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16. WASTE MANAGEMENT

This chapter describes the approach to managing wastes generated from the Papua LNG Project - Downstream (the Project), including solid and liquid waste and restricted and non-restricted waste.

The terms 'restricted waste' and 'non-restricted waste' are used throughout this chapter and are defined as follows:

- Restricted waste refers to wastes which are ignitable (i.e., they burn easily), corrosive (e.g., very high or low pH), reactive (e.g., explosive) or toxic. Certain wastes may also be listed as hazardous by government authorities or applicable international conventions and should be considered restricted. Restricted wastes may be solid, semi-solid, liquid or contained gases. This category also refers to 'pathogenic' materials (e.g., bacteria, viruses, or parasites) which are capable of causing illness or disease in humans, animals, plants or other organisms.
- Non-restricted waste refers to materials that do not pose an immediate hazard to human health, safety, or the environment.

The potential impacts and management measures associated with wastewater discharges, air emissions and vegetation disposal or re-use are addressed in Chapter 11 Environmental Impact Assessment: Onshore and Chapter 12 Environmental Impact Assessment: Marine. Wastes produced on vessels associated with the Project will be managed in accordance with international marine guidelines (for example, MARPOL) and are discussed in Chapter 12 Environmental Impact Assessment: Marine.

16.1 OBJECTIVES FOR WASTE MANAGEMENT

The waste management objectives for this Project are to:

- Comply with relevant ExxonMobil environmental policies.
- Prevent or manage the environmental, safety and human health impacts associated with waste.
- Comply with applicable Papua New Guinea waste management-related regulatory requirements.
- Set goals for the inclusion of waste minimisation considerations in the Project's design.
- Verify that wastes that are not treated or disposed of onsite are recycled, treated, or disposed of at properly licensed/permitted and approved waste management facilities.
- Apply the waste management hierarchy:
 - Avoid
 - Reduce
 - Reuse
 - Recycle
 - Dispose.

The above objectives will be achieved through implementation of the following:

- Re-use or recycling of waste materials, where appropriate.
- Waste testing, characterisation, and classification.
- Provision of waste collection, handling, transportation, storage and tracking of waste streams.
- Use of existing LNG Plant waste management facilities and storage areas.
- Formal audit and approval prior to use of third-party waste management providers.
- Execution, monitoring, and inspection of Project waste management facilities.

16.2 WASTE AVOIDANCE OR MINIMISATION

Processes will be designed and operated to avoid or minimise the generation of wastes and the hazards associated with the wastes generated in accordance with the following strategies:

- Substituting raw materials or inputs with less hazardous or toxic materials or those where processing generates lower waste volumes.
- Avoiding use of materials that will produce excess unwanted and/or restricted waste when viable alternatives are available. However, if reasonable alternatives do not exist for certain applications, a deviation may be requested. Such requests will address waste handling and disposal.
- Seeking material and equipment acquisition to reduce waste generation through the implementation of supplier-return agreements.
- Responsible purchasing of chemicals involving pre-approval by EMPNGA.
- Instituting good housekeeping and operating practices, including inventory control to reduce amount of waste resulting from materials that are out of date, off specification, contaminated, damaged, or excess to plant needs.
- Where practical, reducing volume (shredding, compaction etc.) prior to landfill for non-combustible waste. Segregating different sub-parts of wastes and subsequent shredding of the waste helps to reduce volume prior to incinerating, recycling, or disposal to landfill, for example, applied to tyres through de-beading and shredding; and also crushing of empty drums.

16.3 RECYCLING AND REUSE

In addition to implementation of waste avoidance or minimisation strategies, the total amount of waste will be reduced through the implementation of recycling plans, which will consider the following elements:

- Evaluating waste production processes and identification of potentially recyclable materials.
- Identifying products that can be re-introduced into plant processes or activity at site.
- Identifying potential waste streams into external markets.
- Establishing recycling objectives and formal tracking of waste generation and recycling rates.

Items that may be recycled or reused include:

- **Non-restricted items:** paper, cardboard, office supplies, empty aluminium and glass beverage containers, empty plastic water bottles, food waste (untreated and/or composted), wood waste (pallets, packaging, etc.), large metal drums, unused construction materials, fencing materials, and building fixtures (sinks, toilets, faucets, doors and handles).
- **Restricted items:** used motor oil, used vehicle tires, and used lead acid batteries.

