

Waste Management Plan

Operational Phase, Version 14.1

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Diavik Diamond Mine

Health, Safety and Environment Department

HSEQ Element 10, RT Standard E7

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DISTRIBUTION LIST

COPY #	AFFILIATION	POSITION	FORMAT
1	DDMI	Health, Safety and Environmental Manager	Electronic*
2	DDMI	VP Operations	Electronic*
3	DDMI	Manager, Fixed Plants and Surface Operations	Electronic*
4	ENR	Director, Wildlife	Electronic

** On DDMI Intranet under Reference/Environment/Environmental Management Plans*

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Introduction

Diavik Diamond Mines Inc. (DDMI) is committed to taking all necessary steps to ensure that collection, storage, transportation and disposal of all wastes generated by the project are conducted in a safe, efficient and environmentally compliant manner. The fundamental basis of the plan is the practical and positive management of wastes, incorporating the implementation of a sound waste minimization program.

The main objectives of the plan are to:

- create a system for proper disposal of waste
- minimize potentially adverse impacts on the physical and biological environment
- comply with Federal and Northwest Territories (NWT) legislation

Along with the ideals of the four R's embodied in the Waste Management Plan - namely reduction, recovery, reuse and recycling of waste - appropriate mitigation measures are identified to counteract adverse environmental effects.

This plan will be reviewed annually and revised as required. The Waste Management Plan is an integral part of Diavik Diamond Mines' Environmental Management System (EMS).

Objectives and General Strategies

The Waste Management Plan focuses on minimizing generation of wastes, optimizing usage of materials before disposal and facilitating the collection and processing of wastes with the least adverse effects on the physical and biological conditions at site. The minimum standards of acceptability of the plan are to:

Establish compliance with Federal and Government of the Northwest Territories (GNWT) environmental legislation via:

- GNWT Public Health Act
- GNWT Environmental Protection Act (EPA)
- Canadian Environmental Protection Act (CEPA)
- Transportation of Dangerous Goods Act and Regulations (TDGA & TDGR)
- Workplace Hazardous Materials Information System (WHMIS) Safety Act
- Northwest Territories Waters Act
- Territorial Lands Act
- GNWT Pesticide Act

Establish compliance with the American Petroleum Institute (API) and Canadian Standards of Practice via:

- Design, Construction, Operations, Maintenance, and Inspection of Terminal & Tank Facilities, API-2610.
- Standard for Aboveground Steel Tanks for Fuel Oil and Lubrication Oil, CAN/ULC-S602M.
- Lining of Aboveground Petroleum Storage Tank Bottoms, ANSI/API 652.
- Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products, National Task Force on Storage Tanks for Canadian Council of Ministers of the Environment (CCME).

Other objectives of the Waste Management Plan are as follows:

- Prevent and reduce adverse impacts on the environment, including wildlife and wildlife habitat
- Protect the environmental integrity of soil, surface water and groundwater in the immediate area of the plant site
- Reduce site waste disposal costs
- Ensure due diligence

Objectives of the plan are achieved by using proven strategies and applying modern technological developments to ensure that materials are used efficiently when brought to the site and then disposed of in an environmentally compatible manner. General strategies chosen to achieve the objectives are:

Proactive Procurement Policy: Any tender documents notify prospective bidders of the environmental sensitivity of the site and solicit the use of the most environmentally suitable materials, equipment and products.

Pollution prevention: Pollution prevention methods to eliminate the generation of wastes continue to be evaluated and, where feasible, methods are being implemented. This is achieved by adopting reduction, substitution, segregation, reuse, recycle and recovery methodology discussed below.

Strategic material substitution: At the purchasing stage, the possibility of material substitution with less pollutant varieties is examined for materials that are hazardous to handle, generate hazardous wastes or create environmental problems.

Strategic chemical substitution: A policy of using cost effective chemicals that accomplish the same result as an originally desired chemical, while resulting in less or no hazardous waste generation.

Waste segregation: Categorical segregation of all waste streams to avoid undesirable synergistic effects and promote reuse, recycling, recovery and disposal of various wastes. All waste categories are analyzed and the principals of the following four R's applied:

Reduction initiatives: Reducing raw material consumption is the first step to reducing waste generation. To practice this principle, processes and material used will be evaluated on the basis of possibly reducing raw material usage.

Reusing initiatives: Reuse of the material in other applications and/or by other parties is examined using waste material exchange.

Recycling initiatives: Recycling involves processing used materials for use in creating new products and is considered, where feasible, for successful management of waste streams.

Recovery initiatives: Recovery of usable material or energy as a by-product is a part of the four R's of the waste minimization process. For example, redistributing waste heat from generators to heat other buildings is a process for recovering energy that would otherwise be wasted.

Disposal: Disposal becomes the final option when the four R's are no longer applicable or practical. However, hazardous wastes are only stored temporarily on site and are ultimately transported to a licensed hazardous waste handling facility for possible recovery, treatment and/or disposal.

The following sections of the waste management plan provide specific information on waste sources and how various wastes generated are handled. This information is reviewed when significant changes are made to the waste streams, and at minimum on an annual basis.

Definition of Waste

A material is considered waste when it can no longer be used for its original intended purpose. This Waste Management Plan addresses solid and liquid wastes expected to be generated on site.

The types of solid wastes considered at right include inert wastes of various kinds such as: cans, filters, belts, scrap metals, non-hazardous wastes such as sewage sludge, domestic garbage, etc. Or hazardous wastes like: used oils, solvents, paints, used/unused chemicals, old batteries and chemical based sludge from wastewater treatment plants. Waste classifications are shown in Figures 1 and 2 (Appendix A).

Liquid wastes such as waste chemicals and waste petroleum products are considered as hazardous wastes within this plan.

The GNWT Department of Environment and Natural Resources (ENR, formerly RWED) "Guideline for General Management of Hazardous Waste" (February 1998) and "Guideline for Industrial Waste Discharges" (April 2004) defines hazardous wastes and non-hazardous wastes as follows:

The definition of 'solid waste' includes:

- ✓ any garbage, refuse, sludge from a waste or water treatment plant
- ✓ discarded material including solid, liquid, semi-solid or contained gaseous materials resulting from industrial, commercial, mining, and from domestic activities, but does not include solid or dissolved materials in irrigation, return flows or industrial liquid effluent discharges.

