prevents natural clay in the formation from swelling. A small amount of bentonite (a clay-based product) may be added to coat the bore hole to stabilise the formation and prevent the loss of fluid.

Closed loop drilling systems will be used with solids control equipment treating fluid while drilling. Where possible, fluids will be re-used from well to well, or treated at a centralised facility for re-use; only in instances where it is not suitable for re-use or treatment, will it be disposed of at licensed facilities [B404]. Surface tank / skip storage will be provided to contain drill cuttings, drilling fluids and cement returns to minimise contamination when drilling in high quality agricultural areas [B405].

Arrow's current activities use drilling fluids comprised of clay stabilisers (calcium chloride, potassium sulfate, calcium chloride anhydrous and potassium chloride), cement additive (bentonite and calcium

sulphate), disinfectant (biocide), viscosifier (FS2000, XCD polymer and NIF 20 liquid), foaming agent (Tuff-Foam Ultra) and fluid loss prevention (Tuff-Loss).

Wastes generated during the construction of production wells include:

- Solid wastes (general trash, scrap metal, cleared vegetation, cut and fill material, empty drums and containers, timber, drill cuttings, cardboard and other packaging materials, wood pallets, soil contaminated with chemicals / oils).
- Liquid wastes (drill fluids, residual drilling mud, coal seam water, filters and filter media, used lubricating oil and filters, acids and caustics, unused or spent chemicals / oils / solvents, grey water, stormwater).
- Gaseous waste (CSG and engine emissions).

Construction of Gas and Water Gathering System and Associated Facilities

Construction of facilities includes field compression facilities (FCF), central gas processing facilities (CGPF), integrated processing facilities (IPF), which will include water transfer and treatment facilities (WTF), power generation and distribution, accommodation, access road, monitoring systems and ancillary facilities.

As far as practical, facilities will be designed using modular components that provide the ability to reconfigure to meet site requirements and relocate facilities during the Project life to accommodate changing Project needs.

Construction equipment will be moved to successive construction sites as the need arises, and the construction phase will involve the transportation of large items of plant and equipment to the site such as compressors, gas-engine generators, and other fabricated skid mounted equipment.

The gas and water gathering systems will consist of surface equipment for production wells and subsurface low- and medium-pressure pipelines. Low-pressure gathering lines will be used to deliver gas directly from production wells to production facilities. Medium-pressure gathering lines deliver gas from field compression facilities to both CGPFs and IPFs. The location of the gathering pipelines will be informed by technical, environmental, social and landowner constraints.

Construction of gas and water gathering system includes installation of surface equipment (such as wellhead, power supply, dewatering pump, wellhead gas / water separator, control valve, metering and telemetry / communications equipment), site preparation, trenching and laying pipe and hydrotesting.

Gathering pipelines are integrity tested by hydro-testing or pneumatic pressure testing prior to commissioning. Pipelines are filled with water and subjected to higher than normal operational pressures. Water used for hydro-testing will be diverted to holding dams for re-use or treatment and/or discharge. Water quality will be tested prior to release.

Construction of power supply and distribution facilities will involve land clearing for easement (45 to 60 m) required for overhead power lines, aligned to existing roads where possible, installation of suspension or strain poles and transmission line for power distribution consisting of 132 kilovolts (kV) or 66 kV line to key facilities. The overhead sub distribution system from key facilities to the field

infrastructure will require an easement width of 20 to 25 m depending on terrain, either steel or wood strain poles and 33 kV, 22 kV or 11 kV transmission line. Surface facilities such as substations and compressions facilities will follow a staged development; and any other substations will form part of the compression and water facility design. During the detailed design phase, the design and layout of the proposed power supply installation will be optimised.

In addition to the WTF discussed in the Surface Water chapter (Section 15) of this EIS, there is a requirement for significant amounts of storage to manage water through the collection, treatment and disposal phases. Dams necessary for water aggregation and the storage of brine from treatment facilities are to be fully lined to a standard determined by EHP. Other infrastructure associated with the water treatment and storage facilities may comprise transfer and distribution pipelines and pumps.

