

**DATE** August 25, 2021

**Project No.** 20368099-5000-Rev0

**TO** Bijaya Adhikari, Science and Regulatory Coordinator -  
Inuvialuit Water Board, 151 Mackenzie Road, P.O. Box 2531, Inuvik, NT X0E 0T0

**FROM** Aurélie Bellavance-Godin

**EMAIL** Aurelie\_Bellavance@golder.com

**RESPONSE TO INFORMATION REQUEST DATED AUGUST 11, 2021  
FOR N7L1-1834 - SHELL CANADA ENERGY, CAMP FAREWELL - UPDATED PLANS**

## RESPONSE

On behalf of Shell Canada Limited (Shell), Golder Associates Ltd. (Golder) is submitting this response to the information request dated August 11, 2021, for N7L1-1834 - Shell Canada Energy, Camp Farewell - Updated Plans. Numbered below are the items for clarification requested by the Inuvialuit Water Board. Responses are provided in bullet form below each item.

**1) Spill Contingency Plan:**

**a) Shell Canada Energy Environmental Policy related to regulatory compliance, environmental protection, safety, spill response and clean-up.**

- Shell has reviewed and assured that the Golder policies related to regulatory compliance, environmental protection, safety, spill response and clean-up meet or exceed their own policies. For generic guidance on Shells commitments, policies, and standards see the below URL:  
<https://www.shell.com/sustainability/our-approach/commitments-policies-and-standards.html>

**b) Details on how to obtain additional copies of the plan (e.g., contact name, address, email and telephone).**

- To obtain additional copies of the plan, please contact:

Christopher Boyd, Ph.D.  
Environmental Project Manager  
Shell Canada Energy  
400 - 4<sup>th</sup> Avenue SW  
P.O. Box 100 - Station M, Calgary, Alberta T2P 2H5  
Telephone: 403-691-2855  
Email: Christopher.Boyd@shell.com

**c) Map(s) showing site features such as buildings, roads, culverts, airstrips and other infrastructure; all surface water bodies and direction of water flow including catchment basins; storage locations of each hazardous material; probable spill locations and direction of flow on land and water; locations of all response equipment; environmentally sensitive areas; any approved disposal sites; topography; and any other important on or off-site features.**

- A map showing site features (e.g., emergency shelter, road, airstrip, groundwater monitoring wells) and topography is included in Attachment 1.
- There are no hazardous materials normally stored on the site. There are no culverts, no catchment basins or approved disposal sites at Camp Farewell. Waste material produced through the proposed activities will be removed from the site for disposal, as per the Waste Management Plan.
- As there are no hazardous materials stored on the site, there are no probable spill locations on land. If the 25,000-L double-hulled envirotank on the barge were to lose its contents and overflow secondary containment, diesel would flow into the river (direction of flow shown in Attachment 1). If the fuel truck were to experience a spill, this could occur anywhere on the site. The likely direction of surface flow on land is shown in Attachment 1. Spill kits are located on the barge and at the emergency shelter, as shown in Attachment 1, and on each piece of equipment. Please refer to the Spill Contingency Plan for spill response actions on land and in water.
- Camp Farewell is within the Kendall Island Bird Sanctuary and several other sensitive areas as identified through the Tuktoyaktuk, Inuvik and Aklavik Community Conservation Plans (CCP), listed in the table below. These areas have not been shown on the maps provided as they cover a large area.

Site Number	Name	CCP
201B	Fall moose harvesting area	Inuvik
304C	Spring goose harvesting area	Tuktoyaktuk
312C	Fall waterfowl harvesting areas	Tuktoyaktuk
322C	Critical grizzly bear denning areas	Tuktoyaktuk
706E	Kendall Island Bird Sanctuary	Inuvik, Aklavik, Tuktoyaktuk
715C	Mackenzie River Delta Key Migratory Bird Habitat	Inuvik, Aklavik, Tuktoyaktuk
718D	Central Mackenzie Estuary	Inuvik, Aklavik, Tuktoyaktuk

- d) List of type and amount of hazardous materials normally stored on-site, the storage capacity and the type and number of storage containers. The storage locations for each of these materials should appear on the map of the site.**
- There are no hazardous materials normally stored on the site. Hazardous material produced during the field program (e.g., waste oil, oil, fuel filters, used spill kits) will be properly packed in approved transport containers and shipped to a licensed disposal site.
- e) Page 2, section 2.1, paragraph 3: Quantify the maximum fuel quantity in the fuel truck that may cause a worst-case scenario.**
- The fuel truck has a maximum volume capacity of 2,800 L that may be released in a worst-case scenario.
- f) Page 4, Table 1: Spill Response Contact List - New phone number of GNWT ENR Water Resource Officer, Inuvik is 867-678-6652, confirm with Water Resource Officer and update Table 1.**

Organization	Contact	Phone Number
Government of the Northwest Territories Environment and Natural Resources, Inuvik (Water Resources Officer)	Lloyd Gruben	867-678-6652

- g) Page 16, section 10.0, paragraph 1, line 1 states ‘SDSs have been provided in Appendix C for the materials outlines in Section 2’. Appendix C includes MSDS only for Diesel. As outlined in section 2, MSDS for Lube Oil and Grease and Propane are not include.**
- Additional safety data sheets (SDS) for lube oil, grease and propane are provided in Attachment 2.
- h) If the public may be impacted by a spill, include notification procedures to alerts the public.**
- The public is not anticipated to be impacted by a spill.
- i) Procedures for transferring, storing, and managing spill-related wastes.**
- Hazardous waste generated from spill response activities such as spill kits, impacted soil, water, and spill source material, will be properly packed in approved transport containers and shipped to a licensed disposal site. E. Gruben’s Transport Ltd. (EGT) will be responsible for the disposal of any hazardous waste generated during the project.

## 2) Emergency Response Plan:

### a) Page 5, Table 3.1: Camp Farewell Emergency Contact List - the last two rows indicate TBD - include Name and Telephone number of EGT Site Supervisor and On-Site EMT.

- There is no EGT Site Supervisor on the site, the barge master is the main EGT contact. See contact information in the table below:

Subcontractor Emergency Contacts	Name	Number
EGT Barge Master	Scott Martin	867-678-5062
On-Site EMT	Kent Pickford	587-990-0155

## 3) Barge Waste Management Plan:

### a) Page 2, section 5.1.2 states “Purge water removed from groundwater monitoring wells during sampling will temporarily be stored in resealable waste drums on-site until the end of the program, then it will be removed for off-site disposal at the Town of Inuvik disposal facility.” However, the Town of Inuvik waste acceptance letter dated June 16, 2021 for use of Sewage and Solid Waste Dumping Facilities for Camp Farewell Water License (N7L1-1834) states “... All the waste must be domestic use type only. None of it shall contain any drilling or industrial waste”. The purge water may be contaminated by the contaminant(s) of potential concern (CoPC) and it may cause harm to the receiving environment. It is recommended that purge water removed from groundwater monitoring wells be properly stored in approved transport containers and shipped to a licensed hazardous waste disposal facility.

- A sample of purge water removed from groundwater monitoring wells will be sent to the laboratory for analysis of petroleum hydrocarbons, metals, polycyclic aromatic hydrocarbons and routine potability parameters. Based on the results, the wastewater will be properly stored in approved transport containers and shipped to a licensed disposal facility:
  - Town of Inuvik if wastewater is classified as domestic waste (letter of acceptance provided in Waste Management Plan);
  - Silverberry Facility if wastewater is classified as non-hazardous industrial waste (copy of letter of acceptance in Attachment 3); or
  - Fort St. John Facility if wastewater is classified as hazardous waste (copy of letter of acceptance in Attachment 3).

### b) Figure 1: Difficult to visualize features depicted on the map - provide an enlarged map that will clearly visualize features depicted on the map.

- Enlarged map is provided in Attachment 4. The background aerial photograph has been removed as it was taken during remedial activities and showed windrows and sheds that are no longer at the site.

Bijaya Adhikari, Science and Regulatory Coordinator -  
Inuvialuit Water Board, 151 Mackenzie Road, P.O. Box 2531, Inuvik, NT X0E 0T0

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## CLOSURE

We trust the information provided herein meets your requirements. If you have any questions about the contents of this letter, please contact the undersigned, or Christopher Boyd (403-691-2855; Christopher.Boyd@shell.com), at your convenience.

Yours truly,

**Golder Associates Ltd.**



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Attachments: 1 - Spill Contingency Plan Maps  
2 - SDS  
3 - Letters of Acceptance  
4 - Barge Waste Management Plan Map

## STATEMENT OF LIMITATIONS

This letter was prepared for the exclusive use of Shell Canada Energy, and its managing partner Shell Canada Limited (Shell). The letter is based on information provided by Shell.