The Project will develop waste management procedures to enable the safe and socio-culturally appropriate implementation of waste recycling and reuse measures.

16.4 WASTE MANAGEMENT FACILITIES

The LNG Plant has existing waste management facilities and procedures for storage, segregation and collection, including engineered landfills for non-restricted wastes. While these existing facilities can be utilised as needed, a requirement for a new onsite landfill with expanded capacity to accommodate additional Project requirements is anticipated. ExxonMobil may consider utilising supplementary approved off-site third-party waste management facilities.

Domestic and non-restricted waste generated by the Project at the LNG Plant will primarily be managed at on-site facilities currently operated by Total Waste Management Group, a third-party waste management

provider. Recycling and restricted wastes are also managed through approved waste management contractors at third party sites. There are currently only two waste management sites approved by the company for use. There are plans to review, audit, and potentially approve additional waste management facilities in 2023. Table 16.1 describes currently approved third-party waste management and recycling contractors and their sites.

Table 16.1 Existing approved third-party waste management and recycling sites

Site and operator	Waste class	Year added to approved waste site list	Most recent EMPNG audit
Total Waste Management - Roku Integrated Waste Management Facility	Non-restricted and restricted. The facility can receive a wide range of wastes for storage, transfer, and treatment (landfill [†] , incinerator [‡] , waste oil processing).	2019	2022*
Pasifika Eagle Chemicals Ltd (PECL) - Laloki Wastewater Management Facility[§]	Non-restricted and restricted. Storage/transfer facility at present. Waste oil recycling and wastewater treatment.	2019	2019*

*EMPNG audit anticipated to occur 08/2023.

[†] Landfill is under construction.

[‡] Incinerator is currently not approved for hazardous/restricted waste

[§] Industrial wastewater management facility under construction. The new facility will incorporate a dissolved air flotation and water filter media and ion exchange resin systems.

The LNG Plant waste management infrastructure is summarised below. Further specifics regarding waste management infrastructure will be covered in the Waste Management Plan (WMP), along with the Environmental and Social Management Plan (ESMP).

- **Waste collection points.** Designated areas where solid waste is placed for collection and transported to the permanent waste management area for management such as camp administration buildings and liquid food composters at the mess halls.
- **Waste receiving areas.** Designated areas where solid waste is inspected and receipted upon arrival at the permanent waste management area.
- **Waste sorting area.** An area where solid waste is sorted into specific waste types that require similar disposal methods.
- **Waste storage area.** An area used for storing waste types prior to disposal. The area accommodates the separate storage of non-restricted and restricted wastes in a manner which facilitates subsequent management. The restricted waste storage area is covered with appropriate containment to prevent release to the environment.
- **High-temperature incinerator.** The existing incinerator utilised to dispose combustible and restricted waste types has not been used since 2020. Incineration has been outsourced to the Roku facility, mostly for putrescible (non-restricted) domestic and medical wastes. The Roku facility incinerator capacity may not meet the requirements of the Project as Total Waste Management Group start accepting waste from other companies/sources.
- **Sludge dewatering system.** Sludge is dewatered at the drying bed. Solids are then sent to landfill and liquids sent back to the sewage treatment plant.
- **Sanitary wastewater holding tanks.** Ablution facilities that are not plumbed into the permanent sanitary wastewater treatment plant will include sanitary wastewater holding tanks. These tanks will be emptied (via sewage tanker) and the sanitary wastewater transported to the sanitary wastewater treatment plant.

- **Sanitary wastewater treatment facility.** An additional facility to treat sanitary wastewater (discharges from toilets, washrooms and kitchens) will be constructed. This facility will be designed to cope with the wastewater expected to be generated by the peak construction workforce.
- **Dissolved air floatation unit/sand filter.** The existing dissolved air flotation unit and sand filter will be used to treat oily contaminated water.