Hazardous Waste: *A contaminant which is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage. A hazardous waste does not include a contaminant that is:*

- Household in origin
- Included in class 1 Explosives, or class 7 Radioactive materials, of Transportation of Dangerous Goods Regulations (TDGR)
- An empty container
- Exempted as a small quantity
- Intended for disposal in a sewage system or landfill that meet the applicable standards set out in schedules I, III or IV of the "Guideline for Industrial Waste Discharges in the NWT."

The considerations for small quantity hazardous wastes that can be classified under non-hazardous wastes are as follows:

Small Quantity: Hazardous waste that is generated in an amount less than 5 kilograms per month of a solid, or 5 litres per month of a liquid; and where the total quantity accumulated at any one time does not exceed 5 kilograms or 5 litres. This does not apply to mercury or in classes 2.3, 5.1 or 6.1 of TDGR. These wastes must be generated in an amount less than 1 kilogram per month of a solid or 1 litre per month of a liquid; and where the total quantity accumulated at any one time does not exceed 1 kilogram or 1 litre.

Waste Sources

The sources and types of wastes generated at the mine site are presented in the following table:

Sources of Waste Generation

<i>Source of Waste</i>	<i>Type of Waste</i>
Chemical Handling and Storage Operations	Waste petroleum products, used chemicals
Sewage Treatment Plant	Biological sludge and grey water
Equipment Maintenance	Used batteries, engine oil, oil & air filters, tires, scrap metal, glass, hydraulic hoses, aerosol cans, etc.
Building Maintenance	Used transformers, fluorescent lighting ballasts, glycol, material scraps (partitions, carpets, plumbing, electrical, glass, insulation, etc.)
Laboratory	Chemical lab wastes, toxic substances, crucibles
Domestic waste from: accommodation building administration offices kitchens	Biological sludge, domestic garbage, oil & food wastes, paper, cardboard, aerosol cans, used alkaline batteries
Operational area	Inert waste: cement, sand, used materials (i.e. metals, pipes, glass, styrofoam, insulation, etc.)
First Aid Facility	Sharps (needles, syringes, scalpel blades), biological wastes (blood, human tissue, gauze pads)

Identification, Description, Classification and Disposal Plan

Waste containers are labelled at each facility, and hazardous waste signs are displayed in the applicable storage/transfer/disposal facilities. All wastes are to be segregated at point source. The Table below shows general treatment and disposal plans for wastes generated at the site.

The Waste Transfer Area (WTA) was relocated in 2008 and is now adjacent to the perimeter road to the explosives storage area on the south part of the island (Figure 3). The purpose of this facility is to store and dispose of site wastes in a practical, safe manner that reduces potential attractants for wildlife.

Treatment and Disposal Plan

WASTE TYPE	TREATMENT STRATEGY	HANDLING AND DISPOSAL METHOD
Petroleum Based:		
Used Oil	Reuse/ Recycle	Collect in trays, drums or pumped via pipeline. Transfer to large 467 000 litre storage tank at lube storage building, adjacent to the maintenance shop. Ship off-site for reuse/recycle. 20 L plastic pails or larger that contained oil are collected and sent to the WTA. The Site Services representative will inspect the container and, if drained, will dispose plastic container within the inert landfill. Containers that cannot be drained will be stored in a sea can at the WTA and shipped off site for cleaning and disposal.
Used Hydraulic Fluid	Reuse/ Recycle	Collect in trays, drums or pumped via pipeline. Transfer to 467 000 litre storage tanks adjacent to lube storage building or in drums to the waste transfer area. Ship off-site for recycling. Used hydraulic hoses will be disposed of in the landfill.
Used Grease	Reuse/Dispose off- site	Scrubber grease from the Process Plant and used cardboard grease tubes are collected in drums, stored at the WTA and shipped off-site for disposal.
Contaminated or Expired Fluids	Reuse/Recycle	Transfer to storage tanks and reuse where possible. Also used for Mine Rescue Team spill scenarios. If reuse not possible, ship off-site for recycling.
Oil Filters	Recycle/ Recovery	Oil filter canisters will be drained and crushed and placed in labelled drums. Drums will be taken to the waste transfer area and shipped off-site.
Contaminated Soil & Rock	Bioremediation	Spread in lined landfarm within the Waste Transfer Area (crush), or in the Type III rock pile (large rocks).
Contaminated	Recovery/Reuse	Absorbent pads are used to collect any free product on

Water		top of the water. Remaining water is collected with a vacuum truck and taken to the PKC for disposal.
Contaminated Snow	Recover/Reuse	Snow is collected and deposited in the contaminated soils area. During thaw, absorbent pads are used to collect any free product on top of the water and the remaining water is collected with a vacuum truck and taken to the PKC for disposal.
Oily Rags	Reduce/Incinerate	Collected in Tipper bins, stored at the Waste Transfer Area and incinerated on site.
Used Absorbent Pads	Reduce/Incinerate	Collected in Tipper bins, stored at the Waste Transfer Area and incinerated on site.
Used Absorb-all	Reduce/Incinerate	Collected in Tipper bins, stored at the Waste Transfer Area and incinerated on site.
Chemicals:		
Used Glycol	Recycle	Collect in trays, drums or pumped via pipeline. Transfer to drums, 50 000 L storage tank located adjacent to lube storage building, 28 000L tank at power plant 1 or 30 000L tank at power plant 2. Ship off-site for recycle or disposal.
Acids	Dispose off-site	Stored in approved plastic containers or enviro-packs at the Waste Transfer Area within the chemical shipping container and shipped to off-site disposal facility.
Solvents/EnSolv	Reduce/Dispose off-site	Use non-toxic solvents when feasible. Store in drums in Waste Transfer Area. Ship to disposal facility off-site.
Flocculant	Reduce/Dispose off-site	Collected in drums, stored at the WTA and shipped off-site for disposal.
Freon	Recycle/Dispose off-site	Collected in drums, stored at the WTA and shipped off-site for recycling/disposal.
Laboratory Products	Dispose off-site	Store at WTA. Dispose off-site.
Waste Batteries	Recycle	Label and store in Waste Transfer Area. Crate appropriately and ship off site for recycle/disposal.
Toxic Chemicals	Reduce/Dispose off site	Plastic containers that formerly held toxic chemicals in < 20 L containers will be collected in drums, stored in the WTA and shipped off-site for disposal. Any containers of this size that held benign products will be disposed of in the landfill.
Aerosol Cans	Recycle	Store in drums or crates in Waste Transfer Area. Ship off site for recycle or disposal.
Fluorescent Light Bulbs	Dispose off-site	Collected in trays, crates or boxes, stored at the WTA and shipped off-site for disposal.
Paint	Dispose off-site	Collected in a sea can or crate and allowed to dry. Cans incinerated (latex) and disposed of in landfill or shipped off-site for disposal (oil-based).
Domestic Wastes:		