Waste generated from the construction of the power supply and gas and water treatment facilities include:

- Solid wastes (cleared vegetation, excess trench soils and rock, general trash, scrap metal, empty drums and containers, timber, plastic sheeting and pipe offcuts, cardboard and other packaging materials, contaminated soil, filter cartridges, batteries, concrete, general trash, scrap metal, cleared vegetation, cut and fill material, empty drums and containers, timber, plastic pipe, plastic sheeting, sandblast grit, cardboard and other packaging materials, wood pallets, oily rags and sorbents, electrical cable and tyre).
- Liquid wastes (domestic cleaners, fuel, greases, lube oils, glycol, paint waste, wash-out liquids, hydro-test water, sewage from amenity blocks, contaminated stormwater runoff, wastes from integrity testing, pesticides and herbicides, hydrostatic-test water, filters and filter media, used lubricating oil and filters, unused or spent chemicals / oils / solvents, paints, paint wastes and wastewater).
- Gaseous waste (vehicle, equipment and generator air emissions).

In instances where material and land conditions are suitable, drill cuttings may be reused by mixing with soil, aggregate or organic material for soil stabilisation or as soil conditioner to assist in the process of site rehabilitation. Where on-site re-use is not a suitable option, drill cuttings will be beneficially reused (e.g. in composting, fill material, construction material), and will only be sent for direct disposal to off-site landfill facilities where no other practical option exists [B421].

Waste that cannot be reused on site will be removed to an appropriately licensed facility. As with the production wells, waste liquids will be removed by a tanker for treatment at a nearby IPF [B422].

Gas Field and Facility Operation

The wastes generated by operation and maintenance activities are similar to those generated as construction wastes, although in much smaller quantities. Management measures will be the same as for construction phase.

Wastes generated during operation of the gas field and associated facilities could include:

- Solid wastes (filter cartridges, batteries, concrete, general trash, scrap metal, cleared vegetation, cut and fill material, empty drums and containers, timber, plastic pipe, plastic sheeting, sandblast

grit, cardboard and other packaging materials, wood pallets, oily rags and sorbents, electrical cable and tyres).
- Liquid wastes (domestic cleaners, fuel, greases, lube oils, glycol, paint waste, wash-out liquids, hydro-test water, sewage from amenity blocks, contaminated stormwater runoff, wastes from integrity testing, pesticides and herbicides).
- Gaseous waste (vehicle, machinery and generator air emissions).

Decommissioning and Rehabilitation

Minimal volumes of waste are anticipated to be produced during the decommissioning of the Project and rehabilitation of the land, on the provision that decommissioning and rehabilitation occurs in accordance with accepted industry standards and stakeholder and legislative requirements. Further details are set out in the Decommissioning and Rehabilitation chapter (Section 29) of this EIS.

It is anticipated that waste generated during decommissioning would be managed in the same manner as the construction and operation phases of the Project, in accordance with the waste management hierarchy. A specific waste management plan would be developed to guide waste management during decommissioning [B453].

Typical waste streams and projected quantities of waste to be generated by the Project are shown in Table 28–2, with proposed methods of disposal and management. The type, quantity and management of wastes are indicative estimates, as the detailed design and execution plans are to be completed prior to construction.

Table 28-2 Estimated Waste Generation and Proposed Management Strategies

Activity	Waste type	Class	Estimated Quantity	Management Measure
Construction of production wells	Cleared vegetation	Recyclable waste	10 m^3 per well	Land holders to be consulted and best practices implemented such as: use in progressive rehabilitation; respreading over disturbed land to minimise erosion; or, left onsite for habitat use. Where practicable remove material from site and reuse in other areas [B406].
	Soil	General waste	2 m^3 per well	Soil to be stockpiled and used for rehabilitation onsite. Stockpiles will be located away from water sources and in clear areas [B407].
	CSG water, contaminated soils, water filters and filter media containing solids not removed in upstream filtration processes	Regulated waste	30 m^3 per year	Disposed to an appropriately licensed landfill [B408].