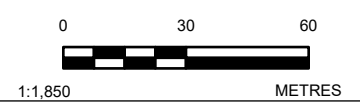
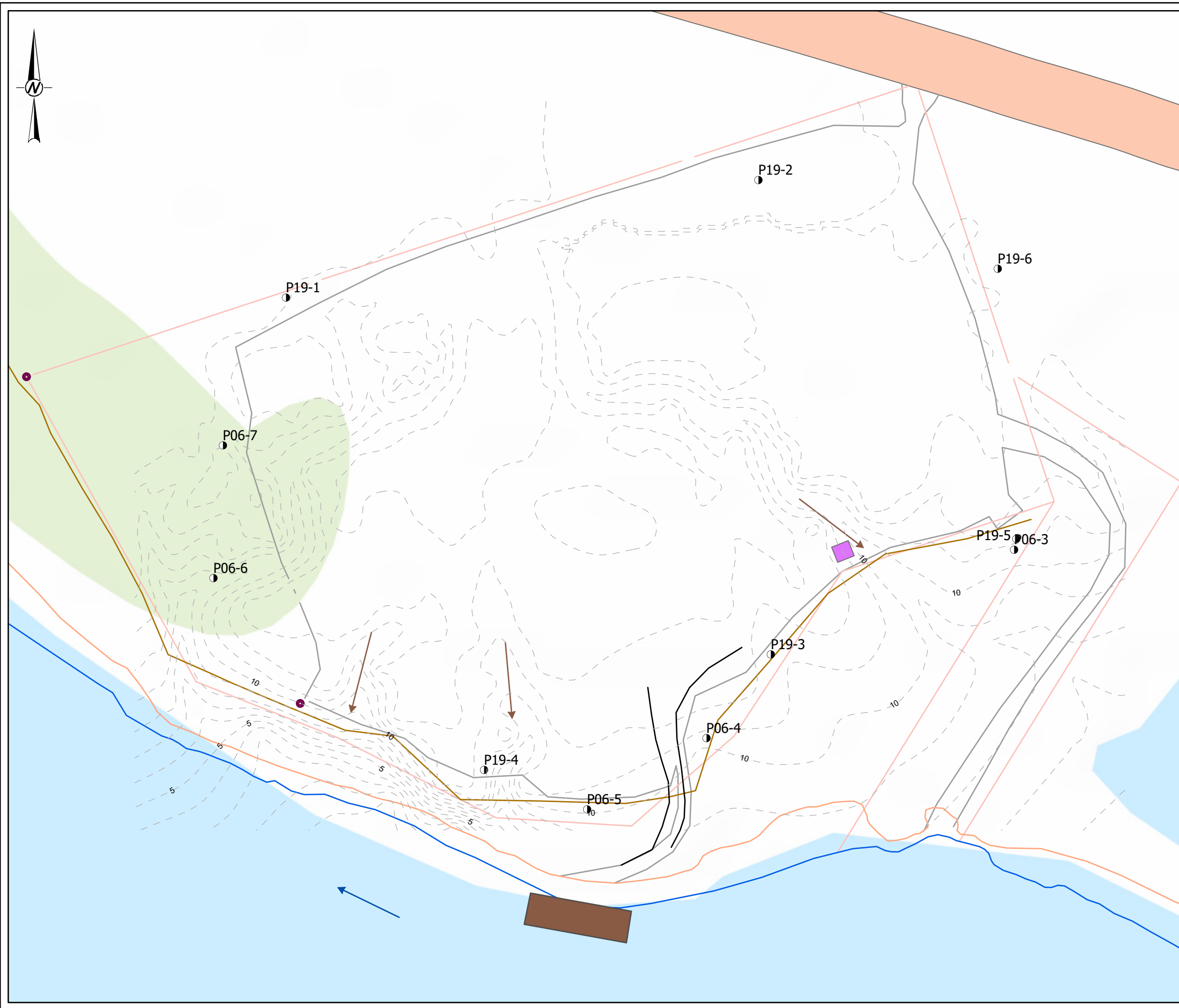
**ATTACHMENT 1**

# Spill Contingency Plan Maps



**LEGEND**

- Monitoring Well
- 35014-060727 Monument
- Site Boundary
- Edge of Gravel
- Edge of River
- Sand
- Top of Bank
- Existing Ground Contour (1m interval)
- Likely direction of surface flow on land
- Likely surface water flow direction
- Road
- Barge Camp
- Emergency Shelter
- Airstrip



**NOTE(S)**  
 1. ALL UNITS ARE IN METRES UNLESS OTHERWISE NOTED  
 2. COORDINATE SYSTEM IS UTM ZONE 8 NAD 83

**REFERENCE(S)**  
 1. NORTHWEST TERRITORIES, ESRI, HERE, GARMIN, USGS, EPA, USDA, AACF, NRCAN, NORTHWEST TERRITORIES, STATE OF ALASKA, ESRI CANADA, ESRI, HERE, GARMIN, FAO, NOAA, USGS, EPA, NPS, NRCAN, PARKS CANADA, ESRI, USGS  
 2. SPATIAL DATA FROM IEG CONSULTANTS. PROVIDED BY SHELL CANADA LIMITED. RECEIVED: 19 NOVEMBER 2020

CLIENT  
**SHELL CANADA LIMITED**

PROJECT  
**TECHNICAL SCOPE OF WORK**

TITLE  
**CAMP FAREWELL SPILL CONTINGENCY PLAN - SITE PLAN**

CONSULTANT	YYYY-MM-DD	2021-08-16
DESIGNED	S. VILLENEUVE	
PREPARED	J. REDSTONE	
REVIEWED	P. CLAIR	
APPROVED	L. HADERLEIN	

PROJECT NO.	PHASE	REV.	FIGURE
20368099	3000A	1	1

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Bijaya Adhikari, Science and Regulatory Coordinator -  
Inuvialuit Water Board, 151 Mackenzie Road, P.O. Box 2531, Inuvik, NT X0E 0T0

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**ATTACHMENT 2**

**SDS**



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

<b>Product identifier</b>	<b>INDUSTRIAL HYDRAULIC OIL</b>
<b>Version #</b>	01
<b>Issue date</b>	20-May-2015
<b>Revision date</b>	-
<b>Supersedes date</b>	-
<b>CAS #</b>	Mixture
<b>Product code</b>	184
<b>Product use</b>	Hydraulic oil.
<b>Synonym(s)</b>	SONIC INDUSTRIAL HYDRAULIC * ISO GRADES 22, 32, 46, 68, 100, 150, MV22, HVI 36
<b>Manufacturer information</b>	
<b>Manufacturer</b>	Consumers' Co-operative Refineries Limited
<b>Address</b>	P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada
<b>Telephone</b>	(306) 721-5353 -or- (306) 719-4353
<b>Supplier</b>	Federated Co-operatives Limited
<b>Address</b>	P.O. Box 1050, 401 - 22nd Street East Saskatoon SK S7K 3M9 Canada
<b>Telephone</b>	(306) 244-3447
<b>24 Hour Emergency Telephone</b>	(613) 996-6666 - Canutec

## 2. Hazards Identification

<b>Emergency overview</b>	Low hazard for usual industrial or commercial handling by trained personnel.
<b>Potential health effects</b>	
<b>Routes of exposure</b>	
<b>Eyes</b>	Direct contact with eyes may cause temporary irritation.
<b>Skin</b>	Prolonged skin contact may cause temporary irritation.
<b>Inhalation</b>	Prolonged or excessive inhalation may cause respiratory tract irritation.
<b>Ingestion</b>	Under normal conditions of intended use, this material does not pose a risk to health. However, accidental ingestion of the content may cause discomfort.
<b>Chronic effects</b>	Chronic effects are not expected when this product is used as intended.
<b>Potential environmental effects</b>	No special environmental precautions required.

## 3. Composition / Information on Ingredients

The components are not hazardous or are below required disclosure limits.

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Inhalation</b>	If fumes or combustion products are inhaled move victim to fresh air. Get medical attention if any discomfort occurs.
<b>Skin contact</b>	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if symptoms occur.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if any discomfort occurs.
<b>Notes to physician</b>	Treat symptomatically. Symptoms may be delayed.
<b>General advice</b>	First aid personnel must be aware of own risk during rescue.

## 5. Fire Fighting Measures

<b>Flammable properties</b>	Material will burn in a fire.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide or dry powder.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	By heating and fire, toxic vapors/gases may be formed.
<b>Protective equipment for firefighters</b>	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>Specific methods</b>	Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.
<b>Explosion data</b>	
<b>Sensitivity to static discharge</b>	Not sensitive.
<b>Sensitivity to mechanical impact</b>	Not sensitive.
<b>Hazardous combustion products</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors and contact with skin and eyes. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.
<b>Environmental precautions</b>	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Do not contaminate water.
<b>Methods for cleaning up</b>	Should not be released into the environment.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean contaminated area with oil-removing material.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.  Never return spills to original containers for re-use. For waste disposal, see section 13 of the MSDS.
<b>Other information</b>	Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

<b>Handling</b>	Avoid direct contact with eyes and prolonged skin exposure. Observe good industrial hygiene practices. Use appropriate Personal Protective Equipment.
<b>Storage</b>	Store in original tightly closed container. Keep in a cool, well-ventilated place. Store away from incompatible materials (See Section 10).

## 8. Exposure Controls / Personal Protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering controls</b>	ACGIH Threshold Limit Values for mineral oil mist: The 8-Hour Exposure Limit (TLV-TWA) is 5 mg/m <sup>3</sup> . The 15-minute STEL is 10 mg/m <sup>3</sup> . Provide adequate ventilation and minimize the risk of inhalation of vapors and oil mist. Provide access to washing facilities including soap, skin cleanser and fatty cream.