Food	Incinerate	Collect in plastic bags, store inside in designated containers. Incinerate immediately.
Paper and Cardboard	Recycle/ Incinerate	Burn dry, unstained materials in designated burn pit. Incinerate any paper or cardboard that has been in contact with food.
Cooking grease	Dispose off-site	Collected in plastic drums in the camp, packaged and transferred to the warehouse for immediate shipment for off-site disposal.
<i>Inert Bulk Wastes:</i>		
Conveyor Belts and Tires	Reuse	Re-use tires where feasible on site. Dispose in landfill.
Vehicles	Recycle	Store in laydown area parking lot. Drive or haul off-site.
Buildings and Bulk Debris	Reuse on/off-site	Relocate to other areas of site or dismantle and haul off-site.
Incinerator Ash	Burn Pit/Landfill	Store in bins in Waste Transfer Area. Use in burn pit then transfer to landfill.
Scrap Metal	Landfill	Store in non-burnable bins and transfer to inert landfill.
Scrap Copper	Recycle	Collecting in a sea can for off-site recycling opportunity.
Wood, Paper & Cardboard	Burn Pit/Incinerator	Clean cardboard, paper and wood products are taken to the WTA and are burned in the burn pit for disposal. Any of these products that are contaminated with food are incinerated.
Plastics	Burn Pit/Incinerator/ Landfill	Plastic containers that held non-hazardous materials are disposed of in the landfill. Those containing hazardous products are collected in drums, taken to the WTA and shipped off site for disposal. Those that contained food are incinerated.
Air Filters	Burn Pit/Landfill	Collected in bins, burned at the waste transfer area and disposed of in the landfill.
Sandblasting residues	Landfill	For small jobs, collect at source and store in drums at Waste Transfer Area. For large sandblasting jobs, contain residues in a designated area, transfer to truck and dispose in approved inert landfill.
<i>Organic Waste:</i>		
Sewage Sludge and grey water	Sludge Containment Area & PKC	Sewage sludge is collect from screens at the Sewage Treatment Plant (STP) & disposed of at approved sludge disposal area in WTA (solids). Grey water and treated sludge from the STP is disposed of in the PKC pond.
Biological Wastes	Incinerate	Store in special waste receptacles in first aid centre. Trained medical technicians ensure proper handling. Needles, scalpels, syringes, gauze pads and blood are incinerated.

Hazardous Recyclable and Non-Recyclable Wastes

Hazardous wastes generated at Diavik are classified in the Hazardous Materials Management Plan. This plan outlines the methodology for identification, classification and storage of such materials. The plan also defines the safety protocols to be followed and records to be maintained by personnel handling such wastes, including final disposal practices. This Waste Management Plan discusses the generation of solid wastes, which also includes hazardous wastes, and their storage and final disposal methodologies.

Petroleum Waste Stream

The petroleum wastes generated at site consist of used oil, diesel fuel, lubricants and solvents. These wastes are segregated in order to make the individual waste streams easier to reuse or recycle, or to permit recovery of any by-products. Special precautions are exercised when handling these materials since their improper release or disposal could adversely affect the environment. Personnel working with these products receive specific safety training for their handling.

Used Oil

The used oil generated from servicing vehicles, equipment, and generators is stored in marked, aboveground tanks adjacent to the lube storage building beside the maintenance shop (467 000L), power plant 1 (96 000L) and power house 2 (72 000L). Any smaller amounts collected in drums are stored at the Waste Transfer Area. All connecting pipes are aboveground, making it easy to inspect for leaks. The Diavik Surface Operations department undertakes regular monitoring.

Transfer of used petroleum products is performed in the lined area of the storage facility. Used petroleum products not suitable for reuse are ultimately back-hauled to an off-site licensed facility for recycling.

Used oil pails that are 20 L or larger are collected separately and will be inspected by Site Services to determine requirements for draining and disposal. Plastic containers that are drained will be placed within the inert landfill, while others that cannot be cleaned will be stored in a sea can(s) at the Waste Transfer Area and shipped off site for disposal.

Hydraulic Fluid

Hydraulic fluid that is not reused is disposed of along with waste petroleum products to an off-site registered facility. Used hydraulic fluid is placed in labelled drums and stored in the waste transfer area or the bulk lube storage area and back hauled to an off-site facility for reuse or recycling.

Used hydraulic lines are disposed of in the landfill.

Oil Filters

Filters are required to be drained for 48 hours. A designated location has been made in the maintenance shop for the draining of oil filters. Once drained, they are crushed and stored in labelled drums. Full drums are then picked up by the Site Services department, transported to the waste transfer area and inventoried. The crushed filters are then shipped off-site to a licensed disposal facility for recycling.

Contaminated or Out-of-Date Fuels

For safety, some fuels such as Jet B aviation fuel may be condemned because of contamination, or an expired shelf life. These drums are labelled in this manner and may be reused within other fuel burning devices at site that do not have the same specifications as aviation. If fuel cannot be reused on site, it is shipped off-site and recycled as low-grade fuels at appropriate facilities.

