



Waste Management Plan

Thelon Project
ATHA Energy Corp.
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Table of Contents

1.0 Introduction.....2

2.0 Waste Management2

3.0 Waste Classification and Disposal Plan4

4.0 Site Facilities8

5.0 Training9

6.0 Inspection and Monitoring.....9

1.0 Introduction

This Waste Management Plan (Plan) applies to the Thelon Property (the Property or the Project) operated by ATHA Energy Corp. (ATHA) (through its subsidiary, ATHA Energy (NU) Corp. (ATHA NU)). This Plan shall be in effect from date of issue of applicable land use license(s) until the expiry of such licenses.

All employees and contractors working on the Property are to be aware of and follow this Plan. A copy of this Plan is to be posted in an office on the Project, once established. In addition, this Plan is available digitally on ATHA's internal network. Contact the Project Manager for a copy of this Plan.

ATHA endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment, as well as the safety and health of all employees, contractors, and the public, from any potential harmful effects of materials and operations on the Project. Waste Management at the Property is to be conducted in accordance with Federal and Territorial Acts, Regulations, Guidelines, and Recommendations.

This Plan should be used in conjunction with other ATHA work procedures and management plans including the:

- Abandonment and Restoration Plan
- Wildlife Management Plan
- Spill Contingency Plan
- Radiation Hazard Control Plan

2.0 Waste Management

2.1 Definition of Wastes

At the Property, waste is a term used to describe materials that are no longer wanted or are unusable for their original intended purpose. Hazardous waste is defined as "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". (*Guideline for the General Management of Hazardous Waste, 2010*). Hazardous waste often requires specific management measures to ensure the health and safety of the workers or the environment.

2.2 Waste Sources

ATHA has identified the types of waste to be generated on the Property from exploration activities and camp operations. ATHA distinguishes waste into two types: non-hazardous (inert) waste (Table 1), and hazardous waste (Table 2).

Table 1: Non-Hazardous (Inert) Wastes

Waste Type	Examples	Estimated Quantity Generated
Drilling greywater	Drill cuttings and water	< 289 m ³ /day
Hazardous	Radioactive drill cutting fines	minimal
Sewage	Human waste	from 20 – 40 people
Camp greywater	Water from kitchen and sinks, showers	<10 m ³ /day
Combustible solid waste	Food wastes, paper, untreated wood (sent to incinerator daily)	variable
Incinerator ash	Ash from the incinerator	minimal
Non-combustible solid waste - scrap metal	Empty drums nails/screws	<10 empty drums/day
Non-combustible solid waste - Plastics/Glass	Bags, bottles, packaging, Bottles, jars	variable
Non-combustible solid waste - Equipment	Pumps, motors, fans, heaters, screens	variable / negligible
Non-combustible solid waste - Rubber Products	Tires, floor mats	variable / negligible
Waste oil	Used oil- hydraulic and motor oil	minimal
Contaminated soils	Contaminated soil/snow/water	unknown

Table 2: Hazardous Waste

Waste Type	Examples	Uses	Estimated Quantity Used
Petrochemicals - Diesel		Generators, Tent heating	~2 drums/day
Petrochemicals - Jet Fuel	Jet A or Jet B	Helicopter	~2-3 drums/day
Petrochemicals - Gasoline		Pumps, Skidoos	~0.1 drum/day
Petrochemicals - Oil	Hydraulic, motor	Generators	~ 0.001 m ³ /day
Solvents	Cleaning products	Cleaning	Negligible
Electronics	Computers, transformers	Camp operations	Negligible
Light bulbs	Regular bulbs, compact fluorescent tubes	Lighting	Unknown
Batteries	Dry cell batteries, lead-acid based batteries	GPS, computers, satellite phones, generators	Unknown

2.3 Waste Management Activities

This Plan is designed to ensure the proper handling, storage, transportation, recycling, treatment, and disposal of hazardous wastes to reduce the potential impacts waste could have on the environment and workers health and safety (*Guideline for the General Management of Hazardous Waste, 2010*). Materials are to be used efficiently, to reduce the amount of waste generated. Wastes created are to be sorted and classified according to their specific characteristics and handled accordingly.

