



17 June 2019

Client File No.: 4320.00
License No.: 69HWRR
Operating Permit # 23647

Government of Manitoba
Manitoba Sustainable Development, Environmental Approvals
1007 Century St.
Winnipeg MB R3H 0W4

Attention: **Ms. Cory Graham, P.Eng. Environmental Approvals**

Reference: **Response to TAC Comments
GFL Environmental Inc. License No. 69 HWRR Renewal Application
Operating Permit No. 23647
1090 Kenaston Boulevard
Winnipeg, Manitoba**

INTRODUCTION

GFL Environmental Inc. (GFL) submits this letter and supporting documentation in response to the Manitoba Sustainable Development (MSD) Technical Advisory Committee (TAC) comments received pertaining to GFL's application for a Licence Renewal for the hazardous waste collection, processing, and transfer facility located at 1090 Kenaston Boulevard in Winnipeg, Manitoba. (MB) (Facility). The legal description of the Facility is: Lot 3, Plan 9153, WLTO in OTM Lots 60 to 63, Parish of Saint Boniface.

The Facility location is presented on Figure 1 and the Facility Layout is presented on Figure 2.

ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT

1. Weima WLK Shredder – Processing of empty jugs and bulk oil pails

a. Manufacturer specification sheet

- i. GFL has revised plans regarding the shredder. Currently GFL transports recovered plastics in transport trailers equipped with secondary containment for off-site processing at an approved facility. There are no current plans for the installation and operation of an on-site shredder; plastics will continue to be transported off-site for the foreseeable future.

b. Updated Site plan showing the proposed location of the shredder

- i. Not applicable – shredder is not proposed for this location.

c. Noise and dust mitigation plan

- i. Not applicable – shredder is not proposed for this location.

ENVIRONMENTAL APPROVALS BRANCH

1. Waste Sludge Processing – Exterior Shale Bin

a. Clarify if vacuum trucks are GFL owned, non-GFL owned or both.

- i. It is proposed that both GFL owned and third party vacuum trucks will utilize the waste sludge processing, exterior shale bin area. Third party trucks will be offered an opportunity to utilize the shale bin for a service fee.



b. What is the purpose of the vacuum trucks? What types of materials are handled?

- i. Corporately, GFL supplies vacuum trucks to industrial, municipal and residential clients for a variety of projects ranging from sewage hauling to heavy industrial and other hazardous environments. Currently, GFL is collecting sediment and wastewater from interceptor pits including; sump pits, catch basins, floor trenches and grease traps.
- ii. The wastes proposed for the waste sludge processing area include interceptor pit wastes (wash water, sediments and grit) that are not regulated by Transportation of Dangerous Good (TDG) but, cannot go directly to a municipal landfill or the City of Winnipeg Wastewater Treatment Plant. Additionally, prior to dispatching our trucks to another project, the interior of the vessels are washed to remove any residue ensuring our trucks arrive on-site clean and free of any residual products.
- iii. At this time, GFL is not proposing to utilize the waste sludge processing area for the treatment or solidification of TDG regulated products or products classified as hazardous waste as defined in the Manitoba *Hazardous Waste Regulation*.

c. What does the term non-regulated solids mean?

- i. Non-regulated solids refers to solids and sludge materials that are not regulated by TDG and are not classified as hazardous waste as defined in the Manitoba *Hazardous Waste Regulation*.

d. How many vacuum trucks are expected to be rinsed on a daily basis?

- i. Depending on the success of GFL's vacuum truck division, it is estimated that between one and four trucks would be rinsed on a daily basis. Rinsing would be completed typically at the end of their work day. Currently our vacuum trucks are servicing clients Monday to Friday only.

e. What is the estimated quantity of dewatered solids generated per month? Parameters tested? Where will the solids be disposed?

- i. Based on initial estimates, between 40 cubic meters (m³) (60 tonnes) and 100 m³ (150 tonnes) of dewatered solids will be generated per month.
- ii. Solidified materials will be analyzed for the following parameters; slump test, total and leachable benzene, toluene, ethylbenzene, and total xylenes (BTEX), Canadian Council of Ministers of the Environment (CCME) Petroleum Hydrocarbon (PHC) Fractions 1 to 4, total and leachable metals, flashpoint and paint filter test. If additional parameters are believed to be present in the waste material based on the source location, the analysis would include those additional parameters.
- iii. Once the results of the laboratory analysis are received and pending acceptance, the material will be loaded into end dump trailers and transported to a permitted facility. If the waste material is unsuitable for acceptance to a municipal landfill as clean daily/intermediate cover, alternate disposal options will be investigated including industrial landfills. Due to the nature of the materials being collected by GFL, it is believed that the solids will be acceptable for daily/intermediate cover material.

2. Building A – Solvent Aboveground Storage Tank (AST)

a. Describe the process for transfer? Containment and air emission control system?

- i. New/ virgin solvent is delivered to the Facility from a third party supplier and unloaded into GFL's 4,510 litre (L) ULC compliant double walled AST. GFL trained personnel utilize a Fill-Rite petroleum transfer pump located on a spill containment pad to transfer the solvent into 60 L kegs for delivery to GFL customers across Manitoba.
- ii. The double walled AST is further protected with the installation of concrete Jersey barriers to prevent damage due to vehicles and equipment.

- iii. The AST is not connected to an emission control system. The AST is vented to atmosphere according to the manufacturer's specifications. Based on the physical properties of the solvent (heavy vapours, low vapour pressure, slow evaporation rate, and high boiling point) VOC emissions are not a significant concern. A copy of the solvent safety data sheet (SDS) is provided in Attachment 1.