Soil & Rock Contaminated with Petroleum Product

This plan emphasizes and facilitates the reduction of soil contamination through the lining of storage facilities, inspection and maintenance of equipment, use of trays for draining, lining of loading and unloading zones, and using secondary containment such as a berm around the tank farm areas. In spite of these measures, spills, leaks or pipe/hose ruptures can occur, resulting in hydrocarbon contamination of the soil.

The waste transfer area has a large lined area to deal with contaminated soils, referred to as a landfarm. Contaminated soil is spread in the designated area to facilitate sub-aerial bioremediation that could occur during the summer months.

Large rocks that become contaminated with petroleum products are disposed of in the Type III rock pile. Due to the size of the rocks, a puncture to the lining in the landfarm could occur and landfarming is less effective as there is little or none of the organics necessary for bioremediation. Surrounding rock piles and collection ditches prevent leachate from the Type III pile from entering the environment.

Snow Contaminated with Petroleum Product

Snow that is contaminated with petroleum products is collected in drums and taken to the Waste Transfer Area. Here it is added to the contaminated soils area. During spring thaw, water is contained within the lined, bermed area. Absorbent pads are placed on top of the water and a primitive oil water separator is used to collect any free product. The remaining water is collected with a vacuum truck and taken to the PKC pond for disposal.

Water Contaminated with Petroleum Product

Water may become contaminated with petroleum products in the event of a spill or leak. Free petroleum products float on top of water, facilitating collection using absorbent materials such as berms and pads. These pads are then collected and disposed of as outlined below. Because the Diavik water treatment plant does not treat for hydrocarbons, any of the remaining water that may have come into contact with the product is collected using a vacuum truck and disposed of within the lined and contained PKC pond.

Oily Rags and Used Absorbent Materials

All materials used to clean up petroleum products are collected in tipper bins around site, transported to the waste transfer area and stored for on site incineration.

Grease

Scrubber grease is used as part of the recovery process for diamonds and is mixed with a granular material. Once it is no longer possible to reuse the scrubber grease, it is collected in drums, transported to the waste transfer area and stored for off-site disposal.

Cardboard grease tubes are collected in drums from various areas around site and are taken to the WTA for storage until being shipped off site for disposal.

Chemicals

The site does not generate large amounts of chemical wastes. However, processing of anticipated chemical waste products is described below.

Glycol

Ethylene glycol is used for heating, vehicles, equipment, and at the airstrip as de-icing fluid. If spilled, the sweet smell of the material could attract and affect wildlife, and have a negative impact on the environment. The glycol waste stream is segregated from other wastes and is stored in marked, aboveground tanks to the lube storage building beside the maintenance shop (50 000L), power plant 1 (28 000L) and power plant 2 (30 000L). Any smaller amounts collected in drums are stored at the Waste Transfer Area. All connecting pipes are aboveground, making it easy to inspect for leaks. The Diavik Surface Operations department undertakes regular monitoring.

Transfer of glycol is performed at the lube storage building. Product not suitable for reuse is ultimately back-hauled to an approved off-site facility for recycling.

Waste Batteries

The types of batteries used include lead acid wet-filled, potassium hydroxide (alkaline) and nickel-cadmium. Use of rechargeable batteries is promoted wherever possible, and provides an example for minimizing wastes. Rechargeable batteries are regularly maintained while in service, and tested prior to disposal to confirm that it is spent. Spent batteries are labelled and stored in a designated location in the Waste Transfer Area until being crated or drummed and shipped off site for recycling (where possible) or disposal. Containers used for storage are plastic lined. The Surface Operations department is responsible to deliver the spent batteries to the waste transfer area and inventory them regularly.

Acids

Used acids are stored in approved plastic containers that are contained within enviro-packs at the Waste Transfer Area and stored within the chemical shipping container. They are then shipped off-site to an approved facility for disposal or recycling, if feasible.

Solvents

Most solvents around site have been replaced with non-toxic, citrus-based detergents and are primarily used as degreasing agents in the maintenance shops and other service buildings. An example is the use of EnSolv which is an environmentally-friendly, non-hazardous solvent specifically used within the Recovery plant. These wastes, along with any small amounts of specialty degreasing solvents which are usually toxic petroleum based chemicals, are collected and stored on site for disposal. Residual or used solvents are stored in labelled leak-proof containers or drums and/or are transferred to larger storage containers in the waste transfer area. The drums/containers are shipped off-site to a licensed disposal facility.

Flocculant

Minimal amounts of flocculants are used in the process, sewage and water treatment plants as a thickener for tailings or sludge. Any flocculants that may be spilled is collected in drums, stored at the Waste Transfer Area and shipped off site for disposal.

Freon

Freon is commonly used in refrigeration and tends to be re-circulated within equipment. However, should a leak or spill of this product occur during operations or servicing, it is collected in drums and stored at the Waste Transfer Area until it can be shipped off site for disposal.

Fluorescent Light Bulbs

Fluorescent light bulbs contain trace amounts of mercury. For this reason, they are collected in plastic lined trays or boxes around site, stored at the Waste Transfer Area and shipped off site for disposal.

Aerosol Cans

The use of aerosol cans on site is discouraged because of the potential damage they represent to the ozone layer. Aerosol cans are difficult to handle as a waste because they cannot be incinerated directly. The cans are collected separately in marked containers, stored in the Waste Transfer Area and shipped off site to a licensed disposal facility. Camp occupants are advised about this procedure and cleaning staff alerted to separate them from the general waste stream. To comply with the waste minimization policy, aerosol cans are substituted wherever possible with refillable pump/spray bottles. DDMI is investigating the possibility of using an aerosol crusher to reduce bulk aerosol disposal requirements.

Waste Paint Material

Used paint cans are collected and allowed to dry in a sea can within the Waste Transfer Area. Cans containing latex paints are incinerated and taken to the landfill for disposal. Containers that held oil-based paints are properly stored within the sea can and back-hauled in a crate to an approved off-site recycle/disposal facility.

Laboratory Chemical Wastes

Any chemical wastes which cannot be safely incinerated or landfilled at site are stored in appropriate containers at the waste transfer area and back-hauled to an approved treatment/disposal facility off site.