## Personal protective equipment

<b>Eye / face protection</b>	Wear approved safety goggles.
<b>Skin protection</b>	Wear protective gloves. Neoprene or nitrile gloves are recommended. Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Oily liquid.
<b>Physical state</b>	Solid.
<b>Form</b>	Liquid.
<b>Color</b>	Brown.
<b>Odor</b>	Mild.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Boiling point</b>	Not available.
<b>Melting point/Freezing point</b>	14 °F (-10 °C)
<b>Solubility (water)</b>	Partially soluble in cold and hot water.
<b>Specific gravity</b>	0.86
<b>Flash point</b>	> 296.6 °F (> 147.0 °C) Open Cup
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	775.4 °F (413 °C)
<b>Evaporation rate</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.

## 11. Toxicological Information

<b>Acute effects</b>	May cause temporary irritation of skin, eyes, or respiratory system. Ingestion may cause irritation and malaise. The harmful effects may increase when exposed to used grease.
<b>Sensitization</b>	Not a skin or respiratory sensitizer.
<b>Chronic effects</b>	Chronic effects are not expected when this product is used as intended.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/irritation</b>	Direct contact with eyes may cause temporary irritation.

<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive effects</b>	This product is not expected to cause reproductive or developmental effects.
<b>Teratogenicity</b>	This product is not expected to cause teratogenic effects.
<b>Symptoms and target organs</b>	Direct contact with eyes may cause temporary irritation. Prolonged skin contact may cause temporary irritation.
<b>Synergistic materials</b>	None known.

## 12. Ecological Information

<b>Ecotoxicological data</b>	No ecotoxicity data noted for the ingredient(s).
<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Oil spills are generally hazardous to the environment.
<b>Environmental effects</b>	Not classified as an environmental hazard.
<b>Aquatic toxicity</b>	Not classified.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulation / accumulation</b>	No data available on bioaccumulation.
<b>Mobility in environmental media</b>	The product is slightly soluble in water.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose in accordance with applicable federal, state, and local regulations. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Empty packaging should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

<b>TDG</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.

## 15. Regulatory Information

<b>Canadian regulations</b>	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
<b>WHMIS status</b>	Non-controlled

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other Information

<b>Further information</b>	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
<b>NFPA ratings</b>	Health: 1 Flammability: 1 Instability: 0
<b>Disclaimer</b>	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
<b>Prepared by</b>	Not available.

## SAFETY DATA SHEET

### Multi-Purpose Grease

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

**Product name** Multi-Purpose Grease

**Product number** MPG, EMPG50T, ZE

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Lubricant.

**Uses advised against** No specific uses advised against are identified.

##### 1.3. Details of the supplier of the safety data sheet

###### Supplier

ELECTROLUBE. A division of HK WENTWORTH LTD  
ASHBY PARK, COALFIELD WAY,  
ASHBY DE LA ZOUCH, LEICESTERSHIRE LE65 1JR  
UNITED KINGDOM  
+44 (0)1530 419600  
+44 (0)1530 416640  
info@hkw.co.uk

##### 1.4. Emergency telephone number

**Emergency telephone** +44 1865 407333

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (EC 1272/2008)

**Physical hazards** Not Classified

**Health hazards** Not Classified

**Environmental hazards** Not Classified

##### 2.2. Label elements

**Hazard statements** NC Not Classified

##### 2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

#### SECTION 3: Composition/information on ingredients

##### 3.2. Mixtures

**Composition comments** None of the ingredients are required to be listed.

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

## Multi-Purpose Grease

<b>General information</b>	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.
<b>Skin contact</b>	Remove affected person from source of contamination. Rinse immediately with plenty of water.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue.

### 4.2. Most important symptoms and effects, both acute and delayed

<b>General information</b>	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	Prolonged inhalation of high concentrations may damage respiratory system.
<b>Ingestion</b>	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
<b>Skin contact</b>	Prolonged contact may cause dryness of the skin.
<b>Eye contact</b>	May cause temporary eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Notes for the doctor</b>	Treat symptomatically.
<b>Specific treatments</b>	No special treatment required.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

<b>Specific hazards</b>	Containers can burst violently or explode when heated, due to excessive pressure build-up.
<b>Hazardous combustion products</b>	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak.
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**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage.

#### 6.2. Environmental precautions

**Environmental precautions** Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

#### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up** Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Reuse or recycle products wherever possible. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

#### 6.4. Reference to other sections

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see Section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists.

**Advice on general occupational hygiene** Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Store away from incompatible materials (see Section 10). Store in accordance with local regulations.

**Storage class** Unspecified storage.

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

### SECTION 8: Exposure Controls/personal protection

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### 8.1. Control parameters

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation. Good general ventilation should be adequate to control worker exposure to airborne contaminants.

#### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Chemical splash goggles.

#### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

#### Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

#### Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.

#### Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Provide adequate ventilation. Large Spillages: If ventilation is inadequate, suitable respiratory protection must be worn.

#### Environmental exposure controls

Not regarded as dangerous for the environment.

## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Appearance	Grease.
Colour	Light brown.
Odour	Oil-like.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	230°C/446°F COC (Cleveland open cup).
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

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<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Bulk density</b>	Not available.
<b>Solubility(ies)</b>	Not available.
<b>Partition coefficient</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition Temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not considered to be explosive.
<b>Oxidising properties</b>	Does not meet the criteria for classification as oxidising.

### 9.2. Other information

#### SECTION 10: Stability and reactivity

##### 10.1. Reactivity

**Reactivity** See the other subsections of this section for further details.

##### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

##### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** No potentially hazardous reactions known.

##### 10.4. Conditions to avoid

**Conditions to avoid** There are no known conditions that are likely to result in a hazardous situation.

##### 10.5. Incompatible materials

**Materials to avoid** No specific material or group of materials is likely to react with the product to produce a hazardous situation.

##### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

#### SECTION 11: Toxicological information

##### 11.1. Information on toxicological effects

**Toxicological effects** Not regarded as a health hazard under current legislation.

##### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Based on available data the classification criteria are not met.

##### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

##### Acute toxicity - inhalation

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<b>Notes (inhalation LC<sub>50</sub>)</b>	Based on available data the classification criteria are not met.
<b><u>Skin corrosion/irritation</u></b>	
<b>Animal data</b>	Based on available data the classification criteria are not met.
<b><u>Serious eye damage/irritation</u></b>	
<b>Serious eye damage/irritation</b>	Based on available data the classification criteria are not met.
<b><u>Respiratory sensitisation</u></b>	
<b>Respiratory sensitisation</b>	Based on available data the classification criteria are not met.
<b><u>Skin sensitisation</u></b>	
<b>Skin sensitisation</b>	Based on available data the classification criteria are not met.
<b><u>Germ cell mutagenicity</u></b>	
<b>Genotoxicity - in vitro</b>	Based on available data the classification criteria are not met.
<b><u>Carcinogenicity</u></b>	
<b>Carcinogenicity</b>	Based on available data the classification criteria are not met.
<b>IARC carcinogenicity</b>	None of the ingredients are listed or exempt.
<b><u>Reproductive toxicity</u></b>	
<b>Reproductive toxicity - fertility</b>	Based on available data the classification criteria are not met.
<b>Reproductive toxicity - development</b>	Based on available data the classification criteria are not met.
<b><u>Specific target organ toxicity - single exposure</u></b>	
<b>STOT - single exposure</b>	Not classified as a specific target organ toxicant after a single exposure.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
<b>STOT - repeated exposure</b>	Not classified as a specific target organ toxicant after repeated exposure.
<b><u>Aspiration hazard</u></b>	
<b>Aspiration hazard</b>	Based on available data the classification criteria are not met.
<b><u>General information</u></b>	
<b>General information</b>	No specific health hazards known. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b><u>Inhalation</u></b>	
<b>Inhalation</b>	Prolonged inhalation of high concentrations may damage respiratory system.
<b><u>Ingestion</u></b>	
<b>Ingestion</b>	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
<b><u>Skin contact</u></b>	
<b>Skin contact</b>	Prolonged contact may cause dryness of the skin.
<b><u>Eye contact</u></b>	
<b>Eye contact</b>	May cause temporary eye irritation.
<b><u>Route of entry</u></b>	
<b>Route of entry</b>	Ingestion Inhalation Skin and/or eye contact
<b><u>Target organs</u></b>	
<b>Target organs</b>	No specific target organs known.

### SECTION 12: Ecological Information

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

#### 12.1. Toxicity

**Toxicity** Based on available data the classification criteria are not met.

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### 12.2. Persistence and degradability

**Persistence and degradability** The degradability of the product is not known.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

**Partition coefficient** Not available.

### 12.4. Mobility in soil

**Mobility** No data available.

### 12.5. Results of PBT and vPvB assessment

### 12.6. Other adverse effects

**Other adverse effects** None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information** The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

**Disposal methods** Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of the local water authority.

## SECTION 14: Transport information

**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### 14.1. UN number

Not applicable.

### 14.2. UN proper shipping name

Not applicable.

### 14.3. Transport hazard class(es)

No transport warning sign required.

### **Transport labels**

No transport warning sign required.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**

No.

### 14.6. Special precautions for user

Not applicable.

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### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

<b>National regulations</b>	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
<b>EU legislation</b>	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

#### Inventories

##### **EU - EINECS/ELINCS**

None of the ingredients are listed or exempt.

