



GOVERNMENT
OF
NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment
CERTIFICATE OF APPROVAL

Pursuant to the *Environmental Protection Act*, SNL 2002, Sections 16, 78 and 83.

Issued: July 13, 2018
Expiration: July 13, 2021

Approval No.: WMS 18-07-001
File No.: 830.000.272

Proponent: Universal Environmental Services Incorporated
P.O. Box 51, Jerseyside,
Placentia Bay, NL
A0B 2G0

Attention: Mr. Terry Dollard – General Manager

Re: Treatment of Petroleum Contaminated Soil – Wabush former incinerator site, Labrador

Approval is given for the construction and operation of a permanent facility for the Treatment of Petroleum Contaminated Soils at the Wabush, Labrador former incinerator site.

This approval does not release the holder from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Approval from the Department of Municipal Affairs and Environment (the Department) shall be obtained prior to any significant change in the design, construction, installation, or operation of the facility, including any future expansion of the works. This certificate shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the holder without obtaining written prior approval from the Minister.

This approval is subject to the terms and conditions as attached hereto, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this certificate of approval null and void, may require the proponent to cease all activities associated with this certificate of approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, SNL., 2002, c. E-14-2, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete, modify or revoke this approval at any time.


For MINISTER

Part 1: Definitions

Section 1.1: Definitions

1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.

1.1.2 In all PARTS of this approval:

- (a) **Act** means *Environmental Protection Act*, E-14.2, SNL2002, as amended;
- (b) **bioremediation (or biodegradation)** means any process (e.g. bioaugmentation and biostimulation etc) that uses microorganisms or their enzymes to attack petroleum hydrocarbon contaminants;
- (c) **bioaugmentation** means the introduction of group of natural microbial strains or a genetically engineered variant to treat petroleum hydrocarbon contaminated soil;
- (d) **biostimulation** means the modification or optimization of the microbial environment to entice or promote the existing microbial activity resulting in mineralization of the petroleum hydrocarbon contaminants;
- (e) **BTEX** means benzene, toluene, ethylbenzene, and xylene;
- (f) **CCME** means Canadian Council of Ministers of the Environment;
- (g) **CEPA** means Canadian Environment Protection Act;
- (h) **CEQG** means CCME Canadian Environmental Quality Guidelines;
- (i) **contaminant** means, unless otherwise defined in the regulations, a substance that causes or may cause an adverse effect;
- (j) **Department** means Department of Municipal Affairs and Environment;
- (k) **Director** means the Director of the Pollution Prevention Division of the Department;
- (l) **EPO** means Environmental Protection Officer of the SNL;
- (m) **field portable test method** means PetroFlag or an equivalent;
- (n) **SNL** means Service Newfoundland and Labrador
- (o) **Industrial wastewater** means the composite of liquid wastes and water-

carried waste, any portion of which results from any industrial process carried on at the facility

- (p) **MCS** means metal contaminated soils;
- (q) **MSDS** means material safety data sheets;
- (r) **OHS** means occupational health and safety;
- (s) **PAH** means polycyclic aromatic hydrocarbons;
- (t) **PCS** means petroleum contaminated soils which: (a) have absorbed or adsorbed gasoline, diesel/furnace oil, mineral oil, kerosene, hydraulic oil, aviation fuel and other petroleum hydrocarbon compounds, mixtures and blends (C2-C32). This does not include crude oil or drilling fluids unless otherwise approved by the SNL; (b) contain equal to or greater than 1000 ppm total petroleum hydrocarbons **OR** exceed limits for BTEX as outlined in the latest edition of CEQG (industrial land use for soil); (c) do not contain PAH composed of more than four benzenoid rings in excess of concentrations normally found in the products noted in item (a) above (greases, and heavy lubricating oils are likely to contain compounds having more than four benzenoid rings); (d) do not contain petroleum and/or metal concentrations at levels toxic to microbes. Microbial toxicity testing maybe be required by the Department to demonstrate that it is possible to bioremediate the suspect soil; and (e) do not contain metal concentrations which are leachable as determined by the *Toxicity Characteristic Leaching Procedure* as defined in Schedule II of *The Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Material Regulations under the CEPA, 2004*.
- (u) **professional engineer** means an individual or company that is a member in good standing with the Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL) licensed to practice engineering in a field related to the task performed;
- (v) **QA/QC** means Quality Assurance/Quality Control;
- (w) **regional Director** means the Director of the nearest SNL;
- (x) **site professional (engineer)** means a professional engineer with professional errors and omissions liability insurance coverage for environmental work of at least \$1,000,000 individually or through a registered company;
- (y) **stabilization** means the process of employing additives (reagents) to reduce the hazardous nature of waste by converting the waste and its

hazardous constituents into a form: i) to minimize the rate of contaminant migration into the environment; or ii) reduce the level of toxicity;