Activity	Waste type	Class	Estimated Quantity	Management Measure
	Drill cuttings Drill fluid additives: clay stabilisers (calcium chloride, calcium chloride anhydrogenous and potassium chloride), cement additive (bentonite and calcium sulphate), disinfectant (biocide), viscosifier (FS2000, XCD polymer and NIF 20 liquid), foaming agent (Tuff-foam Ultra) and fluid loss prevention (Tuff-Loss) Residual muds	Regulated waste	10 m^3 to 75 m^3 per well	Drilling fluids will typically be removed by tanker or vacuum truck either for direct re-use, or to an authorised treatment facility prior to reuse or recycling. Where reuse or recycling of drilling fluids is not practical fluids may be taken to a licensed disposal facility as a least preferred option. Drill cuttings will be reused or recycled wherever possible, with direct disposal to licenced landfill only undertaken where no other practical alternative exists [B409]
	Soil contaminated with oil or chemicals	Regulated waste	30 m^3 per year	Left in situ or taken to a licensed waste processing facility for recycling or disposal [B412].
	Used lubricating oil and filters Unused or spent chemicals	Regulated waste	25 drums per year	Recycled where possible and transported by a licensed contractor to an appropriately licensed waste facility for disposal [B413].
	Empty drums and containers	Regulated waste	25 drums per year	Recycled where possible, or taken to an appropriately licensed waste facility [B414].
	Hard waste, including excess concrete, wood pallets, scrap metal, other packaging materials	General waste	0.5 m^3 per well	Taken to an appropriately licensed waste processing facility for recycling or disposal [B415].
	Spent and unused solvents, paints and paint wastes	Regulated waste	Residual	Transported to an appropriately licensed waste facility [B416].
	Acids and caustics	Regulated waste	Residual	Collected and disposed of at licenced / authorised waste facilities [B417].
	Paper and cardboard	Recyclable waste	More than 1 t annually	Reused or recycled, where practical [B418]
	General waste from workers' accommodation areas	General waste	More than 1 t annually	Recycled or reused where practical and transported to a licensed waste facility [B419].
	Grey water (contaminated stormwater runoff)	Regulated waste	30 million litres per day (max)	Either collected and treated onsite or transported offsite to a municipal treatment facility or receive onsite treatment [B420].

Activity	Waste type	Class	Estimated Quantity	Management Measure
	Air emissions, including nitrogen oxide, sulphur dioxide, carbon monoxide, particulate matter	Air emissions	See the Air Quality chapter (Section 9)	Select equipment with consideration for low emissions to air (NOx, SOx), high energy efficiency and fuel efficiency [B004].
Construction and operation of facilities, gas and water gathering system	Cleared vegetation for low pressure gathering line Cleared vegetation for medium-pressure pipeline	Recyclable waste	150 m^3 per well	Land holders to be consulted and best practices implemented such as: use in progressive rehabilitation; respreading over disturbed land to minimise erosion; or, left onsite for habitat use. Where practicable remove material from site and reuse in other areas [B406].
	Hydrostatic test water	Regulated waste	100 ML per gas field	Reused in other areas or disposed of through the CSG water management system [B423].
	Used chemicals and oils	Regulated waste	450 kg per day	Recycled where possible, or taken to an offsite licensed waste facility [B424].
	Scrap swarf (high-definition polyethylene fillings)	Recyclable waste	2.8 t per gathering network per year	Reused or recycled where possible, or taken to an offsite licensed waste facility [B425].
	Debris from blow out (cleaning) of pipes	Regulated waste	3 t per year	Stored in a sealed container in a bunded area or will remain in drilling pit before being transported to a licensed waste facility [B426].
	Unused composite pipe Unused high definition polyethylene	Recyclable waste	80 m of various diameter (110-455 mm) per well	Recycled where possible or disposed to an offsite licensed waste facility [B427].
	Air emissions from engines and vehicles Dust	Air emissions	See the Air Quality chapter (Section 9)	Select equipment with consideration for low emissions to air (NOx, SOx), high energy efficiency and fuel efficiency [B004]. Implement dust suppression measures for roads and construction sites to ensure that dust does not cause a nuisance [B014].
	Membrane modules	Regulated waste	2 every 3 years	Collected and disposed of in an offsite regulated waste facility [B428].
	Lead acid batteries	Regulated waste	4 per FCF 8 per CGPF 10 per IPF	Recycled or transported to an offsite regulated facility [B429].