### SECTION 16: Other information

<b>Abbreviations and acronyms used in the safety data sheet</b>	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC <sub>50</sub> : Lethal Concentration to 50 % of a test population. LD <sub>50</sub> : Lethal Dose to 50% of a test population (Median Lethal Dose). EC <sub>50</sub> : 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative.
<b>Training advice</b>	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
<b>Issued by</b>	Bethan Massey
<b>Revision date</b>	18/01/2017
<b>Revision</b>	0
<b>SDS number</b>	845

## Multi-Purpose Grease

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

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### SECTION 1. IDENTIFICATION

Product name : PROPANE

Synonyms : Propane HD-5, Propane commercial, Liquefied Petroleum Gas (LPG), C<sub>3</sub>H<sub>8</sub>, CGSB Propane Grade 1, CGSB Propane Grade 2, odorized propane, stench propane, automotive propane, ER62.

Product code : 103176, 103174, 103172, 103153, 103151, 103150, 103149, 103159, 103156, 103147, 100589, 100139

Manufacturer or supplier's details  
Petro-Canada  
P.O. Box 2844, 150 - 6th Avenue South-West  
Calgary Alberta T2P 3E3  
Canada

Emergency telephone number : CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;  
Suncor Energy: +1 403-296-3000

#### Recommended use of the chemical and restrictions on use

Recommended use : Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.

Prepared by : Product Safety: +1 905-804-4752

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Appearance	Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	colourless
Odour	Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.

#### GHS Classification

Flammable gases : Category 1

Gases under pressure : Liquefied gas

Simple Asphyxiant : Category 1

#### GHS label elements



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Hazard pictograms



Signal word

: Danger

Hazard statements

: Extremely flammable gas.  
Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

Precautionary statements

: **Prevention:**  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
**Response:**  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
In case of leakage, eliminate all ignition sources.  
**Storage:**  
Protect from sunlight. Store in a well-ventilated place.

### Potential Health Effects

Primary Routes of Entry

: Eye contact  
Inhalation  
Skin contact

Aggravated Medical Condition

: None known.

### Other hazards

None known.

### IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

### ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Hazardous components

Chemical name	CAS-No.	Concentration
propane	74-98-6	72 - 100 %
propene	115-07-1	0 - 23.8 %
butane	106-97-8	0 - 4.7 %
ethane	74-84-0	0 - 4.6 %

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isobutane	75-28-5	0 - 3.6 %
isopentane	78-78-4	0 - 1 %
pentane	109-66-0	0 - 0.9 %
but-1-ene	106-98-9	0 - 0.5 %
methane	74-82-8	0 - 0.2 %

All above concentrations are percent by volume.

### SECTION 4. FIRST AID MEASURES

- If inhaled : Move to fresh air.  
Artificial respiration and/or oxygen may be necessary.  
Seek medical advice.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash skin thoroughly with soap and water or use recognized skin cleanser.  
Wash contaminated clothing before reuse.  
Seek medical advice.
- In case of eye contact : Remove contact lenses.  
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Obtain medical attention.
- If swallowed : Not a significant route of exposure.
- Most important symptoms and effects, both acute and delayed : Inhalation may cause central nervous system effects.  
Inhalation of vapours may cause drowsiness, headache, dizziness and disorientation.  
May cause irritation of respiratory tract.  
Contact with rapidly expanding gas may cause burns or frost-bite.  
Overexposure may lead to cardiac sensitization.  
High concentrations can remove oxygen and cause dizziness or suffocation.
- Notes to physician : Treat symptomatically.  
Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

### SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.
- Specific hazards during fire-fighting : If the product release cannot be shut off safely, allow the product to burn itself out.  
Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO<sub>2</sub>), smoke and irritating vapours as products of incomplete combustion.
- Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and full protective wear.

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Wear a positive-pressure supplied-air respirator with full face-piece.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : For personal protection see section 8.  
Ensure adequate ventilation.  
Evacuate personnel to safe areas.  
In case of inadequate ventilation wear respiratory protection.  
Remove all sources of ignition.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.  
Ensure adequate ventilation.  
Use explosion-proof ventilation equipment.  
Non-sparking tools should be used.  
Contact the proper local authorities.

### SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid contact with skin, eyes and clothing.  
Avoid breathing gas.  
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.  
Use only with adequate ventilation.  
Keep away from heat and sources of ignition.  
Keep container closed when not in use.  
Do not use sparking tools.  
Do not enter areas where used or stored until adequately ventilated.
- Conditions for safe storage : Store in original container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in a dry, cool and well-ventilated place.  
Keep in properly labelled containers.  
To maintain product quality, do not store in heat or direct sunlight.  
Keep away from sources of ignition - No smoking.  
Ensure the storage containers are grounded/bonded.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of)	Control parameters / Permissible	Basis
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		exposure)	concentration	
propane	74-98-6	TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m <sup>3</sup>	CA QC OEL
propene	115-07-1	TWA	500 ppm 860 mg/m <sup>3</sup>	CA AB OEL
		TWA	500 ppm	CA BC OEL
		TWA	500 ppm	ACGIH
butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWAEV	800 ppm 1,900 mg/m <sup>3</sup>	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
ethane	74-84-0	TWA	1,000 ppm	CA AB OEL
isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
isopentane	78-78-4	TWA	600 ppm 1,770 mg/m <sup>3</sup>	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWA	1,000 ppm	ACGIH
ethanethiol	75-08-1	TWA	0.5 ppm 1.3 mg/m <sup>3</sup>	CA AB OEL
		TWA	0.5 ppm	CA BC OEL
		TWAEV	0.5 ppm 1.3 mg/m <sup>3</sup>	CA QC OEL
		TWA	0.5 ppm	ACGIH

**Engineering measures** : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.  
Use only in well-ventilated areas.  
Use explosion-proof ventilation equipment.

### Personal protective equipment

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : Always wear NIOSH-approved self-contained breathing apparatus when handling this material.

Hand protection  
Material : Wear insulated gloves to prevent frostbite. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Wear face-shield and protective suit for abnormal processing

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Skin and body protection	: problems. : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	: Wash contaminated clothing before re-use. Wear suitable protective equipment.
Hygiene measures	: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Gas at room temperature; liquid when stored under pressure., compressed liquefied gas
Colour	: colourless
Odour	: Propane is an odourless gas. Odourized propane will contain up to 30 g Ethyl Mercaptan per 1000 L of propane.
Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Boiling point/boiling range	: -42 °C (-44 °F)
Decomposition temperature	No data available
Flash point	: -104 °C (-155 °F) Method: closed cup
Auto-Ignition Temperature	: 450 °C (842 °F)
Evaporation rate	: No data available
Flammability	: Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.
Upper explosion limit	: 9.5 %(V)
Lower explosion limit	: 2.1 %(V)
Vapour pressure	: 10,763 mmHg (38 °C / 100 °F)
Relative vapour density	: 1.56
Relative density	: No data available
Solubility(ies)	

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Water solubility : No data available  
Partition coefficient: n-octanol/water : No data available  
Viscosity  
Viscosity, kinematic : No data available

### SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Hazardous polymerisation does not occur.  
Conditions to avoid : Heat, flames and sparks.  
Incompatible materials : Reactive with oxidising agents and halogenated compounds.  
Hazardous decomposition products : May release CO<sub>x</sub>, smoke and irritating vapours when heated to decomposition.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Eye contact  
Inhalation  
Skin contact

#### Acute toxicity

##### Product:

Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.  
Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.  
Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

##### Components:

###### **butane:**

Acute inhalation toxicity : LC50 (Rat): 658 mg/l  
Exposure time: 4 h  
Test atmosphere: gas

###### **isobutane:**

Acute inhalation toxicity : LC50 (Rat): 658,000 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: gas

###### **isopentane:**

Acute inhalation toxicity : LC50 (Rat): 280 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

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### pentane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): 364 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

### Skin corrosion/irritation

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### Serious eye damage/eye irritation

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### Respiratory or skin sensitisation

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### Germ cell mutagenicity

#### Product:

Germ cell mutagenicity-  
Assessment Based on available data, the classification criteria are not met.

### Carcinogenicity

#### Product:

Carcinogenicity - As-  
sessment Based on available data, the classification criteria are not met.

### Reproductive toxicity

#### Product:

Reproductive toxicity -  
Assessment Based on available data, the classification criteria are not met.

### STOT - single exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

### STOT - repeated exposure

#### Product:

Remarks: Based on available data, the classification criteria are not met.

# SAFETY DATA SHEET

## PROPANE

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No data available

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Product:

- Toxicity to fish : Remarks: No data available
- Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available
- Toxicity to algae : Remarks: No data available
- Toxicity to bacteria : Remarks: No data available

#### Persistence and degradability

##### Product:

- Biodegradability : Remarks: No data available

#### Bioaccumulative potential

No data available

#### Mobility in soil

No data available

#### Other adverse effects

No data available

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Offer surplus and non-recyclable solutions to a licensed disposal company.  
Waste must be classified and labelled prior to recycling or disposal.  
Send to a licensed waste management company.  
Dispose of as hazardous waste in compliance with local and national regulations.  
Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
- Contaminated packaging : Contact local or business unit authorities for guidance on disposal of product.