- (z) **solidification** means the process by which sufficient quantities of solidifying material, including solids, are added to the hazardous material to result in a solidified mass of material. Solidifying the mass is accomplished through the addition of reagents that : i) increase strength; ii) decrease the compressibility ; and iii) decrease the permeability of the waste;
- (aa) **SPLP** means synthetic precipitation leaching procedure as per US EPA Method 1312;
- (bb) **TCLP** means toxicity characteristics leaching protocol as per US EPA Method 1311;
- (cc) **third party site professional (engineer)** means a site professional engineer whom is not an employee of the proponent;
- (dd) **TPH** means total petroleum hydrocarbons as measured by the Atlantic PIRI method;
- (ee) **UESI** means Universal Environmental Services Incorporated;
- (ff) **US EPA** means United States Environmental Protection Agency, and
- (gg) **USGPM** means US gallons per minute. It should be noted that 1 US gallon is approximately equal to 0.8326 imperial gallon or 3.785 litres.

Part 2: General

Section 2.1: General

- 2.1.1 This approval applies to UESI for the construction and operation of a permanent facility for the treatment of PCS located at the Wabush, Labrador former incinerator site.
- 2.1.2 Prior to any expansion or modification of the facility, a letter of application shall be forwarded to the Department requesting an amendment to this approval.
- 2.1.3 The Minister may at any time, with reasonable notice, require the approval holder to conduct or have conducted environmental studies, site assessments, sampling, testing, or investigations where, based upon reasonable and probable grounds the Minister believes that this waste management system may have had, or has the potential to have, an adverse effect on the environment.

- 2.1.4 This facility is only approved to treat PCS using bioremediation process unless otherwise approved in writing by the Department.
- 2.1.5 Through a Memorandum-of-Understanding (MOU) this Department has authorized SNL to act on its behalf in monitoring this operation for compliance under this approval and all applicable provincial Acts and Regulations.
- 2.1.6 Contaminated soil shall only be accepted during normal working hours with the exception of contaminated soil from an emergency oil spill response.
- 2.1.7 All contaminated soils delivered to the facilities shall be placed on approved receiving and/or treatment pad(s).
- 2.1.8 The facility shall be kept fenced and a lockable access gate shall be maintained to prevent unauthorized access.
- 2.1.9 A sign shall be posted at the gate listing the company name, hours of operation and a contact name and number in the event of an emergency situation. Other signage relating to access restrictions and fire/health/safety restrictions shall be prominently displayed.
- 2.1.10 This facility is not approved to accept waste petroleum liquids for storage, discharge, or treatment.
- 2.1.11 Annual Report shall be submitted to the Department and SNL by *January 31* of each year summarizing activities of the previous year. The report shall include at a minimum:
- (a) date and time of arrival of contaminated soil;
 - (b) source name and address for contaminated soil;
 - (c) quantity (i.e. tonnes or cubic metres) of contaminated soil;
 - (d) client name and trucking company;
 - (e) name of project manager or onsite supervisor authorizing the shipment;
 - (f) total amount of treated soil removed from the site;
 - (g) the disposal location of the treated soil;
 - (h) copies of current letters from the owner operator of disposal sites;
 - (i) post treatment laboratory results;

- (j) current insurance and bonding;
- (k) groundwater monitoring wells sampling result, and
- (l) leachate collection system/holding pond(s)/holding tank(s) maintenance, sampling and discharge volumes.

2.1.12 All incidents of:

- (a) contingency plan implementation;
- (b) spillage or leakage of a regulated substance;
- (c) whenever discharge criteria is or is suspected to be exceeded, or
- (d) public complaints concerning possible non-compliance

shall be immediately reported, within one working day, to a person or message manager or facsimile machine at the SNL by phoning (709) 729-3699 or by fax (709) 729-2071.