Activity	Waste type	Class	Estimated Quantity	Management Measure
	Concrete waste	Inert waste	100 t per FCF 325 t per CGPF 375 t per IPF	Reused or recycled where possible [B430].
	Cut and fill materials from dams	Inert waste	Nil (all to be used)	If the cut and fill materials from dams is contaminated, soils will be excavated and treated and disposed of as described in Section Z.4.2. of the draft EM Plan [B364] (Appendix Z).
	Domestic wastes such as general wastes (office consumables, paper, plastic, glass, etc.), kitchen refuse, garden waste, packing waste (cardboard, plastic, wood pallets, etc.)	General waste	Unknown (dependent on domestic activity)	Reused or recycled where possible Otherwise transported offsite to a licensed waste disposal facility [B431].
	Empty drums and containers	Regulated waste	115 drums per year per facility	Recycled where possible, or taken to an appropriately licensed waste facility [B414].
	Wooden pallets, formwork	Recyclable waste	26 m^3 per FCF 90 m^3 per CGPF 100 m^3 per IPF	Reused or recycled where possible, otherwise transported offsite to a regulated waste disposal facility [B432].
	Glass, reinforced plastic pipe offcuts	Recyclable waste	6 t per FCF 5 t per CGPF 5 t per IPF	Reused or recycled where possible, otherwise transported offsite to a regulated waste disposal facility [B433].
	Oily rags and sorbents	Regulated waste	Approximately 0.5 t per year	Transported offsite to a regulated waste disposal facility [B434].
	Packaging materials (cardboard, styrofoam, plastic wrappers, bunting, lining, end caps, containers)	Recyclable waste	150 m^3 per FCF 600 m^3 per CGPF 675 m^3 per IPF	Reused or recycled where possible, otherwise transported offsite to a regulated waste disposal facility [B435].
	Plastic pipe offcuts / scrap, electric cable waste	General or recyclable waste	9 t per FCF 15 t per CGPF 20 t per IPF	Reused or recycled where possible, otherwise transported offsite to a regulated waste disposal facility [B436].
	Spent filter media bulk bags	General waste	Less than 1 t annually	Transported offsite to a regulated waste disposal facility [B437].
	Steel offcuts and scrap metal	Recyclable waste	16 t per FCF 110 t per CGPF 120 t per IPF	Reused or recycled, where practical [B438]
	Crystallised salt	Regulated waste	29,800 t per year average	Transported offsite to a regulated waste disposal facility unless an alternative can be found [B439].