# SAFETY DATA SHEET

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### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

UN/ID No. : UN 1978  
Proper shipping name : Propane  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : Class 2 - Gases: Flammable (Division 2.1)  
Packing instruction (cargo aircraft) : 200

##### IMDG-Code

UN number : UN 1978  
Proper shipping name : PROPANE  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : 2.1  
EmS Code : F-D, S-U  
Marine pollutant : no

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

#### National Regulations

##### TDG

UN number : UN 1978  
Proper shipping name : PROPANE  
Class : 2.1  
Packing group : Not assigned by regulation  
Labels : 2.1  
ERG Code : 115  
Marine pollutant : no

### SECTION 15. REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all of the information required by the HPR.

#### The components of this product are reported in the following inventories:

**DSL** On the inventory, or in compliance with the inventory

### SECTION 16. OTHER INFORMATION

For Copy of SDS : Internet: [www.petro-canada.ca/msds](http://www.petro-canada.ca/msds)  
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228  
For Product Safety Information: 1 905-804-4752

# SAFETY DATA SHEET

## PROPANE

000003000646



Version 4.0

Revision Date 2020/12/11

Print Date 2020/12/11

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Prepared by : Product Safety: +1 905-804-4752

Revision Date : 2020/12/11

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**ATTACHMENT 3**

**Letters of Acceptance**

August 17, 2021

Attention: To Whom It May Concern

**Re: Silverberry FST & Fort St John FST Waste Acceptance**

---

SECURE Energy Services Inc. (SECURE Energy) is providing this letter to confirm that the following facilities can accept contaminated groundwater:

- 1) **Fort St John FST** – Hazardous Waste – Fort St John has Hazardous Waste Registration #109382 (Attachment 1) to take contaminated ground water that is deemed hazardous.
  
- 2) **Silverberry FST** – Non-Hazardous Waste – Silverberry has a Permit to Discharge Non-Hazardous Waste, Permit 17347 (Attachment 2) to take contaminated groundwater that is deemed non-hazardous.

SECURE Energy is committed to meeting regulatory requirements and ensuring that environmental standards are maintained. My team and I are happy to provide clarification and answer any questions you may have. Please feel free to contact me at your earliest convenience at 403-234-4875.

Sincerely,

**SECURE ENERGY**

Peter Nelson | Environment and Regulatory Specialist

[pnelson@secure-energy.com](mailto:pnelson@secure-energy.com)



October 29, 2019

Tracking Number: 372213  
Authorization Number: 109382

Tervita Corporation  
1600-140 10th Ave SE  
Calgary AB T2G 0R1

Dear Tervita Corporation,

**Re: Application to Amend HWR Registration #109382 to Update the Closure Plan and Change the Name from Newalta Corporation to Tervita Corporation**

In response to your application package dated September 05, 2018 and pursuant to Section 14(4)(b)(i) of the *Environmental Management Act*, the Director hereby consents to a change of name in ownership and address change for Registration 109382. The change of name is from Newalta Corporation to Tervita Corporation, effective September 5, 2018. The change of address is to 1800-510 West Georgia St., Vancouver, BC V6M 0M3 (legal) and 1600-140 10th Ave SE, Calgary, AB T2G 0R1 (mailing and billing), also effective September 5, 2018.

Pursuant to the provisions of Section 14 of the Hazardous Waste Regulation, and subject to the terms and conditions prescribed in this letter, the following plan is hereby approved:

Hazardous Waste Regulation  
Section 14 - Closure Plan  
Tervita Corporation  
Fort St. John Hazardous Waste Storage Facility  
Located at 15-05-083-17 W6M, Baldonnel, BC  
RS-109382  
Dated April 4, 2019

Finally, this letter confirms that the authorization PS-15757 has now been cancelled, and replaced by registration RS-109382 under the Hazardous Waste Regulation. The effective date of the registration is October 29, 2007. The amendment to Section 4.9 "Auditing" in Newalta's Section 4 Operational Plan approved on November 9, 2009 is also recognized as applying to RS-109382. All terms and conditions of the original registration letter, as amended, continue to apply. Please see the attached letter and amendment.

Please note that although a revised Authorization Document has not been produced at this time a copy of this letter is being placed on the Authorization file, as an addendum to the Authorization, to formally reflect the change.

All other conditions of Authorization 109382 remain in effect. Please attach this letter to all copies of 109382.

This Authorization does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the permittee. This Authorization is issued pursuant to the provisions of the *Environmental Management Act* to ensure compliance with Section 120(3) of that statute, which makes it an offence to discharge waste, from a prescribed industry or activity, without proper authorization. It is also the responsibility of the permittee to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this permit will be carried out by staff from the regional office. Plans, data and reports pertinent to the permit are to be submitted to the Regional Director, Environmental Protection, at the address shown on this letter.

Yours truly,



Barbara Oke, B.Sc., P.Ag.  
for Director, Environmental Management Act  
Authorizations North  
Environmental Protection Division



March 5, 2019

Tracking Number: 330079  
Authorization Number: 17347

Tervita Corporation  
1600-140 10th Ave SE  
Calgary, Alberta T2G 0R1

Dear Tervita Corporation,

Authorization Amendment under the *Environmental Management Act* to the Permit for the Silverberry Facility

In response to your letter dated July 10, 2014, and pursuant to Section 14(4) of the *Environmental Management Act*, the Director hereby consents to a minor amendment.

Tervita's application for a minor amendment dated July 10, 2014, has been adjudicated. The following decisions have been made:

In response to the application to amend the well located at 10-30-87-20 W6M authorized underground injection of effluent from the Halfway formation to the Baldonnel formation, the formation name references have been removed from the permit. Please refer to these changes to Section 1.1 and 1.1.3 of the permit below:

**Old clauses:**

1.1 This section applies to **UNDERGROUND INJECTION OF EFFLUENT** from an oil and gas waste treatment, recovery and disposal facility into the *Halfway Formation* and the *Cadomin Formation*. The site reference number for discharge to the *Halfway Formation* is E252549. The site reference number for discharge to the *Cadomin Formation* is E291750.

1.1.3 In addition to wastes authorized for discharge pursuant to the Oil and Gas Waste Regulation, the following wastes are authorized for discharge to the Halfway Formation at the 16-07-88-20 W6M and the 10-30-87-20 W6M disposal wells and to the Cadomin Formation at the 10-30-87-20 W6M disposal well.

**New clauses:**

1.1 This section applies to underground injection of effluent from an oil and gas waste treatment, recovery and disposal facility, via three disposal wells, listed below.

The EMS site reference numbers for the three wells are:

10-30-87-20 W6M, E304790  
A10-30-87-20 W6M, E291750  
16-07-88-20 W6M, E252549

1.1.3 In addition to wastes authorized for discharge pursuant to the Oil and Gas Waste Regulation, the following wastes are authorized for discharge at disposal wells 16-07-88-20 W6M, 10-30-87-20 W6M, and A10-30-87-20 W6M.

Please note that although a revised Authorization Document has not been produced at this time a copy of this letter is being placed on the Authorization file, as an addendum to the Authorization, to formally reflect the change.

All other conditions of Authorization 17347 remain in effect. Please attach this letter to all copies of 17347.

This Authorization does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the permittee. This Authorization is issued pursuant to the provisions of the Environmental Management Act to ensure compliance with Section 120(3) of that statute, which makes it an offence to discharge waste, from a prescribed industry or activity, without proper authorization. It is also the responsibility of the permittee to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the Environmental Management Act. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this permit will be carried out by staff from the regional office. Plans, data and reports pertinent to the permit are to be submitted to the Regional Director, Environmental Protection, at the address shown on this letter.

Yours truly,



Julie Orban P. Geo.  
for Director, Environmental Management Act





December 13, 2012

Tracking Number: 270587  
Authorization Number: 17347

**REGISTERED MAIL**

Tervita Corporation  
c/o Patterson Adams  
402, 707 Fort St  
PO Box 1231  
Victoria BC V8W 2T6

Dear Permittee:

Enclosed is Amended Permit 17347 issued under the provisions of the *Environmental Management Act*. Your attention is respectfully directed to the terms and conditions outlined in the permit. An annual fee will be determined according to the Permit Fees Regulation.

This permit does not authorize entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorized by the owner of such lands or works. The responsibility for obtaining such authority rests with the permittee. This permit is issued pursuant to the provisions of the *Environmental Management Act* to ensure compliance with Section 120(3) of that statute, which makes it an offence to discharge waste, from a prescribed industry or activity, without proper authorization. It is also the responsibility of the permittee to ensure that all activities conducted under this authorization are carried out with regard to the rights of third parties, and comply with other applicable legislation that may be in force.

This decision may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

Administration of this permit will be carried out by staff from the Peace Region. Plans, data and reports pertinent to the permit are to be submitted to the Regional Manager, Environmental Protection, at Ministry of Environment, Regional Operations, Peace Region, Rm 400, 10003 – 110 Avenue, Fort St John BC V1J 6M7.

Yours truly,

{AuthorizationNumber}

page 2

Date: December 13, 2012

Ed A. Hoffman  
for Director, *Environmental Management Act*  
Omineca and Peace Regions

Enclosure

cc: Environment Canada



**MINISTRY OF  
ENVIRONMENT**

**PERMIT**

**17347**

*Under the Provisions of the Environmental Management Act*

**Tervita Corporation**

**500, 140 10TH AVENUE S.E.  
CALGARY AB T2G 0R1**

is authorized to discharge effluent to underground formations, surface runoff to land and contaminants to the air from an **oil and gas waste treatment, recovery and disposal (TRD) facility**, located **Northwest of Fort St John, British Columbia**, subject to the terms and conditions listed below. Contravention of any of these conditions is a violation of the *Environmental Management Act* and may lead to prosecution.