2.1.13 The maximum approved soil capacity for this facility is **32,000 tonnes**.

Section 2.2: Contingency Plan

- 2.2.1 The approval holder shall maintain the environmental emergency health & safety contingency plan and shall submit annual updates for review and approval by **January 31** of the next year to the Department.
- 2.2.2 The approval holder shall ensure that this approval or a copy of this approval is kept on site at all times, and that personnel directly involved in the operation of the treatment facility are made fully aware of the terms and conditions which pertain to this approval.
- 2.2.3 All responsible personnel who are directly involved with operation and maintenance of the processing system shall be provided with the copy of this approval.
- 2.2.4 In case of emergency UESI shall call emergencies and spill report line: **1-800-563-9089 or (709) 772-2083**.
- 2.2.5 The operator(s) shall have formal environmental training from a recognized institution or equivalent experience. Proof of training and/or resume(s) shall be included in the annual report(s).

Section 2.3: Legislation & Guidelines

2.3.1 The activities associated with this operation may involve, but not limited to the following provincial Acts and Regulations:

- *Dangerous Goods Transportation Act and Regulations*
- *Newfoundland Fire Prevention Act and Regulations*
- *Environmental Protection Act*
- *Air Pollution Control Regulations*
- *Storage and Handling of Gasoline and Associated Products Regulations*
- *Used Oil Control Regulations*
- *Water Resources Act, and*
- *Environmental Control Water and Sewage Regulations*

2.3.2 The activities associated with this operation may involve, but not limited to the following federal Acts and Regulations:

- *Canadian Environmental Protection Act and Regulations*
- *Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Material Regulations*
- *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*
- *Transportation of Dangerous Goods Act and Regulations*
- *Fisheries Act, and*
- *National Fire Code*

2.3.3 UESI shall operate this permanent PCS treatment facility according to the *Guidelines for Construction and Operation of Facilities Using Ex-Situ Bioremediation for the Treatment of Petroleum Contaminated Soil: GD-PPD-013 rev.4 or additional revisions.*

Section 2.4: Financial Security/Assurance

2.4.1 UESI shall maintain valid environmental liability impairment insurance in the amount of \$1,000,000 otherwise this approval is considered null and void.

2.4.2 UESI shall maintain and file a surety bond of \$20,000 with the Department, otherwise this approval is considered null and void.

2.4.3 UESI shall submit the annual updates of the financial assurance to the Department.

2.4.4 UESI shall submit three months advance notice to the Department if they intend to cancel and/or change the insurer or bonding agent.

Section 2.5: Record Keeping

- 2.5.1 UESI shall record and retain all information in respect of any sampling conducted or analyses performed in accordance with this approval for a minimum of five years, unless otherwise authorized in writing by the Director.
- 2.5.2 UESI shall record and retain all the following information for a minimum of five years:
- (a) the name and address of the person(s) who make/discover any contravention of the Act, the regulations or this approval; and
 - (b) a detail description of the remedial actions/measures taken in respect of the contravention of the Act, the regulations or this approval.

PART 3: Construction

- 3.1.1 The proponent shall construct the facility as per the application submission *Proposed Soil Treatment Facility Labrador City, NL SITE PLAN 5-987-01.DWG*, dated June 21, 2018, by Neil C. Hunt, Registered Professional Engineer.
- 3.1.2 Environmentally sound practices are required in all aspects of construction and ongoing maintenance activities.
- 3.1.3 As built drawings and a Certificate of Completion, signed by an engineer in good standing with the Professional Engineers and Geoscientists of NL shall be submitted to the Department upon facility completion.
- 3.1.4 GPS coordinates for site features including all monitoring wells shall also be submitted to the Department for file records and entry into the Environmental Monitoring Data System.

PART 4: Operations, Limits, Monitoring and Reporting**Section 4.1: General**

- 4.1.1 UESI shall operate the facility as described in the application submitted to the Department, entitled, *"Biopile Treatment Facility for Hydrocarbon Impacted Soil, Wabush, NL Former Incinerator Site Operations and Maintenance Manual"*, dated June 21, 2018.
- 4.1.2 UESI shall construct on site at a minimum all of the following:

- (a) One (1) Oil/Water Separator (with butterfly valve);
 - (b) Leachate Collection System;
 - (c) A Receiving/ Storage Pad
 - (d) Two Treatment Pads, and
 - (e) Work Area (including office, scale etc).
- 4.1.3 The curbs/berms surrounding and dividing the pads shall be inspected monthly. All damage, tears, cracks or other deterioration shall be repaired immediately.
- 4.1.4 The pads shall be cleaned thoroughly and visually inspected at least annually. All damage, tears, cracks, and other deterioration shall be repaired immediately.
- 4.1.5 The top of the curb/berm surrounding and dividing the receiving and treatment pads shall at all times be a minimum of 200 mm above the pads permanent working surface located immediately adjacent to and within 600 mm of the exposed base of the curb. The working surface is defined as the permanent surface on which the contaminated soil is placed and may consist of a fixed layer of granular material or the original material of construction.
- 4.1.6 A minimum of 200 mm of curb height shall be maintained above the pads at all times. Soil shall be placed on the treatment and receiving pads in a manner which provides for the continuous flow of accumulated rainfall and/or leachate along the curb towards the centralized locations/catch basin(s) leading to the leachate holding tanks.
- 4.1.7 The curb/berm surrounding the treatment and receiving pads shall at all times be clearly visible and shall not be covered with soil.
- 4.1.8 All overflows of accumulated wastewater over the pads shall be collected and treated. These shall be considered a spill as defined in the ***Storage and Handling of Gasoline and Associated Products Regulations***. This includes standard reporting and response actions. Response and cleanup activity may cease once laboratory results of the wastewater and impacted soils reveal levels are within allowable limits for parameters of concern. Until this has been confirmed, response and cleanup shall proceed under the assumption that the wastewater exceeds allowable limits as per regulations and guidelines and is likely to cause pollution.

Section 4.2: Bioremediation of PCS

Operations

- 4.2.1 The use of cultured microbes may be regulated under the Federal *New Substances Notification Regulations*, and under the CEPA. For additional information on these regulations contact Environment Canada at (902) 426-9674.
- 4.2.2 Covering of soils is permitted to control soil moisture content and temperature.
- 4.2.3 When required, moisture addition to the biopiles shall be accomplished by utilizing the collected wastewater. Any additional water may be taken from an on-site water supply.
- 4.2.4 If constructed, all ductworks shall be mapped and marked to avoid any destruction during sample excavation.
- 4.2.5 Mixing of clean soil with contaminated soil is prohibited. However, soils delivered to the site having a high percentage of clay and silt particles may be amended and/or internal ductwork installed to increase permeability. Acceptable material for soil amendments include: sand, straw, sawdust, woodchips and coarse grained petroleum contaminated soil.

Monitoring and Reporting

- 4.2.6 All soils received at the facility shall be accompanied with a **complete chemical analysis** of the contaminated soil. The complete chemical analysis of the typical PCS must include BTEX, pH of soil and TPH concentrations, unless otherwise authorized in this approval. Analysis for metals, PAH and other contaminants of concern will be required on a site specific basis.
- 4.2.7 If **pre-delivery** lab analyses for contaminated soil have not been provided by the client, then the approval holder shall provide one sample for every **1500 tonnes** or less, unless otherwise authorised in writing by the Department.
- 4.2.8 The approval holder may accept up to **1500 tonnes** of PCS from an emergency response incident without prior sampling or testing. The contaminated soil shall be kept separately on the receiving and/or treatment pad until baseline testing is conducted.
- 4.2.9 If the source/historical information of the contaminated soil suggest that soil may be of hazardous nature, additional laboratory analysis shall be carried out as recommended by an independent consultant or as required by the SNL.
- 4.2.10 Soils containing contaminants after lab analysis, which would cause them to be classified as waste dangerous goods, as defined in the *Export and Import of*

Hazardous Recyclable Material Regulations under the *CEPA* and in provisions under the Newfoundland and Labrador *Environmental Protection Act (SNL 2002)*, shall not be accepted at this facility for treatment.

- 4.2.11 At least five (5) working days advance notice to Department and SNL of the intent to conduct **post treatment sampling** is required.
- 4.2.12 **Post-treatment** soil sampling shall be conducted or witnessed by a third party site professional engineer. The sampling results shall be stamped, signed (by third party professional) and submitted to the Director.
- 4.2.13 At a minimum, **post-treatment compliance** (composite) sampling shall be done along the longitudinal axis of the biopile. Sampling location shall be conducted at 2 metre within the biopile on either end of the biopile and then at 12 metre intervals.
- 4.2.14 Treated soils, with the permission of the Town of Wabush, are permitted to be reused on site for the purpose of site rehabilitation and refurbishment. If this beneficial reuse is undertaken, permanent records of soil volumes utilized in this manner shall be maintained in perpetuity. Treated soils may also be disposed of at an approved waste disposal sites with the permission of the owner/operator. *Re-use of treated soil at any other location is not permitted*, unless otherwise approved by the Department.