Biological Waste

Small amounts of hazardous biological wastes and other medical materials, such as needles, syringes, scalpels and blood and tissue contaminated items, are generated in the first aid areas. These wastes are properly contained, labelled and stored in a secure area marked "Biohazard" in the first aid centre until they are removed and incinerated. Since the contracted medical staff is most aware of the potential risks involved, these wastes are to be left under their supervision until they can be incinerated or transported off-site.

Inert Solid Waste

Throughout operations, inert wastes will be generated on site. The bulk of these wastes can be disposed of on site, but some do require shipment off site for reuse or disposal. This

category includes items such as vehicles, buildings, plastics, clean paper and wood products, and air filters.

Conveyor Belts and Tires

Re-use of tires is encouraged; some alternate uses for tires are to store materials in the parts lay-down area and to protect roads in turning areas. Research is being done to try and find alternative uses or recycling options for conveyor belts and tires. Used conveyor belts and tires are disposed of in the landfill and eventually covered with large quantities of waste rock or coarse processed kimberlite.

Vehicles

Vehicles and equipment will be driven or back-hauled for reuse/recycle when they are no longer useable for the project. While awaiting backhaul, salvageable vehicles will be stored in a laydown area.

Plastics

Plastic wastes generated are mainly from food packaging, cleaning products and lubricants. Plastic containers that originally contained toxic or hazardous materials are fully drained before being stored in the WTA for off site disposal. Plastic containers that contained non-toxic, non-hazardous materials will be disposed of in the inert landfill. Plastic waste from food containers is incinerated to prevent animal attraction.

In accordance with the waste minimization policy, use of disposable dishes is discouraged in an effort to reduce waste generation.

Corrugated Cardboard

Clean, corrugated cardboard waste is generated mainly from packaging. Cardboard is burned in the designated burn pit within the waste transfer area.

Paper

Paper waste generated consists of office paper, newsprint, and packaging. Shredders shred confidential paper, which may then be re-used as packaging material. Paper reduction is achieved by using e-mail, voice message devices, telephone or verbal communications rather than written whenever possible, and using both sides of the paper when photocopying or printing. Intermediate collection points for recyclable paper are established in office areas. Paper materials are incinerated or burned in the burn pit.

Scrap Metal

This waste stream consists of ferrous and nonferrous scrap metals of various types, which have low recycling price and are hard to recycle. Metal scraps are generated from siding, piping, and other similar items. Scrap metal is disposed of in the landfill.

Waste Lumber

Waste lumber is burned in the designated burn pit in the waste transfer area. Larger pieces are salvaged and temporarily stored in laydown areas until condemned by site staff. Once condemned, they are also burned within the burn pit. DDMI will be considering stockpiling used lumber materials and will evaluate the use of backhauls to communities for use as building materials.

Air Filters

Air filters are collected in burnable garbage collection bins around site. These filters are taken to the burn pit at the Waste Transfer Area and are burned to reduce their volume prior to being disposed of at the landfill.

Buildings & Bulk Debris

Old buildings no longer required, or any other large sized debris, will be relocated for reuse to other areas on site, where possible.

Sandblasting Residue

Sandblasting operations are carried out to prepare some metal surfaces for coatings. During sandblasting activities, the surrounding areas are shrouded for dust control and all residual materials resulting from the sandblasting are collected and stored in drums in the waste transfer area. For large sandblasting activities, the sandblast residue is stockpiled in a designated area, transferred to a truck and disposed of in the inert landfill. Any stored material is placed in the approved landfill or is shipped off-site for disposal.

Incinerator Ash

Ash from the incinerators is collected in bins adjacent to the incinerators themselves. This ash is then transferred to the burn pit to assist in burning operations. When the burn pit is cleaned out, contents are placed in the landfill.

Solid Domestic Waste

The solid domestic waste stream consists of food waste, recyclable containers (cans, bottles), inert non-combustible domestic waste, packaging, corrugated cardboard, paper, and paper products. These materials are incinerated daily to prevent the attraction of wildlife. All non-recyclable solid wastes, which cannot be incinerated, will be transported to the landfill and buried there.

Food Waste

Kitchen staff collects all food waste indoors. Waste transfer staff collects this waste and incinerates it as soon as possible. This is done throughout each day in order to minimize potential attraction of and its negative impacts on wildlife in the area. Bag lunches are collected daily from remote offices and trailers for incineration. An employee-driven recycling program for pop cans and bottles was initiated in 2007, and proceeds from this program are donated to charity.

Paper and Cardboard

Any paper or cardboard products that may have come into contact with food, or was used as food packaging, is disposed of in the incinerators.

Cooking Grease

Oil and grease from the kitchen is collected in plastic drums and packaged indoors. Once the drums are full, they are transferred to the warehouse for immediate shipment off site to Yellowknife for disposal.

Sewage Sludge

The biodegradable organic components removed by screening in the sewage treatment plant are dewatered and stored in the designated sludge storage area within the waste transfer

area. Grey water and non-biodegradable sludge, such as chemically precipitated sludge or sludge settled from the wastewater treatment plants with the aid of flocculants or coagulants, is pumped into the Processed Kimberlite Containment (PKC) area.

Miscellaneous Waste

Various kinds of waste other than those mentioned above are collected and sorted in the waste transfer area. These other wastes are then either stored in designated locations for back hauling, burnt in the incinerators or burn pit, or disposed of in the landfill. All the wastes will be handled and transported by trained personnel employed by the Surface Operations department.

Site Facilities

The waste transfer area (WTA) has been established to ensure the proper handling of wastes on site. Contained within this area are the following facilities:

- Contaminated soil containment area;
- Incinerators;
- Burn pit;
- Sewage sludge containment area;
- Chemical storage shipping container;
- Storage areas and sheds for drums, crates, bins, totes, etc.; and,
- Office, lunchroom & washroom facilities.

An approved landfill is also used for the disposal of clean, inert waste. Location of the facility is shown in Appendix A, Figure 3.