Activity	Waste type	Class	Estimated Quantity	Management Measure
	Salt precipitation waste product	Regulated waste	3,700 t per year average	Transported offsite to a regulated waste disposal facility unless an alternative can be found [B439].
	Rubber and tyres	Recyclable waste	6 pick-ups yearly for a 35 TJ/d facility	Reused where possible. Collected for removal by licensed transporter for processing at a licensed facility for recycling or disposal [B440].
	Anti-seize compounds	Regulated waste	6 empty tins per FCF 15 per CGPF 20 per IPF	Collected and disposed of in regulated waste facilities [B441].
	Domestic cleaning products	Regulated waste	12 small empty containers per FCF 30 per CGPF 40 per IPF	Collected and disposed of in regulated waste facilities [B442].
	Fuels	Regulated waste	Residual	Reused, recycled or collected and disposed of in regulated waste facilities [B443].
	Greases and oils	Regulated waste	50 L per FCF 170 L per CGPF 200 L per IPF	Reused, recycled or collected and disposed of in regulated waste facilities [B444].
	Triethylene glycol	Regulated waste	10 m^3 per IPF	Reused or collected and disposed of in a regulated waste facility [B445].
	Contaminated stormwater runoff	Potentially containing high TSS or hydro-carbons	Unknown (dependent on final design and rainfall)	Collected and treated within the wastewater treatment system [B446].
	Lube oil	Regulated waste	Engines: 750 L every 3,000 hours each Lubrication oil from compressors 20 L/d	Collected and disposed of in an offsite regulated waste facility [B447].
	Oil entrained in the compression process	Regulated waste	30 t maximum per year	Reused, recycled or collected and disposed of in regulated waste facilities [B448].
	Paint waste	Regulated waste	12 tins per FCF 30 per CGPF 40 per IPF	Collected and stored onsite for reuse, where possible, or transported offsite to a licensed regulated waste facility [B449].
	Reverse osmosis treatment chemicals	Regulated waste	Less than 1,000 L per IPF	Collected, piped and stored in a suitable dam [B450].

Activity	Waste type	Class	Estimated Quantity	Management Measure
	Waste or wash out liquids	Regulated waste	2 m^3 per FCF 2 m^3 per CGPF 3 m^3 per IPF	Reused or removed by licensed tanker or carrier to a licensed commercial waste facility [B451].
	Wastewater (sewage)	Regulated waste	5 ML per 8 month period for each FCF 12 ML per year for each CGPF 12 ML per year for each IPF	Wastewater will be collected and transported offsite to a municipal treatment facility or treated onsite [B452].
Decommissioning and rehabilitation	Construction debris Chemical / oil contaminated soil Sludge	Regulated waste	100 m^3	Recycled or reused where possible or taken to an offsite licensed waste facility [B454].
	Electrical cables	Regulated or recyclable waste	Unknown (final design not available)	Abandoned or stored for recycling or reused where possible, or taken to an offsite licensed waste facility [B455].
	Fencing	General or recyclable waste	Unknown (final design not available)	Left in consultation with landowners or stored for reuse (some excess fence is retained for future maintenance and repair requirements) or collected for disposal to licensed landfill [B456].
	Gas compressors	Recyclable waste	Up to 130 varying sized units	Abandoned or stored for reuse (some excess pipe is maintained for future maintenance and repair requirements), or collected for disposal to licensed landfill [B457].
	Low pressure HDPE Gas pipelines	Recyclable waste	Unknown (final design not available)	
	Medium pressure gas pipelines	Recyclable waste	Unknown (final numbers not available)	
	Production well heads	Recyclable waste	Up to 6,625	
	Power generators	Recyclable or regulated waste	Up to 110 varying sized units but potentially less	
	Pumps	Recyclable	Several hundred	
	Sewage treatment plant and tanks	Recyclable	Unknown (final design not available)	
	Storage tanks	Recyclable	Several hundred	

28.4.1 Waste Management Procedures

Solid wastes, chemicals and other wastes to be disposed or recycled at appropriate facilities in accordance with legislative requirements and the *Arrow Waste Management Procedure* (Arrow, 2012) [B384].

This procedure, which addresses identification, segregation, storage and disposal methodologies for general and regulated wastes, applies to all personnel at Arrow controlled workplaces; and in the case of contractors, they shall have an equivalent procedure.