2.4 Waste Re-use and Recycling

ATHA engages in reusing and recycling materials whenever possible, to reduce the amount of waste generated. Metal and wood will be repurposed to its full extent. Scrap metal will be removed from the property regularly and shipped south to an authorized metals recycling facility. Recyclable glass and plastics will be segregated accordingly and will be removed from the property regularly and shipped south to an authorized recycling facility.

3.0 Waste Classification and Disposal Plan

3.1 Hazardous Wastes

All hazardous waste materials will be collected in sealed and appropriately labelled containers and stored in secondary containment and in accordance with any permit or license conditions. All hazardous waste will be removed from the property regularly for recycling or authorized disposal. Hazardous waste will be transported following the Transportation of Dangerous Goods (TDG) and International Air Transport Association (IATA) regulations. Refer to ATHA's *Spill Contingency Plan* for policies and procedures dictating the safe transport, storage and handling of fuels and other hazardous materials and response procedures to be followed in the event of a spill.

3.1.1 Used Oil

Waste oil from generators, pumps, vehicles, or other equipment will be collected and stored, sealed, and labelled in 205-L drums. All waste oils will be removed from the Property regularly and will be transported to an authorized hazardous waste disposal facility.

3.1.2 Hydraulic Fluid

Waste hydraulic fluids will be collected and stored, sealed, and labelled in 205L drums. Waste hydraulic fluids drums will be removed from the Property regularly and are to be transported to an authorized hazardous waste disposal facility.

3.1.3 Contaminated Fuels

Contaminated and waste fuels will be collected and stored in sealed and labelled 205-L drums. All contaminated and waste fuels will be removed from the Property regularly and will be

transported south to an authorized waste disposal facility.

All drummed fuels will be stored in secondary containment berms, in organized horizontal rows, with bungs tightly secured and oriented at 3:00 and 9:00 o'clock positions to mitigate moisture inflow. All drummed fuels will be clearly labelled in accordance with the Workplace Hazardous Materials Information System (WHMIS) which includes the name of the fuel provider, the date the drum was filled, and the type of fuel contained within. Drummed jet fuel has a limited drum life of two years after which it must be retested to confirm that it remains compliant with the requirements of the Canadian General Standards Board specified for Aviation Turbine Fuel. All efforts will be made to use jet fuel prior to the expiry date specified on the individual drums. In the event that the drum is not used prior to the expiry date the fuel will be tested and recertified so as to avoid designation as waste fuel.

3.1.4 Solvents

Whenever possible, non-toxic alternatives will be used in place of petroleum-based solvents. Waste solvents will be sealed in their original containers and stored in the hazardous waste storage area. Those containers will be removed from the property regularly and transported to an approved disposal facility.

3.1.5 Contaminated Snow and Ice

All contaminated water, ice and snow will be cleaned up immediately and contained in sealed and appropriately labelled 205-L drums and stored in secondary containment berms. Drums containing contaminated water ice or snow will be removed from the site regularly and transported to an approved disposal facility. Please refer to the *Spill Contingency Plan* for additional procedures for spills resulting from contaminated water, snow, and ice.

3.1.6 Contaminated Soils

All contaminated soil will be cleaned up immediately and contained in sealed and appropriately labelled 205-L drums and stored in secondary containment berms. Drums containing contaminated soils will be removed from site regularly and transported to an approved disposal facility or pending the appropriate authorizations, contaminated soils may be remediated by soil farming. Please refer to ATHA's *Spill Contingency Plan* for additional procedures for spills resulting from contaminated soils.

3.1.7 Used Rags and Sorbents

Used rags and sorbent pads will be incinerated on-site in a dual chamber, forced-air incinerator. Granular sorbents will be placed in sealed and labelled containers and stored in the hazardous waste storage area and will be removed regularly and transported to an authorized disposal facility.

3.1.8 Empty Drums and Hazardous Materials

After use, all fuel drums will be drained of residual contents and aggregated into 205-L waste fuel drums. All empty drums and hazardous materials containers will be stored in a designated area.

Empty drums will be removed from the site regularly and transported south to be returned to the supplier for recycling or to an authorized facility for disposal.

3.1.9 Waste Batteries

Dry cell batteries (AAA to D cell, 6 or 9 volts) will be collected in a designated container and backhauled to an approved recycling facility.