16.5 EXPORT OF RESTRICTED WASTE

The Project will utilise third-party facilities for the management of some wastes. Restricted wastes are collected, stored and exported for treatment and disposal, typically to Australia. Third-party vendors are also utilised for the purpose of collecting and exporting some restricted wastes. The Project may need to export certain restricted wastes for recycling, treatment, and disposal. In such cases, applicable provisions of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Secretariat of the Basel Convention 1992) and the Waigani Convention: Convention to Ban the Importation of Hazardous and Radioactive Wastes into Forum Island Countries and to Control the Transboundary Movement and Management of Hazardous Waste within the South Pacific Region (Secretariat Pacific Regional Programme 2001) will be applied.

Third parties and third-party facilities receiving exported restricted waste will be subject to prior assessment and approval by the Project.

Restricted waste will be stored to minimise the possibility of accidental releases to air, soil, and water sources via implementation of the following principles:

- Prevent co-mingling of, or contact between, incompatible wastes that allows for inspection between containers to monitor leaks or spills.
- Storage in closed containers away from direct sunlight, wind and rain.
- Usage of secondary containment systems constructed with materials appropriate for the wastes being contained and adequate to prevent loss to the environment.
- Usage of secondary containment whenever liquid wastes are stored in volumes greater than 220 L. The available volume of secondary containment will be at least 110% of the largest storage container or 25% of the total storage capacity (whichever is greater) in that specific location.
- Provision of adequate ventilation where volatile wastes are stored.

Restricted waste storage activities will be subject to special management actions, will be conducted by personnel who have received specific training in handling and storage of restricted wastes, and will include:

- Providing readily available information to employees on chemical compatibility, including labelling each container to identify its contents.
- Limiting access to restricted waste storage areas to personnel who have received proper training.
- Clearly identifying (i.e., labelling) the area, including documentation of its location on a facility map or site plan.
- Preparing and implementing spill response and emergency plans to address their accidental release.
- Developing the Project waste management procedures to enable the implementation of restricted waste storage processes.

16.6 TRANSPORTATION

Onsite and offsite transportation of waste will be undertaken in a manner that minimises the possibility of spills, releases, and exposures to employees, the community, and the environment. A WMP has been

developed to support the Project's construction ESMP. The waste management plan will define the processes and standards applying to the transport of the waste and will consider:

- International Organization for Standardization tankers, double skinned tankers or equivalent will be used to transport waste oil or chemical from ExxonMobil sites to approved third party facilities.
- If shipping containers are used, then they will be adequately lined with tough impermeable sheet, high-density polyethylene liners or equivalent. Before drums or totes with waste oil, chemicals etc. are placed inside the shipping containers, ExxonMobil will verify if the high-density polyethylene bund/lining are sufficient to contain spills during transportation.
- Drums and totes will be palletised and securely tethered before loading into container.
- To prevent the palletised drums or pods from rubbing against each other or from the walls of the container, waste timber/wood or used tires will be used to secure drums in position during movement.
- Vehicles used for transporting restricted liquid wastes will be equipped with adequate spill response kits, and persons transporting these wastes will be adequately trained to respond in the event of a spill or release.
- A safety data sheet (SDS) will be securely stored in the container, and a copy given to the driver.
- All waste containers designated for offsite transport will be secured, labelled with the contents and associated hazards per the SDS, properly loaded on the transport vehicles before leaving the site, and accompanied by a transport certificate (i.e., manifest) that describes the load and its associated hazards and destination.
- If there is any spill whilst transporting, loading, or unloading of waste, the spill will be reported immediately to ExxonMobil.

16.7 WASTE MANAGED BY THIRD PARTIES

Offsite disposal of waste will be subject to ExxonMobil's approval of the waste facility following inspection, in accordance with the following criteria:

- The facility has the technical capability to manage the waste in a manner that reduces immediate and future impact to the environment.
- The facility has all required permits, certifications, and approvals, from applicable government authorities as per respective in-country regulations such as Waigani Convention, Basal Convention and Stockholm Convention.
- The waste service provider has been contracted through the use of an ExxonMobil service agreement.
- The facility has been approved in advance by ExxonMobil.

In the event transportation to an approved third-party facility is not possible, the waste will be stored until the issue is resolved or after a new third-party facility is audited and approved for use.