Waste Transfer Area

The facility was relocated in 2008 and is now adjacent to the perimeter road to the explosives storage area on the south part of the island (Figure 3). The whole area is lined with HDPE material and is surrounded by a gated, chain link and barbed-wire fence erected to control wind transportation of any litter and wildlife intrusion. The majority of wastes are stored and inventoried here while awaiting backhaul. Sea cans and sheds are used for storage of labelled items that will be back hauled to recycling or disposal facilities. This helps to prevent items being buried by drifting snow, and ensures year-round accessibility. Drums are labelled appropriately, inventoried, manifested and eventually transported off site. The burn pit is operated here, as are the incinerators for food waste. Sewage sludge is collected in an approved area within this facility for future use in reclamation. An approved landfarm is also located within the facility for deposition and remediation of petroleum contaminated soils. A new incinerator building is scheduled for construction in the summer of 2011.

Land Farming

Hydrocarbon contaminated soils from spills or other releases are land-treated in a designated area within the Waste Transfer Area. The WTA cell is designed and constructed with a berm, arctic geomembrane liner and sump system. The geomembrane was placed on a sand cushion and covered with two layers of select material.

Hydrocarbon-contaminated soil is placed in rows or piles during summer months to allow for remediation to acceptable levels by using natural microbiological processes (bioremediation). Depending on the concentration of contaminant, additional soil may be added. To enhance the turn around time, fertilizers such as ammonium nitrate or sewage sludge could be applied to aid the bioremediation process and improve the efficiency of the landfarm. Once hydrocarbons have degraded to the CCME Industrial level for coarse-grained surface soils,

the soil will be transferred to the landfill where it will be encapsulated within the rock pile or PKC area.

Petroleum Waste Storage Facilities

Design and Location

Individual departments are responsible for collecting all petroleum-based waste in leak proof containers within their workshops or laydown areas. The Surface Operations department periodically collects and transports these waste products, stores them in properly labelled, lined and sealable containers in the Waste Transfer Area or transfers them to aboveground bulk storage tanks on site.

A lined, bermed bulk storage area is located beside the lube storage building adjacent to the maintenance complex. A 467 000 litre aboveground used oil tank is located in this area as well as a 50,000 litre waste coolant tank. Adjacent to power plant 1, inside a concrete bermed area is a 28 000 litre used glycol tank and a 96 000 litre used oil tank. Adjacent to power plant 2, inside a concrete bermed area is a 30 000 litre used glycol tank and a 72 000 litre used oil tank. Also in this area is a day tank for diesel fuel.

Manifest Requirements

Manifests are compiled to accompany hazardous recyclables or wastes when they are transported to approved facilities. Information on the manifest includes type of waste, amount shipped, how the material is contained and facility to which it is being transferred. The Surface Operations department is responsible for preparation and tracking of these manifests, as well as arranging methods of transportation of the materials to the off-site licensed facility.

Incompatible Wastes and Container Requirements

The risk of mixing various wastes that could react to produce heat, gas, fire, explosion, corrosive or toxic substances is reduced by segregating all chemical waste according to their hazard classification, and leaving outdated chemicals in their original, labelled containers. Chemicals requiring special containers remain in the containers in which they were purchased (e.g. acids) with additional appropriate empty containers available for emergency purposes.

Training

There are designated operators for handling hazardous material/waste. All operation personnel involved in the handling of hazardous waste are fully trained for personal safety and protection. The onsite Emergency Response Team (ERT) is trained in spill response. Responsibility for waste management is assigned to the Surface Operations department. In addition, all personnel entering the camp are given basic instructions for complying with the waste management system during site orientation and environmental awareness training sessions.

Surveillance and Monitoring

Personnel using the vehicles, machinery and equipment for the various facilities on site identify any requirements for maintenance work and report the need for repairs. Routine scheduled inspections are performed to minimize the potential for leaks or atmospheric pollution and a record is kept of maintenance needs and servicing performed. The Site

Services department maintains the various waste collection transfer and disposal points, inventories of bulk wastes, waste management datasheets, and status of protective equipment and spill kits. This assists in evaluating the capacity of waste management facilities, planning for logistics associated with back hauling and requirements for any modifications to the system. In addition to this, the Environment department conducts waste inspections at the waste transfer area and landfill every other day, as well as a site-wide compliance inspection on a weekly basis.

Landfill

Site Selection and Design

The approved inert landfill at the former quarry was closed in January 2008. The new inert landfill location was approved by the INAC Inspector and is located within the country rock pile. Any future requirements for additional landfill sites would be selected in consultation with the INAC Inspector and given full consideration of environmental criterion required for site selection.

The landfill site is to be used to dispose of inert solid waste as well as ash from the incinerator. The landfill will be regularly covered with either course kimberlite material or Type I (clean) rock. A two to three meter layer of till and waste rock will be applied as a cap before abandoning the landfill, ensuring that the contents of the landfill will remain permanently frozen. This will restrict the production and movement of leachate. The fill for the cover will be obtained from the till stockpile in the northeast sector of the north country rock pile. The cover will be applied as the landfill progresses, with most of the capping done during the summer so that at closure only a small area would require capping. During the winter months only a thin cover will be applied. The layer will be re-compacted during the spring and built up during summer.

Signs will be posted to identify the disposal area. The landfill will be operated by trained personnel from the Surface Operations department, with inspection and monitoring being performed regularly. Records will be kept regarding findings and recommendations will be evaluated and executed.

Contingency Planning

Improper Disposal

Any improperly disposed material identified by waste management crews are removed and transferred for proper disposal. For example, non-burnable material will be removed from the incinerator waste stream and transferred to the designated area in the landfill. Hazardous wastes are stored in the waste transfer area until they can be shipped to licensed facilities off-site.

Fire

In case of an accidental disposal of oxidizing, reactive or flammable material, members of the Emergency Response Team (ERT) are notified immediately and the emergency response unit is dispatched in accordance with the procedures outlined in the Contingency Plan.

Extreme Weather Conditions

During extreme winds and blizzards, the disposal of ash will be curtailed. Mitigative procedures such as cover and containment work in the landfill are initiated to shield materials from winds or disposal is curtailed until weather conditions improve.