Limits

- 4.2.15 Prior to beneficial reuse or removal of the treated soil from the site, compliance sampling shall be conducted to achieve the following:
- BTEX concentrations shall be below the industrial limits for soil in the latest edition of the CEQG; and
 - TPH concentration shall be equal or less than 1000 mg/kg (ppm)
- 4.2.16 Soils with TPH less than 1000 ppm may be removed from treatment pad to facilitate further treatment of under lying soils.

PART 5: Industrial Wastewater

Section 5.1 Operation

- 5.1.1 The approval holder shall not release any substances from the facility to the surrounding watershed/environment, except as authorized by this approval.
- 5.1.2 The industrial wastewater/leachate from the pads and from treatment process shall

be managed as described in the application, unless otherwise authorized in writing by the Department.

- 5.1.3 All industrial wastewater/leachate shall be directed and collected in the oil/water separator or wastewater treatment pond for sampling prior to discharge.
- 5.1.4 The oil/water separator or wastewater treatment pond shall be cleaned on a regular basis as a preventive maintenance.

Limits

- 5.1.5 Releases from the oil/water separator or wastewater treatment pond(s) shall not exceed the limits at a minimum for the parameters specified in TABLE 5.1-A.

TABLE 5.1-A: Wastewater / Leachate Limits

Parameters	Sample Type	Limits
pH	Grab	5.5 to 9.0 pH units
Oil and Grease	Visual	No visible sheen
TPH	Grab	15 mg/L
Total Suspended Solids	Grab	30 mg/L
Ammonia Nitrogen	Grab	2.0 mg/L
Cadmium	Grab	0.05mg/L
Copper	Grab	0.3mg/L
Zinc	Grab	0.5mg/L
Nickel	Grab	0.5mg/L
Mercury	Grab	0.005mg/L
Lead	Grab	0.2mg/L
Benzene	Grab	370 µg/L
Toluene	Grab	2.0 µg/L
Ethylbenzene	Grab	90 µg/L
Xylene	Grab	180 µg/L

Section 5.2: Groundwater Monitoring Wells

- 5.2.1 GPS coordinates for the locations of the monitoring wells shall be provided to the Department. The approval holder shall conduct groundwater sampling and analyses as authorized by the Director. The six (6) groundwater monitoring wells shall be sampled annually during **May** or **June** and shall be analyzed for general water chemistry (Metals Scan, TPH and BTEX).
- 5.2.2 All monitoring wells for installation and maintenance shall follow the *CCME Subsurface Assessment Handbook for Contaminated Sites EPC-NCSRP-48E March 1994*.
- 5.2.3 If a representative groundwater sample cannot be collected because the

groundwater monitor well is damaged or is no longer capable of producing a representative groundwater sample:

- (a) the groundwater monitor well shall be cleaned, repaired or replaced, and
- (b) a representative groundwater sample shall be collected and analyzed prior to the next scheduled sampling event, unless otherwise authorized in writing by the Director.

Part 6: Decommissioning and Reclamation

6.1.1 The approval holder shall develop and submit a plan for the Decommissioning to the Director which shall include, at a minimum, all of the following:

- (a) a plan for dismantling the plant;
- (b) a comprehensive study to determine the nature, degree and extent of contamination at the plant and affected lands;
- (c) a plan to manage all wastes produced at the plant during operation and Decommissioning, and
- (d) evaluation of remediation technologies proposed to be used at the plant and affected lands.

6.1.2 The approval holder shall implement the Decommissioning plan as authorized in writing by the Director.

6.1.3 The approval holder shall develop and submit a plan for the Land Reclamation to the Director which shall include, at a minimum, all of the following:

- (a) the final use of the reclaimed area and how equivalent land capability will be achieved;
- (b) removal of infrastructure;
- (c) restoration of drainage;
- (d) soil replacement;
- (e) erosion control, and
- (f) re-vegetation.

6.1.4 The approval holder shall implement the Land Reclamation plan as authorized in writing by the Director.

- 6.1.5 The Decommissioning and Land Reclamation Plan in Section 6.1.1 and 6.1.3 shall be submitted within three (3) months of the facility ceasing operation, unless otherwise authorized in writing by the Director.

Part 7: Expiration

- 7.1.1 This approval expires on July 13, 2021.
- 7.1.2 Should the approval holder wish to continue to operate beyond this expiry date, a written request shall be submitted to Director for the renewal of this approval, *six (6) weeks prior to expiration*.

Cc. Ken Russell, EPO
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