The Procedure should include the following minimum requirements:

- Operations and Projects must understand their legislative requirements as they relate to waste management and update the Health, Safety and Environment compliance register as appropriate [B386].
- Personnel shall be trained and competent to undertake waste identification, segregation, storage and disposal activities [B387].
- An environmental awareness program for personnel and contractors associated with equipment or procedures specific to waste, will be conducted prior to and during activities, to discuss environmental impacts and proposed management measures to reduce waste impacts [B388].
- Operations and Projects will evaluate the types and quantities of waste to be generated [B389].
- Sites will develop a plan that considers minimisation, storage, segregation, treatment, reuse, recycling and disposal. This plan will be a standalone document or part of a broader Operational EM Plan [B390].
- Waste will only be disposed of in appropriate, approved disposal sites using approved methods and contractors. Waste tracking records will be maintained, in line with legal requirements [B395].
- Onsite waste storage areas will be developed in accordance with industry practice and relevant waste management regulations [B391].
- Appropriate domestic waste storage facilities will be provided at designated work sites to assist in segregation of waste [B396].
- Contaminated soil or groundwater that cannot be avoided will be managed through quantification of the type, severity and extent of contamination, and remediated or managed in accordance with the Queensland Government's *Draft Guidelines for the Assessment and Management of Contaminated Land* 1998 [B397].
- Liquid waste generated (other than CSG water and sewage) will be stored and periodically removed for disposal or recycling. All waste drilling fluids resulting from drilling activities will be contained in properly lined dams or storage tanks prior to re-use, recycling, treatment or disposal. Putrescible solid waste will be stored in covered containers to prevent odours, public health hazards and access by fauna [B398].
- Wastewater (sewage) to be collected and transported offsite to a municipal treatment facility or treated onsite [B399].

In the majority of cases, both non-hazardous and hazardous wastes will be transported off-site for appropriate disposal. Non-hazardous may be removed from site by either Arrow staff or a contracted waste collector. These wastes should be kept segregated during transport, and disposed of at the appropriate facility [B400].

Hazardous and/or regulated wastes must be removed by a company that holds a current certification / licence, issued by the administering government authority to undertake removal of that particular waste. Arrow staff and contractors must always check the currency of the waste contractor's certification. Arrow staff and contractors also have duty of care to ensure that the disposal facility is also suitably licensed to receive the particular hazardous or regulated waste.

28.4.2 Spill Contamination and Remediation

Regulated wastes will be handled, stored and disposed of in accordance with relevant standards and the EP (Waste Management) Regulation. The storage of flammable and combustible liquids will be in accordance with the AS 1940: 2004 *The Storage and Handling of Flammable and Combustible Liquids* and other relevant dangerous goods standards [B402].

Spill containment material and spill kits will be placed at designated locations. Spill response procedures will be developed and published in the Emergency Response Plan and all relevant personnel will be required to undergo spill containment and response training [B403].

More detailed information on management of spills and hazardous waste is provided in the Soils and Land Suitability chapter (Section 12), the Geology chapter (Section 13), the Preliminary Hazard and Risk chapter (Section 27) and the EM Plan (Appendix Z) of this EIS.

28.4.3 Waste Tracking

The EP (Waste Management) Regulation requires that the administering authority is provided with appropriate information to manage the associated environmental risks of waste.

In compliance with the legislative requirements on the movement of trackable waste within, into or out of Queensland under Part 4 of the EP (Waste Management) Regulation, all waste produced during the construction, operation and abandonment phases of the Project will be recorded and tracked [B459].