**1. AUTHORIZED DISCHARGES**

1.1 This section applies to **UNDERGROUND INJECTION OF EFFLUENT** from an oil and gas waste treatment, recovery and disposal facility into the *Halfway Formation* and the *Cadomin Formation*. The site reference number for discharge to the *Halfway Formation* is E252549. The site reference number for discharge to the *Cadomin Formation* is E291750.

1.1.1 The injection rates and pressures must comply at all times with all requirements of the *Oil and Gas Activities Act* and associated regulations.

1.1.2 The authorized discharge period is continuous.

1.1.3 In addition to wastes authorized for discharge pursuant to the *Oil and Gas Waste Regulation*, the following wastes are authorized for discharge to the *Halfway Formation* at the 16-07-88-20 W6M and the 10-30-87-20 W6M disposal wells and to the *Cadomin Formation* at the A10-30-87-20 W6M disposal well.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)

Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

- 1.1.3.1 Non-hazardous effluent that meets the disposal criteria as set out in section 3.5.2 of the British Columbia Ministry of Environment *'Procedure for Authorizing Deepwell Disposal of Wastes'*.
- 1.1.3.2 Surface runoff water from this facility and oil and gas facilities which **DOES NOT** meet the surface discharge requirements specified in section 1.2.2 below.
- 1.1.3.3 Non-hazardous landfill leachate which was generated at Tervita Corporation secure and/or industrial landfills that meets the disposal criteria as set out in section 3.5.2.2 of the British Columbia Ministry of Environment *'Procedure for Authorizing Deepwell Disposal of Wastes'*.
- 1.1.4 Underground injection of "hazardous waste" as defined by the British Columbia *Hazardous Waste Regulation*, is strictly prohibited, except as authorized pursuant to Section 7(1) of the *Oil and Gas Waste Regulation*.
- 1.1.5 Despite section 1.1.3 and 1.1.4, spilled material, as authorized by an officer under the *Environmental Management Act*, may be accepted for treatment and/or injection. Hazardous wastes resulting from accidental spills may only be accepted at the facility under authority of Section 52(1) of the *Hazardous Waste Regulation*.
- 1.1.6 The authorized works are storage structures for liquids and solids, waste and oil treatment, oil recovery, tank and truck washing, filtration and injection facilities and related appurtenances approximately located as shown on attached Location Map and Site Plans.
- 1.1.7 The location of the facilities from which the discharge originates is LSD 16 Section 07, Township 88, Range 20 W6M. The locations of the points of discharge are 16-07-88-20 W6M, 10-30-87-20 W6M and A10-30-87-20 W6M, Northwest of Fort St John, BC.
- 1.2 This section applies to the **SURFACE DISCHARGE OF ACCUMULATED PRECIPITATION** from an oil and gas waste treatment, recovery and disposal facility. The site reference number for this discharge is E289670.
- 1.2.1 The maximum authorized rate of surface discharge is as required, subject to the conditions outlined below.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

1.2.2 The characteristics of the discharge must not exceed:

Parameter	Criteria
Chlorides (as Cl)	Maximum 500 mg/L
Hydrocarbons (the sum of: Volatile Hydrocarbons in Water by GC/FID and Extractable Petroleum Hydrocarbons (EPH) in Water by GC/FID)	<15 mg/L
Electrical Conductivity	Maximum 2 dS/m
pH Range	6.5 – 8.5 pH units
Other Contaminants	None in concentrations that may have an adverse effect on the receiving environment

1.2.3 The authorized works are runoff containment, discharge facilities and related appurtenances operated pursuant to Section 2.

1.3 This section applies to the **DISCHARGE OF AIR CONTAMINANTS FROM A FLARE STACK** serving a tank vapour recovery system at an oil and gas waste treatment, recovery and disposal facility. The site reference number for this discharge is E252551.

1.3.1 The maximum authorized rate of emission is as required, subject to the conditions outlined below.

1.3.2 The characteristics of the discharge are combustion products of hydrocarbons, including sulphur oxides, nitrogen oxides, carbon monoxide, particulate matter, and volatile organic carbons.

1.3.3 The authorized works are a 12 metre flare stack serving the tank vapour recovery system and related appurtenances.

1.3.4 The location of the facilities from which the discharge originates and the point of discharge is LSD 16 Section 07, Township 88, Range 20 W6M, Northwest of Fort St John, BC.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

1.4 This section applies to the **DISCHARGE OF AIR CONTAMINANTS FROM A HEAT MEDIUM BOILER**. The site reference number for this discharge is E291829.

1.4.1 The maximum authorized rate of discharge from the boiler is 0.8171 cubic meters per second (m<sup>3</sup>/s).

1.4.2 The authorized discharge period is continuous.

1.4.3 The characteristics of the discharge are combustion products of propane including sulphur oxides, nitrogen oxides, carbon monoxide, particulate matter, and volatile organic carbons and must be equivalent to or better than:

<u>Contents</u>	<u>Maximum</u>
PM2.5 Particulate Matter	2.561 mg/m <sup>3</sup>
PM10 Particulate Matter	2.561 mg/m <sup>3</sup>
Sulphur Dioxide	0.000 mg/m <sup>3</sup>
Nitrogen Oxides	126.608 mg/m <sup>3</sup>
Volatile Organic Compounds	6.830 mg/m <sup>3</sup>
Carbon Monoxide	106.640 mg/m <sup>3</sup>

1.4.4 The authorized works are a Sellers S-200 W15SR 6.7 MMBtu/hr (1.964 MW) Boiler, 3 metre high, 0.2667meter x 0.7239meter rectangular stack and related appurtenances approximately located as shown on Site Plan A.

1.4.5 The authorized works must be complete and in operation while discharging.

1.4.6 The location of the facilities from which the discharge originates and the point of discharge is LSD 16 Section 07, Township 88, Range 20 W6M, Northwest of Fort St John, BC.

1.5 This section applies to the **DISCHARGE OF AIR CONTAMINANTS FROM A TREATER**. The site reference number for this discharge is E291830.

1.5.1 The maximum authorized rate of discharge from the boiler is 0.4163cubic meters per second (m<sup>3</sup>/s).

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

- 1.5.2 The authorized discharge period is continuous.
- 1.5.3 The characteristics of the discharge are combustion products of propane including sulphur oxides, nitrogen oxides, carbon monoxide, particulate matter, and volatile organic carbons and must be equivalent to or better than:

<u>Contents</u>	<u>Maximum</u>
PM2.5 Particulate Matter	2.895 mg/m <sup>3</sup>
PM10 Particulate Matter	2.895 mg/m <sup>3</sup>
Sulphur Dioxide	0.000 mg/m <sup>3</sup>
Nitrogen Oxides	126.608 mg/m <sup>3</sup>
Volatile Organic Compounds	7.160 mg/m <sup>3</sup>
Carbon Monoxide	106.337 mg/m <sup>3</sup>

- 1.5.4 The authorized works are a Natco 3.2 MMBtu/hr (0.938 MW) Treater, Two 6 metre high, 0.4572meter diameter stacks and related appurtenances approximately located as shown on Site Plan A.
- 1.5.5 The authorized works must be complete and in operation while discharging.
- 1.5.6 The location of the facilities from which the discharge originates and the point of discharge is LSD 16 Section 07, Township 88, Range 20 W6M, Northwest of Fort St John, BC.

## 2. **REQUIREMENTS FOR DISCHARGE OF SURFACE RUNOFF TO THE LAND**

### 2.1 **Consent of Land Owner**

The written consent of the owner of the land to which the discharge is to occur must be obtained.

### 2.2 **Control of Discharge**

- 2.2.1 The effluent must not be allowed to enter a surface watercourse or surface water body and must not be discharged in a location where it could reasonably be expected to enter a surface watercourse or surface water body.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

- 2.2.2 The effluent must be discharged at such a rate that there is no accumulation of effluent on the surface of the ground.
- 2.2.3 The discharge must not occur on an unstable slope, cause erosion or result in measureable downward and outward movement of soil, rocks, snow, ice, mud, or debris.
- 2.2.4 The discharge must not result in the creation of a contaminated site as defined by the *Contaminated Sites Regulation*.

### 3. **GENERAL REQUIREMENTS**

#### 3.1 **Tank Integrity Verification, Secondary Containment and Leak Detection**

- 3.1.1 The Permittee must maintain at all times a system of integrity verification of the storage tanks, and systems of secondary containment and leak detection as specified in the operational plan.
- 3.1.2 In the event that the leak detection system for any tank indicates a possibility of a leak, the permittee must notify the Director in writing within 60 hours including integrity verification and any corrective actions taken. The corrective actions must be documented. Notifications by e-mail or by fax are acceptable.

#### 3.2 **Process Modifications**

The Permittee must notify the Director, in writing, prior to implementing changes to the authorized works, or to any process that may affect the quality and/or quantity of the discharge.

#### 3.3 **Bypasses**

The discharge of contaminants that has bypassed the authorized works is prohibited unless the approval of the Director is obtained and confirmed in writing prior to discharge.

#### 3.4 **A Non-Compliance Reporting**

The Permittee must immediately notify the Director, or designate by facsimile (250-787-3490), or e-mail, of any non-compliance with the requirements of this

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}



Permit.

The Permittee must identify the non-compliance, the cause of the non-compliance and any remedial action to deal with the non-compliance.

Written confirmation of all non-compliance events, including available test results, is required by facsimile within 24 hours of the original notification unless otherwise directed by the Director, Environmental Protection.