16.8 WASTE DATA RECORDING AND TRACKING

A tracking system will be used to track waste quantities and types collected and disposed, collected location, disposed location and fate. Tracking wastes handling and disposal activities is required to document that the process is followed, and that waste is disposed properly.

Data from waste transfer forms and weighbridges will be used to produce reports that document conformance with the management plan and communicate performance.

Key performance indicators are:

- Quantity in tons of each waste type generated by source and/or over time.

- Quantity in tons of each waste type generated by location.
- Quantity in tons and disposal methods used for each waste stream over time.

16.9 WASTE TYPES AND QUANTITIES

The waste types, disposal methods of each waste type, and quantity of each waste type likely to be generated during the construction and operation phases of this Project are discussed below.

16.9.1 Construction

Waste types generated during the construction phase of the Project will include non-restricted and restricted wastes. The projected waste types and their estimated quantities, as well as the typical disposal methods of each waste type expected to be generated by the Project are detailed in Table 16.2. The estimate of the waste quantities that will be generated during construction were calculated during pre-front-end engineering design (pre-FEED) and will be updated during FEED. Early works for site preparation for the Project are also included in these estimates. Non-restricted wastes will comprise of general waste, pallets and other wood material, food waste, paper, cardboard, plastics, drums, sewage sludge and scrap metal. Non-restricted wastes will mostly be disposed of to landfill or incineration.

16.9.2 Operations

Waste types generated during operations will include the non-restricted and restricted wastes described in Table 16.3.

16.9.3 Waste management plans

To achieve the required waste management practices, the types and quantity of waste that the Project will generate need to be determined, along with those responsible for managing the waste. The Project will use proven waste management strategies, follow the waste management philosophy plan and hierarchy, and learn from previous lessons.

Currently, waste is managed according to the waste management hierarchy within the existing ESMP established for the PNG LNG Project. Regular waste management performance reports are conducted and shared with the government and other key external organisations regarding operational compliance.

A construction WMP has been developed for the construction phase of the Project to avoid and minimise the potential impacts of restricted, non-restricted and hazardous waste. The construction WMP is developed to achieve the waste management objectives established in this chapter.

It details the strategies for waste disposal, identification of potential hazards, and measures to protect the safety of workers and the environment. Mitigation measures that apply to waste management are also detailed in the construction WMP.

The construction WMP will be provided to contractors as guidance for developing execution documents and implementation procedures to comply with Project waste management procedures and expectations. Furthermore, an updated operations WMP will be developed for the integrated LNG Plant.

Table 16.2 Waste types and volumes anticipated to be generated during Project construction

Waste type	Classification	Combustibility	Typical or recommended treatment type*	Disposal type	Volume (m³)	Estimate total mass (tonnes)
Non-restricted solid waste – early works and construction						
Excess soil (clean) [†]	Non-restricted	Non-combustible	-	Disposal onsite	46,499	44,174
Excess vegetation	Non-restricted	Combustible	Re-use	Disposal onsite	156,000	143,832
Acid sulphate soils [‡]	Non-restricted	Non-combustible	-	Landfill	5,048	4,654
Wood scrap (dunnage)	Non-restricted	Combustible	Recycle/reuse/crushing/incinerate	Third party or landfill	70,531	11,003
Glass	Non-restricted	Non-combustible	Recycle	Third party	2	1
Ferrous	Non-restricted	Non-combustible	Wash/crush/consolidate	Third party or landfill	531	531
Non-ferrous	Non-restricted	Non-combustible	Wash/crush/consolidate	Third party	1	1
Welding rods (spent)	Non-restricted	Non-combustible	Wash/crush/consolidate	Third party or landfill	10	10
Plastic materials [§]	Non-restricted	Combustible	Wash/crush/consolidate/recycle	Third party or landfill	18	0
Tires	Non-restricted	Combustible	De-bead/shred/incinerator/recycle	Third party or landfill	170	34
Electrical parts, fittings, cable, electrodes	Non-restricted	Non-combustible	Recycle	Third party	301	301
Drums (steel)	Non-restricted	Non-combustible	Recycle	Third party	252	30
Buckets (steel)	Non-restricted	Non-combustible	Recycle	Third party	48	6
Other containers	Non-restricted	Non-combustible	Recycle/re-use	Third party	7	1
General construction debris	Non-restricted	Non-combustible	-	Landfill	2,039	1,693
Plastic and insulation	Non-restricted	Non-combustible	Shred	Landfill	8,158	179
Filters (spent)	Non-restricted	Non-combustible	Crush or shred	Landfill	36	18