Waste lead acid batteries will be packaged in accordance with TDG Regulations and will be removed from the site regularly. All waste lead acid batteries will be transported south for disposal at an authorized facility.

3.1.10 Aerosol Cans

Empty aerosol cans will be stored in a designated and appropriately labelled container and will be backhauled for proper disposal.

3.1.11 Fluorescent Bulbs and Tubes

If possible, waste fluorescent bulbs and tubes will be packaged in their original container and backhauled to an accredited facility. Fluorescent bulbs and tubes are considered hazardous if broken. Broken bulbs/tubes will be collected in a sealed drum; labelled and shipped to a registered hazardous waste receiver.

3.1.12 Radioactive Wastes

A cutting retrieval system is used during drill operations to collect all cuttings. Non-mineralized cuttings are to be captured and deposited in a natural depression. If uranium concentrations are greater than 0.05% (eU equivalent), drill cuttings will be disposed of down the drill hole and sealed by grouting the upper 30 meters of bedrock. If down-hole disposal is not possible, cuttings will be collected and stored in sealed steel 205-L drums. Sealed drums containing drill cuttings with uranium concentrations greater than 0.05% or eU equivalent will be temporarily stored on an elevated flat dry outcrop, 100m from the high-water mark of any waterbody, the location of which is yet to be determined. A radioactive waste storage location will be submitted to the appropriate regulatory bodies prior to drums being stored on site. All drill waste drums will be removed to be disposed of at an accredited facility at the end of the field season.

3.2 Inert Non-Combustible Solid Waste

3.2.1 Tires and Other Rubber Materials

Tires and other rubber materials that cannot be patched or repurposed will be backhauled for proper recycling/disposal.

3.2.2 Scrap Metal

Scrap metal will be repurposed as much as possible. Scrap metal will be removed from the property regularly and shipped to an authorized metals recycling facility.

3.2.3 Glass

All waste glass will be stored in a sealed and clearly marked container. Waste glass will be removed from site regularly and shipped for recycling at an authorized facility.

3.2.4 Electronics

Electronics and electrical equipment will be collected in a container. Waste electrical equipment will be removed from site regularly and shipped for disposal or recycling at an authorized facility.

3.2.5 Vehicles and Other Mechanical Equipment

Broken vehicles and mechanical equipment that is unserviceable and no longer functioning will be removed from site and transported for refurbishing or disposal at an authorized facility.

3.3 Inert Combustible Solid Wastes

All Inert Combustible Solid Wastes will be backhauled for disposal or incinerated in a dual chamber, fuel-fired, forced-air incinerator following the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Waste* and *Canada-Wide Standards for Dioxins and Furans*. Ash generated from the ongoing incineration will be stored in sealed 205-L drums. Ash drums will be removed from the site regularly and transported south for disposal at an authorized facility.

3.3.1 Food Waste and Packaging

Dedicated waste bins will be provided for the collection of food waste and packaging at several locations throughout camp and at the drill sites. The bins will be located and managed such that they avoid interaction with wildlife. Food waste and packaging will be incinerated daily and in accordance with the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Wastes*. Ash generated from the ongoing incineration of food waste and packaging will be stored in sealed 205-L drums. Ash drums will be removed from the site regularly and transported south for disposal at an authorized facility.

3.3.2 Paper and Cardboard

Use of electronic methods for communication are encouraged at the Project to minimize the amount of paper waste created. Waste cardboard will be reused whenever appropriate, such as for backhauling of materials. Waste paper and cardboard will be incinerated in accordance with the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Wastes*. Ash generated from the ongoing incineration of paper and cardboard will be stored in sealed 205-L drums. Ash drums will be removed from the site regularly and transported south for disposal at an authorized facility.

3.3.3 Waste Lumber

Unusable waste lumber will be incinerated in accordance with the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Wastes*. Ash generated from the ongoing incineration of waste lumber will be stored in sealed 205-L drums. Ash drums will be removed from site regularly and transported south for disposal at an authorized facility incinerated.

3.4 Sewage

Pacto toilets are used; bags containing blackwater waste will be incinerated in accordance with the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Wastes*. Bags containing the blackwater waste may be incinerated on site or may be transported for incineration. Ash generated from the incineration of Pacto wastes will be sealed in designated 205-L drums and labelled accordingly. Ash drums will be removed from site regularly and transported for disposal at an authorized facility.