Incinerators

Two incinerators are located at the waste transfer area to incinerate burnable materials, including food wastes, as required. The incinerated ash is stored inside a bin capable of holding 1.2 cubic meters. Ash is then used in the burn pit and finally disposed of in the landfill area. Two new water scrubbed incinerators are scheduled for installation in the summer of 2011.

Appendix A

Figures



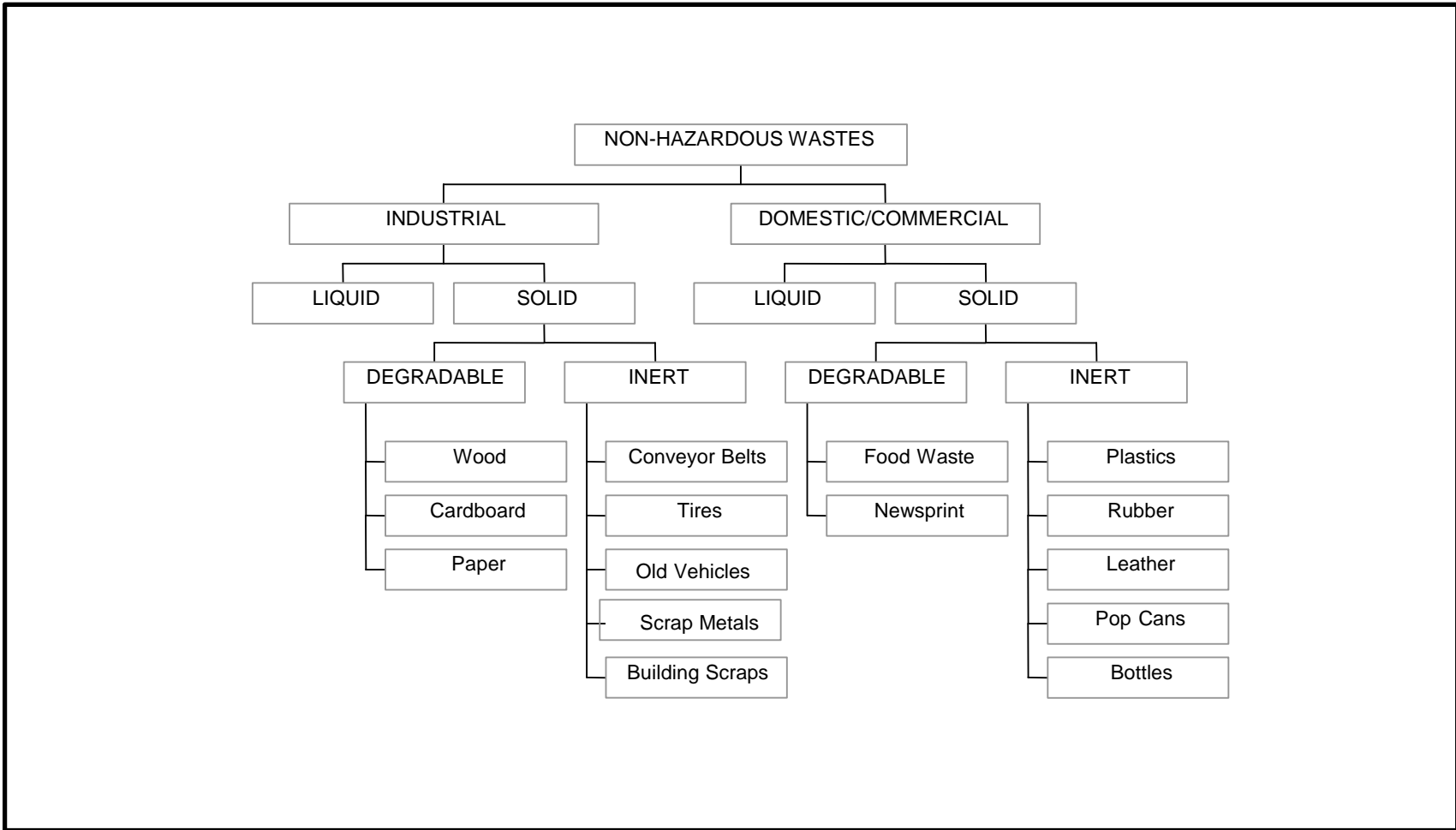


Figure 1: Classification of Non-hazardous Waste Generated at Diavik Mine Site

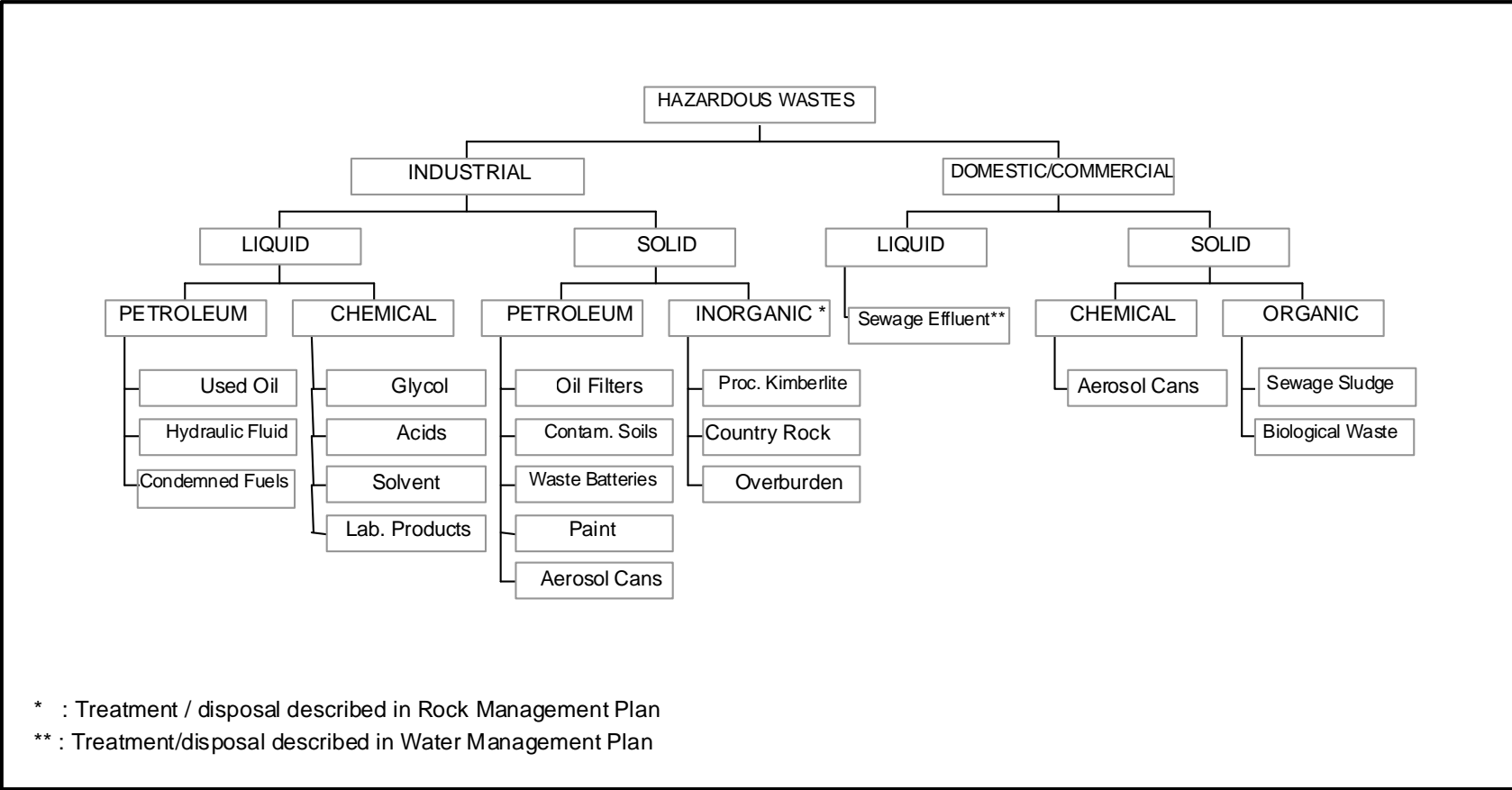


Figure 2: Classification of Hazardous Waste Generated at Diavik Mine Site

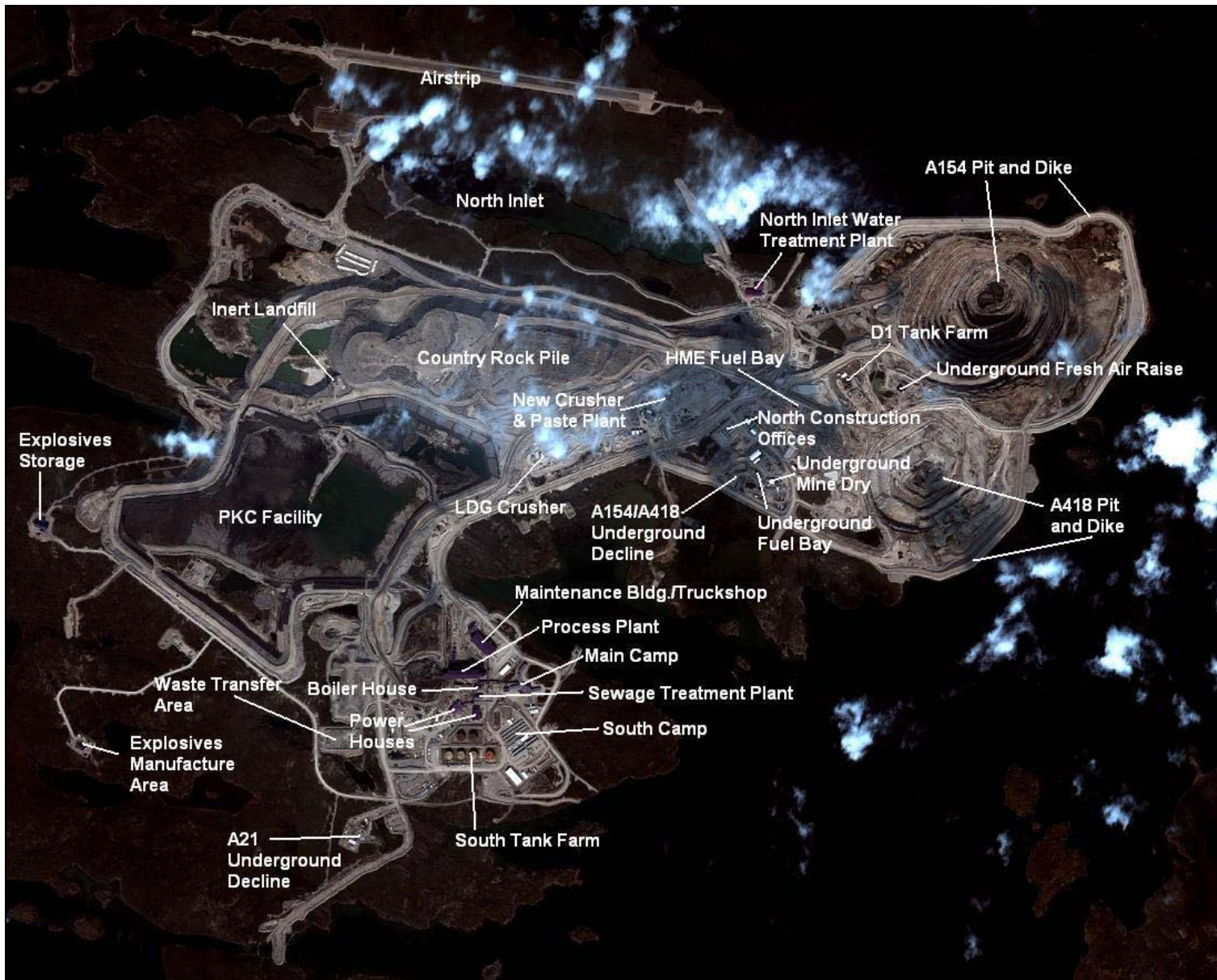


Figure 3: Diavik Mine Site Layout