Waste type	Classification	Combustibility	Typical or recommended treatment type*	Disposal type	Volume (m³)	Estimate total mass (tonnes)
Miscellaneous	Non-restricted	Combustible	Shred	Landfill	2,372	237
Restricted solid waste – early works and construction						
Empty Gas Cylinders	Restricted	Non-combustible	Re-use	Third party	120	17
Filters (engine oil)	Restricted	Non-combustible	Crush or shred	Landfill	24	12
Filters (air)	Restricted	Non-combustible	Crush or shred	Landfill	1	1
Batteries (spent motor vehicle)	Restricted	Non-combustible	Recycle	Third party	20	20
Medical waste ^{II}	Restricted	Combustible	Crush	Third party	4	1
Liquid waste – early works and construction						
Oil (spent lube)	Restricted	Combustible	Consolidate	Third party	188	163
Oil (spent hydraulic)	Restricted	Combustible	Recycling/incinerate	Third party	20	17
Paint waste	Restricted	Combustible	Fixate/incinerate	Third party or landfill	10	10
Unused, spent, expired, and contaminated solvents, chemicals and additives	Restricted	Combustible	Recycle [#] /incinerate	Third party	3	2
Domestic sewage and wastewater	Non-restricted	Non-combustible	Wastewater will be treated at the sewage/wastewater treatment plant; sludge will be incinerated	-	118,562	148,203
Non-restricted – solid waste: ash generated from incinerator						
Paper and cardboard	Non-restricted	Combustible	Incinerate	Landfill	319	36
Camp operations refuse	Non-restricted	Combustible	Incinerate	Landfill	30,703	15,782

Waste type	Classification	Combustibility	Typical or recommended treatment type*	Disposal type	Volume (m³)	Estimate total mass (tonnes)
Office operations refuse	Non-restricted	Combustible	Incinerate	Landfill	6,742	3,465
Miscellaneous	Non-restricted	Combustible	Shred	Landfill	2,372	237
Dehydrated sludge cake from WWT	Non-restricted	Combustible	Dewatering or incinerate	Landfill	1,007	1,259
Non-restricted – solid waste demolition of temporary facilities						
Road spoils	Non-restricted	Non-combustible	-	Landfill	420	286
Wood scrap (dunnage)	Non-restricted	Combustible	Recycle/re-use/incinerate	Third party or landfill	266	42
Glass	Non-restricted	Non-combustible	Recycle/Crush	Third party or landfill	116	47
Ferrous	Non-restricted	Non-combustible	Wash/crush/consolidate	Third party	488	488
Non-ferrous	Non-restricted	Non-combustible	Wash/crush/consolidate	Third party	17	17
Plastic materials	Non-restricted	Combustible	Incinerate**	Third party	4	0
Electrical parts, fittings, cable, electrodes	Non-restricted	Non-combustible	Recycle	Third party	256	256
General construction debris	Non-restricted	Non-combustible	Recycle/re-use/incinerate††	Third party	16,531	13,721

*ExxonMobil will give utmost priority to employing the typical treatment type. When the standard treatment is unavailable in PNG, ExxonMobil will explore other treatment options or consider shipping the waste (through a third party) to another country for proper waste management.

†The onsite disposal applies to excess soil that is suitable for reuse, specifically referring to uncontaminated soil.

‡ Testing for acid sulphate soils will be completed by a certified practitioner before sending the soil to landfill

§ Plastic materials that can be recycled, such as soft plastics, will be segregated and sent to recycling facilities where possible.

|| Medical waste ash will be separated from non-medical waste.

Hydrocarbon-based products may be recycled via the local crude refinery in Port Moresby (subject to ExxonMobil approval)

** Includes plastic materials that are uncontaminated (i.e., non-hazardous) non-reusable/ non-recyclable and non-halogenated plastic materials and halogenated plastics (polyvinyl chloride, polytetrafluoroethylene, etc.)