Arrow will provide the following information to the transporter and, within the prescribed time of waste being transferred, give the information to EHP on an approved waste tracking certificate as prescribed in Schedule 2 of the EP (Waste Management) Regulation:

- Generator's name, address, LGA and contact details;
- Generator's identification number;
- Name, address and contact details of the person to whom the waste is to be transported;
- Day and time the generator gives the waste to the transporter for transporting;
- Load number (as defined in Schedule 9 of the EP (Waste Management) Regulation);
- For a load of waste transported into or out of Queensland, the consignment number for the load;
- Type and number of containers of waste, if the waste is dangerous goods; and
- The following details of the waste:
  - type of waste;
  - amount in kilograms or litres;
  - physical nature of the waste (solid, liquid, paste or gas);
  - its waste code;
  - United Nations (UN) number (if any);

- its packaging group designator (if any); and
- waste origin code for the activity that produced the waste.

To comply with Schedule 2 of the EP (Waste Management) Regulation, Arrow will also keep the following information for a minimum of five years:

- The information detailed in the waste tracking certificate;
- The transporter's name, address and contact details;
- The transporter's licence (environmental authority) number; and
- The registration number of the vehicle (if a motor vehicle) used to transport the waste.

28.4.4 Waste Monitoring, Auditing and Reporting

Onsite waste monitoring and auditing procedures will be developed [B458] to:

- Provide waste data to enable continuous improvement of waste avoidance, reduction and management measures throughout the Project life;
- Assess whether action is required to fulfil set waste objectives and management;
- Assess the adequacy of proposed mitigation measures and identify where mitigation measures need revision or additional measures;
- Monitor potential environmental impacts that will enable positive action to be implemented in case of incidents or accidents related to waste activities; and
- Provide actual waste management results by comparing predicted impacts and mitigation measures.

Monthly waste generation and management performance shall be benchmarked against that of other facilities and those within the same industry reported to the Department Manager, and used to promote continual improvement [B460].

Inspection and monitoring of avoidance, mitigation and management measures will be implemented to ensure the residual impacts continue to be low throughout the lifetime of the Project [B461]. Inspection will be undertaken regularly to ensure mitigation measures are effective and to intervene early, rather than monitor or inspect the effect of the impact [B462]. Monitoring will also be conducted, where necessary, to demonstrate achievement of objectives. Specific inspection and monitoring measures relating to waste management include:

- Maintain a waste stream inventory identifying the type, classification, storage, transport and disposal requirements for the waste [B463];
- Inspect waste storage locations to ensure waste management measures are being adhered to [B464];
- Maintain a waste tracking system [B465];
- A Water Management Plan, Erosion and Sediment Control Plan, and Waste Management Plan will be designed to avoid or minimise the potential impacts of Project [B207]; and
- Provide training in the principles of the waste hierarchy will be provided to personnel handling wastes on a regular basis [B393].

Inspections of the waste management areas will be conducted on a monthly basis to verify that correct waste management procedures are being followed, such that waste materials are appropriately separated, stored and labelled.

Inspections can be aided by use of the Workplace Environmental Inspection Checklist, which will check that operational sites are well maintained including that:

- No litter present;
- All spills, including minor spills, are cleaned up immediately;
- Wastes are segregated and stored according to classification;
- Putrescible wastes are stored in covered waste containers;
- Waste storage facilities are not located within 50 m of waterways;
- Wastes are not incinerated or buried on site without regulatory approval;
- All wastes are disposed of by licensed waste contractors; and
- Waste tracking forms are correctly completed, signed off, and filed for all hazardous or regulated wastes moved off site.

As they arise, new waste streams will be assessed to identify the most suitable management measures to use when handling, storing, transporting and disposing of the waste. Unidentifiable waste streams will be analysed and sent for testing in an accredited laboratory to assess the risks associated with handling and disposing of the waste.

It is intended that the majority of waste materials generated from the Project will be managed, as described in Section 28.5, within the State of Queensland; however, circumstances may arise when some waste streams may be transported interstate for specialist processing or recycling where facilities don't exist in Queensland. In such circumstances, the tracking of waste will be in line with the EP (Waste Management) Regulation and the NEPM (Movement of Controlled Waste between States and Territories). Permits and licences will be obtained where required.