4.0 Site Facilities

4.1 Hazardous Waste Storage Area

An area adjacent to the main fuel cache at the camp with secondary containment will be used for hazardous waste materials. The hazardous waste storage area will be a minimum of 31 metres from the normal high-water mark of any water body and such that there is no possibility of a potential spill entering any water body. All hazardous wastes will be sealed and labelled in containers and stored in the hazardous waste storage area until they can be backhauled for recycling or authorized disposal.

Secondary containment berms will be equipped with Spilfyter RailMat 3-ply hydrocarbon absorbent fabric (or similar) and Rain Drain hydrocarbon filters for water drainage. Secondary containment structures will be capable of holding 110 percent of the volume of the largest fuel reservoir that is housed within the secondary containment. These structures will be of sufficient height and depth to hold any potential spill or failure and will be made of material that is sufficiently durable to withstand Nunavut's climate and the natural terrain. Secondary containment structures are to comply with all applicable federal and territorial laws, regulations, and guidelines.

Radioactive waste materials will be contained in sealed 205-L steel drums and temporarily staged on an elevated flat dry outcrop, 100m from the high-water mark of any waterbody, the location of which is yet to be determined.

4.2 Incinerator

Any incineration on site is to use a dual chamber incinerator which will be at least 31m from the high-water mark of any water body and placed relative to camp so that the prevailing winds do not carry smoke towards camp. Combustible waste will be incinerated in accordance with the *Nunavut Environmental Guideline for the Burning and Incineration of Solid Waste* and *Canada-Wide*

Standards for Dioxins and Furans. Ash generated from ongoing incineration will be stored in sealed metal 205 L drums and removed from site regularly for disposal at an authorized facility. Waste from camps that do not have an incinerator will be transported off site for disposal.

4.3 Sump

Wastewater from the camp will be discharged to greywater sumps. A grease trap and screens will be installed on the kitchen drain to ensure grease and food solids do not enter the sump. The discharge pipe into the sump will be made inaccessible to wildlife. The grey water sump will be located at least 31 metres away from a water body. For each location of a camp, a new wastewater sump will be located at least 31 m from a water body.

Sumps will be used for disposal of non-radioactive drill cuttings, located in a naturally occurring depression. Sumps will typically be located adjacent to each drill pad, but a centralized sump may also be used when it is not feasible to use a sump at the drill pad (e.g., in winter months). When using a central sump, non-radioactive drill cuttings will be inspected for contamination of mineralized cuttings and any material used to transport the cuttings (e.g., bags) will be removed. Once the centralized sump is no longer required, it will be reclaimed by being contoured into the natural topography and covered by peat moss.

5.0 Training

Site and job-specific training will be provided to all personnel who are required to handle waste materials. ATHA will have a Level 3 First Aid Attendant on-site during operations. The Camp Manager will oversee the handling of hazardous wastes and must have valid First Aid and WHMIS. On-site management is responsible for the transportation of hazardous wastes and will have Transportation of Dangerous Goods (TDG) certification. All employees and contractors will receive training in spill management, as outlined in ATHA's *Spill Contingency Plan*.

Personnel responsible for operating or maintaining the incinerator will receive hands-on training to ensure the equipment is operated safely and efficiently in accordance with the *Nunavut Environmental Guidelines for the Burning and Incineration of Solid Wastes*.

6.0 Inspection and Monitoring

Inspections of the hazardous waste storage area and other waste storage facilities will ensure that the hazardous waste inventory is up to date, that secondary containment is in place and in good condition, and that spill kits are fully stocked. Daily monitoring of the hazardous waste storage area and the contained wastes will include an assessment of the condition of waste receptacles and storage containers, checking for damaged or leaking containers or berms, and ensuring that waste is collected and stored in the correct containers and safely placed in the storage area. Waste inspections will be completed in conjunction with the fuel storage inspections outlined in the *Spill Contingency Plan*. Spills will be treated as outlined in the *Spill Contingency Plan*. The Project Manager is responsible for supervising the monitoring and inspection program and keeping a detailed inventory of all hazardous wastes on-site.