†† Recycle will be the priority for wood.

Table 16.3 Waste types and volumes anticipated to be generated during Project operations

Waste type	Classification	Combustibility	Treatment type*	Disposal type	Volume (m³)	Estimated total mass (tonnes)
Non-restricted - solid waste						
Aerosols (spray can)	Non-restricted	Non-combustible	Crush	Landfill	431	20
Construction / masonry materials (garnet, concrete, construction lime)	Non-restricted	Non-combustible	-	Landfill	1,077	894
Drink cans	Non-restricted	Non-combustible	Recycle	Third party	10,428	480
Electrical cabling (stripped)	Non-restricted	Non-combustible	Strip or recycle	Third party or landfill	214	19
Empty barrels, drums and containers	Non-restricted	Non-combustible	Wash, crush or consolidate	Third party or landfill	214	214
Electronic waste (office machines and computers)	Non-restricted	Non-combustible	Consolidate and recycle	Third party	1,145	129
General waste (furniture, tables, chairs).	Non-restricted	Non-combustible	Consolidate	Third party or landfill	697	181
Glass (excluding light bulbs)	Non-restricted	Non-combustible	-	Landfill	240	99
IA Dryer package adsorbent	Non-restricted	Non-combustible	Aeration	Landfill	19	14
Metal (including metal drums)	Non-restricted	Non-combustible	Wash, crush or consolidate	Third party	347	347
Molecular sieve	Non-restricted	Non-combustible	Aeration	Landfill	2,599	1663
Plastic bottles	Non-restricted	Non-combustible	Recycle	Third party	54,056	865
Plastics general	Non-restricted	Non-combustible	Recycle	Third party	405,421	8,919
Pressure swing adsorption nitrogen generation package adsorbent	Non-restricted	Non-combustible	Aeration	Landfill	50	35
Pipes, iron, beams, rods	Non-restricted	Non-combustible	Recycle	Third party	5,036	5,036
Tyres	Non-restricted	Non-combustible	De-bead, shred, incinerate or recycle	Third party or landfill	27	7
Wires	Non-restricted	Non-combustible	Recycle	Third party	84	84

Waste type	Classification	Combustibility	Treatment type*	Disposal type	Volume (m³)	Estimated total mass (tonnes)
Wood scrap and timber pallets	Non-restricted	Combustible	Recycle, reuse, or incinerate	Third party or landfill	27,304	4,260
Restricted – solid waste						
Activated carbon	Restricted	Non-combustible	-	Third party	0	0
Batteries (wet and dry cell)	Restricted	Non-combustible	Consolidate	Third party	8,962	1,524
Ceramic balls	Restricted	Non-combustible	Aeration	Landfill	211.2	296
Empty intermediate bulk containers	Restricted	Non-combustible	Wash, crush or consolidate	Third party or landfill	184	184
Fluorescent tubes / lights bulbs	Restricted	Non-combustible	Consolidate	Landfill	166	46
Mercury adsorbent	Restricted	Non-combustible	Consolidate	Third party	321	180
Other restricted waste (CRC, cans, miscellaneous hazardous waste)	Restricted	Non-combustible	Consolidate	Third party or landfill	48	48
Sludges - hydrocarbon based (as oily sludge)	Restricted	Non-combustible	Recycle	Third party	6,574	6,574
Uninterruptible power supply, monitors, television screen	Restricted	Non-combustible	Recycle	Third party	336	38
Non-restricted - ash generated from incinerator						
Contaminated (hydrocarbon) soil	Non-restricted	Combustible	Incinerate	Landfill	547	509
Domestic / camp waste or trash (refuse/food)	Non-restricted	Combustible	Incinerate	Landfill	14,595	7,502
Organic waste (trees, leaves, grasses, dead animals, etc.)	Non-restricted	Combustible	Incinerate	Landfill	7,246	1,645
Filters (water, air) (must be pre-drained)	Non-restricted	Non-combustible	Drain/dry/ Incinerate	Landfill	2,675	1,338
Paper and cardboard/cartoons	Non-restricted	Combustible	Incinerate	Landfill	68,872	7,714
Personal protective equipment	Non-restricted	Combustible	Incinerate	Landfill	30	3
Styrofoam	Non-restricted	Combustible	Incinerate	Landfill	58,691	1233