### 3.5 **Operational Plan**

The Permittee must maintain an up to date operational plan acceptable to the Director for the facility. The operational plan must reflect any changes to the facility operation.

The facility must be operated in accordance with the approved operational plan, and any requirements which the Director may attach to the operational plan as a condition of approval.

### 3.6 **Spill Reporting and Emergency Response Plan**

3.6.1 All spills to the environment as defined in the *Spill Reporting Regulation* and the *Pipeline Act* must be reported immediately in accordance with the *Spill Reporting Regulation* and the *Pipeline Act*. Notification must be via the Provincial Emergency Program at 1-800-663-3456.

3.6.2 The Permittee must update the Emergency Response Plan as needed to reflect any changes in the facility operation.

### 3.7 **Future upgrading of works**

The director may require future upgrading of the pollution control works to protect the environment.

### 3.8 **Surface Water Management**

The surface water diversionary works must ensure that accumulated precipitation from the facility does not exit the facility and off-site surface water does not enter the facility.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

### 3.9 Transfer of Authorization

A transfer of a Permit or Approval is without effect unless a Director has consented in writing to the transfer.

## 4. DISPOSAL OF RESIDUAL SOLIDS

- 4.1 Prior to the removal from the facility, residual solids must be sampled and analyzed in accordance with a sampling and monitoring program approved by the Director.
- 4.2 Residual solids generated by the treatment and injection facilities may be used as cover or disposed at a landfill site authorized by permit under the *Environmental Management Act*, provided that the residual solids meet the following criteria:
  - 4.2.1 The residual solids are not hazardous waste as defined by the *Hazardous Waste Regulation*;
  - 4.2.2 The residual solids do not contain free liquid; and
  - 4.2.3 Permission of the landfill owner is obtained and the discharge is authorised by the landfill permit under the *Environmental Management Act*.
- 4.3 Any solids that are hazardous waste must be managed in accordance with the *Hazardous Waste Regulation*.
- 4.4 Record the volume of solids removed for each shipment from the site.
- 4.5 Retain, for a minimum period of 5 years, all records specified in subsections 4.1 and 4.4, and make those records available for inspection by an officer.
- 4.6 Any other methods of disposal to the environment require written authorization by the Director.

## 5. POSTING OF FINANCIAL SECURITY

The Permittee must post security with the Minister of Finance and Corporate Relations in an amount and form acceptable to the Director.

The security may be applied at the discretion of the Director, under the provisions of the *Environmental Management Act* to correct any inadequacy of the works as it

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

relates to their construction, operation and maintenance.

## 6. **MONITORING AND RECORDING REQUIREMENTS**

The Director may alter the monitoring program as needed. The need for changes to the program will be based upon results submitted as well as any other information obtained in connection with the discharges. Make all required records available for inspection by an officer.

### 6.1 **Received Materials Monitoring**

6.1.1 Implement and maintain a screening program acceptable to the Director that will ensure only materials and wastes identified in section 1.1 are received at the facility.

6.1.2 Record the volume (in cubic meters) of waste received at the facility.

### 6.2 **Underground Injection Discharge Monitoring**

6.2.1 Provide and maintain a suitable continuous flow measuring device for the disposal wells received at the facility.

6.2.2 Record the total volume (in cubic meters) of waste, its origin and the type of waste injected into the well per day.

### 6.3 **Runoff Discharge Monitoring**

6.3.1 Sample and analyze any discharge of runoff to the land surface for the parameters listed in subsection 1.2.2, before each discharge, and record that analysis.

6.3.2 Record the volume (in cubic meters) of the discharge and the date of the discharge.

### 6.4 **Ground Water Monitoring Program**

The Permittee must maintain a ground water monitoring program acceptable to the Director.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

## 7. REPORTING

### 7.1 Annual Report

The Permittee must submit an Annual Report to the Fort St John Ministry of Environment, Environmental Protection Division office (Rm #400, 10003-110 Ave, Fort St John, BC, V1J 6M7) each report must cover a calendar year and be submitted by 31 March of the following calendar year.

The report must contain, but may not necessarily be limited to the following information

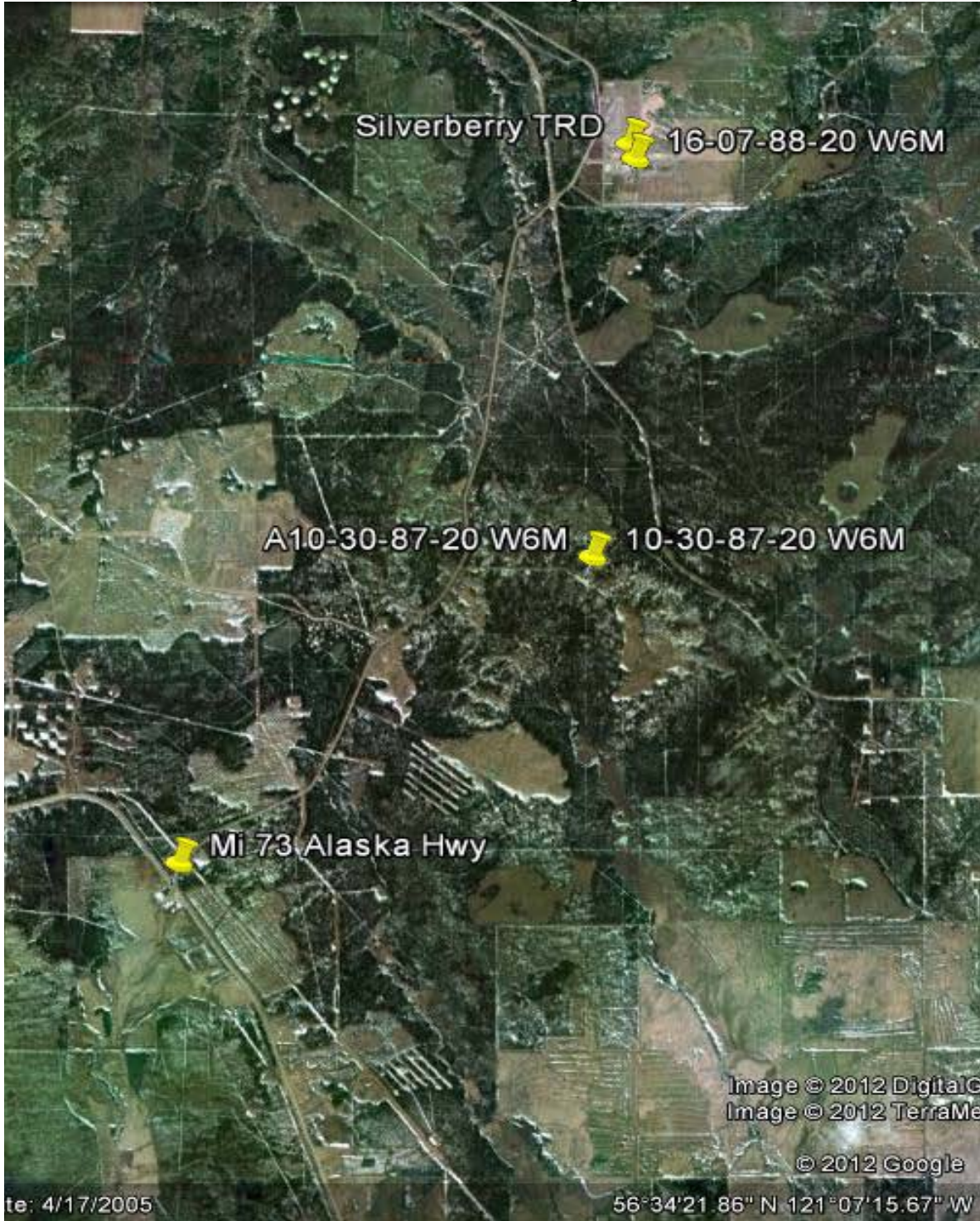
- 7.1.1 The results of all monitoring programs specified in Sections 6.1, 6.2, 6.3 and 6.4 of this permit. Results must be clearly tabulated in a format acceptable to the Director, and interpreted for compliance against applicable standards and for assessment of trends;
- 7.1.2 A summary of activity relating to the tank integrity verification, secondary containment and leak detection programs as described by section 3.1 of this permit and the results of any monitoring related to those programs;
- 7.1.3 A summary of incidents with the potential to cause adverse environmental impact, specifically including, but not limited to any bypass of works (section 3.3), non-compliance incidents (section 3.4), or spills (section 3.6);
- 7.1.4 Any revisions to plans and specifications, or confirmation that no updates have been made to either plans or specifications.
- 7.1.5 All records specified in section 4.5.

Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)



Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

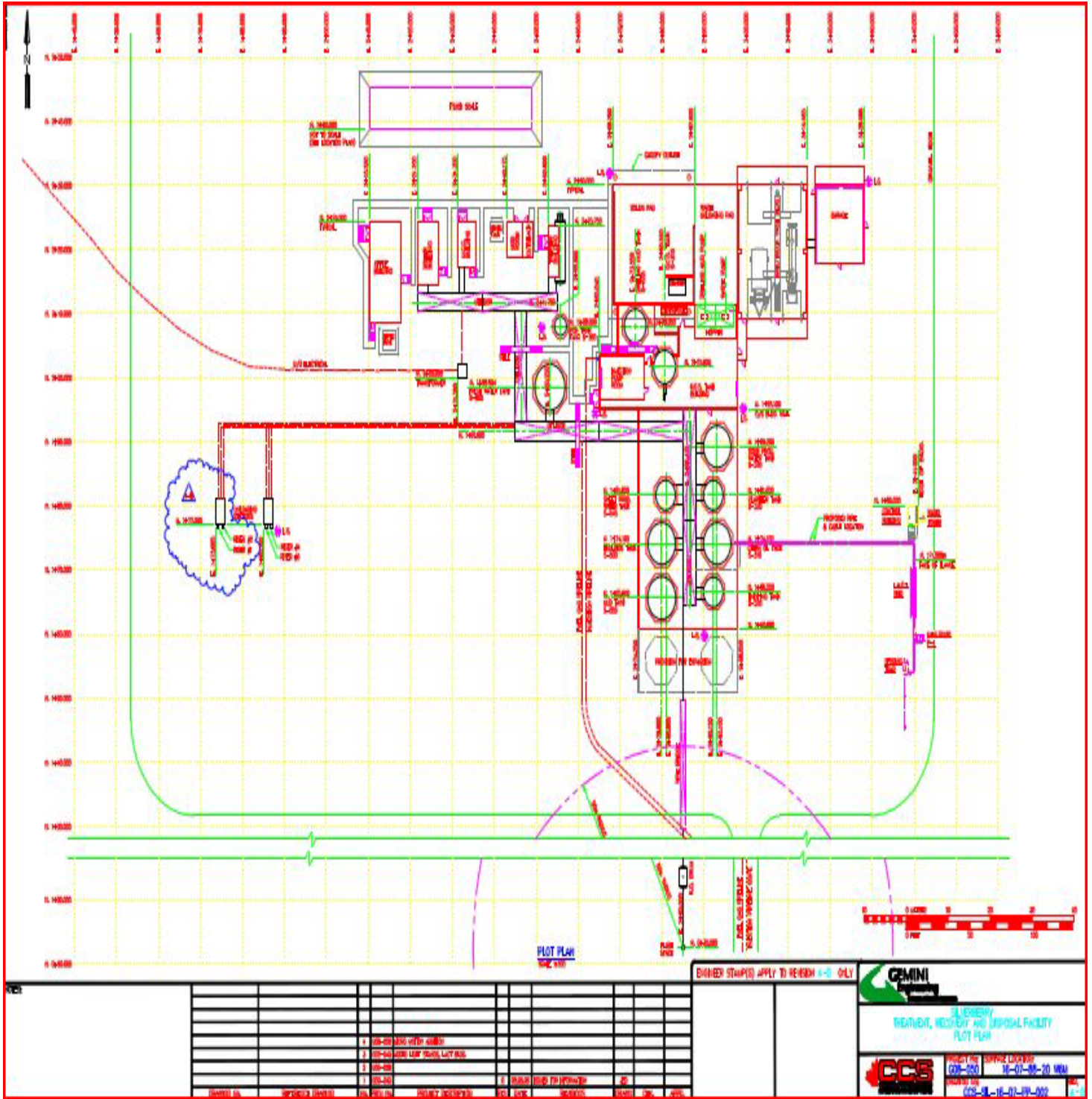
### Location Map



Date issued: June 11, 2003  
Date amended: December 13, 2012  
(most recent)

*Ed A. Hoffman*  
Ed A. Hoffman  
for Director, *Environmental Management Act*  
{Region}

### Site Plan A



Date issued: June 11, 2003  
 Date amended: December 13, 2012  
 (most recent)

*Ed A. Hoffman*  
 Ed A. Hoffman  
 for Director, *Environmental Management Act*  
 {Region}



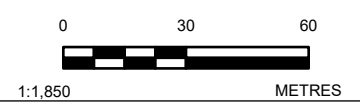
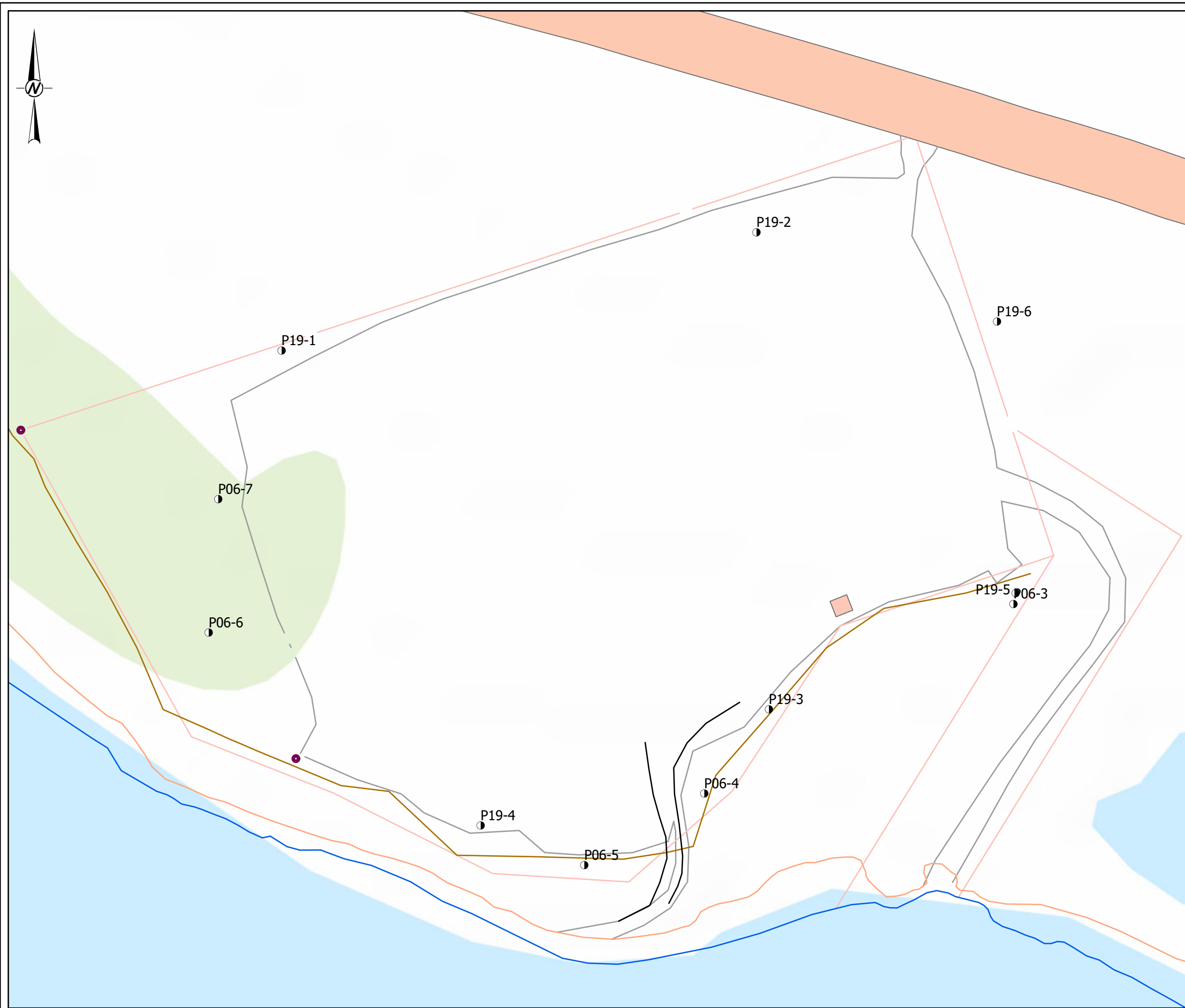
**ATTACHMENT 4**

**Barge Waste Management Plan  
Map**





- LEGEND**
- Monitoring Well
  - 35014-060727 Monument
  - Site Boundary
  - Edge of Gravel
  - Edge of River
  - Sand
  - Top of Bank
  - Emergency Shelter
  - Airstrip



**NOTE(S)**  
 1. ALL UNITS ARE IN METRES UNLESS OTHERWISE NOTED  
 2. COORDINATE SYSTEM IS UTM ZONE 8 NAD 83

**REFERENCE(S)**  
 1. NORTHWEST TERRITORIES, ESRI, HERE, GARMIN, USGS, EPA, USDA, AAFC, NRCAN, NORTHWEST TERRITORIES, STATE OF ALASKA, ESRI CANADA, ESRI, HERE, GARMIN, FAO, NOAA, USGS, EPA, NPS, NRCAN, PARKS CANADA, ESRI, USGS  
 2. SPATIAL DATA FROM IEG CONSULTANTS. PROVIDED BY SHELL CANADA LIMITED. RECEIVED: 19 NOVEMBER 2020

**CLIENT**  
 SHELL CANADA LIMITED

**PROJECT**  
 TECHNICAL SCOPE OF WORK

**TITLE**  
 CAMP FAREWELL WASTE MANAGEMENT PLAN -  
 SITE PLAN

CONSULTANT	YYYY-MM-DD	2021-08-12
DESIGNED	S. VILLENEUVE	
PREPARED	J. REDSTONE	
REVIEWED	P. CLAIR	
APPROVED	L. HADERLEIN	

PROJECT NO.	PHASE	REV.	FIGURE
20368099	3000A	1	1

PATH: S:\Client\Shell\Camp\_Farewell\11\_GIS\ARC/INFO\CampFarewell.aprx PRINTED ON: AT: 10:51:42 AM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B