Waste type	Classification	Combustibility	Treatment type*	Disposal type	Volume (m³)	Estimated total mass (tonnes)
Paint waste (excluding lead-based paints)	Restricted	Flammable	Incinerate	Landfill	150	150
Restricted - ash generated from incinerator						
Filters (oil, diesel) (must be pre-drained)	Restricted	Combustible	Drain/Dry/ incinerate	Landfill	8	4
Refrigerant	Restricted	Combustible	Incinerate	Landfill	74	41
Dried grease	Restricted	Combustible	Incinerate	Landfill	0.9	0.8
Grease trap waste / sludges	Restricted	Combustible	Incinerate	Landfill	4,207	3,870
Medical waste (clearly labelled / identifiable)	Restricted	Combustible	Incinerate	Landfill	8,113	1,623
Oil contaminated debris (rags, absorbent pads)	Restricted	Combustible	Incinerate	Landfill	1296	64.8
Sludges -sanitary (sewage) based	Restricted	Combustible	Dewatering/ incinerate	Landfill	0.2	0.3
Restricted – liquid						
Chemicals – various, as chemical wastewater from laboratory (excluding monoethylene glycol and solvents)	Restricted	Combustible	Consolidate	Third party	449	449
Hydraulic oil	Restricted	Combustible	Consolidate	Third party	30	26
Oil liquids	Restricted	Combustible	Consolidate	Third party	4,041	3,475
Oil water	Restricted	Combustible	Consolidate	Third party	51	51
Waste diesel	Restricted	Combustible	Consolidate	Third party	93	93
Solvents – non-chlorinated (chlorinated not accepted)	Restricted	Non-combustible	Consolidate	Third party	0	0

*ExxonMobil will give utmost priority to employing the typical treatment type. When the standard treatment is unavailable in PNG, ExxonMobil will explore other treatment options or consider shipping the waste (through a third party) to another country for proper waste treatment and management.

16.9.4 Inspections and monitoring

Monitoring activities associated with the management of restricted and non-restricted waste will include:

- Regularly visually inspecting all waste collection equipment and storage areas for evidence of accidental releases and to verify that wastes are properly labelled and stored. When significant quantities of restricted wastes are generated and stored on site, monitoring activities will include:
 - Inspecting vessels for leaks, drips or other indications of loss
 - Identifying cracks, corrosion, or damage to tanks, protective equipment, or floors
 - Verifying locks, emergency valves, and other safety devices for easy operation
 - Checking the operability of emergency systems
 - Documenting results of testing for integrity, emissions, or monitoring stations (e.g., air, soil, vapour, or groundwater)
 - Documenting changes to the storage facilities and any significant changes in the quantity of materials in storage.
- Regularly assessing waste segregation and collection practices.
- Tracking of waste generation trends by type and amount of waste generated.
- Characterising waste at the beginning of the generation of a new waste stream, and periodically documenting the characteristics and proper management of the waste, especially restricted wastes.
- Keeping manifests or other records that document the amount of waste generated and its destination.
- Regularly assessing contractor treatment and disposal services, including reuse and recycling facilities when large quantities of restricted wastes are managed by third parties. Where practicable, assessments will include site visits to the treatment, storage and disposal locations.
- Where appropriate, regularly monitoring groundwater quality in cases of restricted waste onsite storage or pre-treatment and disposal.
- Monitoring records for restricted waste collected, stored, or transported will include:
 - Name and identification number of the material or materials composing the restricted waste
 - Physical state (i.e., solid, liquid, gaseous or a combination of two or more of these)
 - Quantity (e.g., by weight or volume and number of containers)
 - Waste shipment tracking documentation, including quantity and type; date dispatched; date transported; date received; and the name of the originator, the receiver and the transporter
 - Method and date of storing, repacking, treating, or disposing at the facility, cross referenced to specific manifest document numbers applicable to the restricted waste
 - Location of each restricted waste within the facility and the quantity at each location.

The Project waste management procedures will be developed to enable the implementation of waste monitoring processes.