3. Waste Receiving Area

a. What types of waste materials are received from the general public?

- i. Waste materials received from the general public include used lubricating oil, used filters and empty plastic oil containers. Upon arriving at the Facility, the public is required to sign-in at the main office and provide a detailed description of the type and quantity of waste being delivered. A waste technician accompanies the public to the dedicated waste drop off location and confirms that the waste descriptions and quantities match. If unauthorized waste is encountered, the material is not accepted and the public is referred to an alternate location for the disposal.

4. Drum Storage Area

a. Please give an estimation for "temporary storage"?

- i. Waste materials are received, the contents confirmed according to the shipping label and waste documentation and staged for processing. Typically, waste materials are processed the same day that they arrive at the Facility. If a large quantity of drums are received from a customer location, GFL utilizes additional resources to process the waste in a timely fashion. Maximum temporary storage is 30 working days.

b. Bulking and repackaging, describe the process, material classes, spill containment and emission control, etc.

- i. Drummed waste typically comprises Class 3, Class 8, waste lubricating oil and industrial wastewater. Upon arrival at the facility, the material contents are confirmed based on the shipping label and shipping documents. Pumps and hoses compatible to the material being transferred are used to recover the waste from the supplied container into a larger means of containment including the process tanks of the main tank farm or the wastewater treatment plant. All transfers are completed within the main facility processing building within the secondary containment. All hose connections are equipped with spill containment trays to collect any spilled products during connecting and disconnecting hoses.

5. Plastics Processing

a. Provide the process to separate residue oil from the oil jugs and pails.

- i. Liquids are removed from the oil jugs and bulked into drums for eventual transfer into the ASTs depending on the nature of the liquid. Emptied containers are reloaded into a plastics trailer for off-site processing.

6. Aerosol Can Processing

a. Identify the location of the aerosol can puncturing device.

- i. The aerosol puncturing device is located within Building A as noted on Figure 2.

7. Burner Fuel Processing

a. If the process generates any sludge, please provide the details of the characterization and final disposal location.

- i. The burner fuel process generates less than (<) 1 m³ of sludge per month on average when operating. Sludge from the process tank bottoms is recovered using a vacuum truck and power wash unit and transported to GFL's Saskatoon Facility for further processing and solidification. The solidified sludge is processed with other non-

hazardous waste and transported off-site for final disposal at a licenced industrial (Class 2) landfill in Saskatchewan.

Feedstock oil for the burner fuel process is pre-characterized upon acceptance and no further characterization of the sludge is required for acceptance at the GFL's Saskatoon Facility. Representative composite samples of the bulk processed non-hazardous waste are characterized based on the requirements of the licensed industrial landfill prior to transport from the Saskatoon Facility for final disposal.

8. GFL Wastewater Treatment Plan

a. What is non-regulated wastewater? Why does it require treatment?

- i. Non-regulated wastewater refers to industrial wastewater that is not regulated by TDG and is classified as non-hazardous based on its composition according to the Manitoba *Hazardous Waste Regulation*. The wastewater requires treatment as it is not acceptable for direct disposal at the City of Winnipeg Wastewater Treatment Plant.

b. What are the characteristics of wastewater received from off-site?

- i. Wastewaters received at the Facility may contain: elevated concentrations of total suspended or dissolved solids; metals impacts; elevated routine parameters; or hydrocarbon impacts. Customers are required to complete a Waste Application prior to the delivery of any wastewater. If the wastewater is determined to be acceptable for treatment based on the information provided in the Waste Application, the appropriate treatment technologies are utilized. Wastewater that is determined to not be appropriate for treatment is rejected and referred to an alternate licensed disposal facility. Received wastewaters that are not as described in the Waste Application and are determined to not be treatable are surcharged and transported off-site for disposal at an approved facility.

c. What types of processes/ operations generate incoming wastewater?

- i. Wastewater is generated from industrial washing and cleaning activities, car washes, process water, remedial excavations, etc.

9. Summary of Estimated Waste Volumes by Waste Class

a. Provide some examples of Class 9 materials received.

- i. Examples of Class 9 materials received at the Facility include:
 - lithium batteries
 - PCB light ballasts
 - dry ice materials
 - ammonium nitrate fertilizers
 - environmentally hazardous solids / liquids.

b. Please use Provincial Waste Codes MHW1 for used oil and MHW2 for used oil filters.

- i. Table 2 has been updated with the Provincial Waste Codes as provided in Attachment 2.

c. Please indicate the type of waste materials that are received (bulk or repackaged) and sent to off-site facilities for treatment or disposal without involving any internal treatment process.

- i. The following classes of waste materials are received at the Facility and transported directly off-site for final treatment, recycling, and/or disposal:
 - Class 2.3 – Toxic Gases
 - Class 4.2 – Spontaneously Combustible (except some paint filter containers which are flooded with water at the Facility prior to transport off-site)

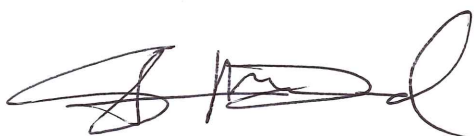
- Class 4.3 – Dangerous When Wet
- Class 5 – Oxidizing Substances, Organic Peroxides
- Class 6.1 – Toxic Substances
- Class 8 – Corrosives (Liquids and Solids)
- Class 9 – Miscellaneous Products

MEDICAL OFFICER OF HEALTH

1. This site is in relatively close proximity to a residential area, provide more information/detail on the following:
 - a. Mitigation/response measures for a potential fire and/or explosion
 - i. GFL has developed an Emergency Response Plan (ERP) for the Facility that outlines emergency measures to be enacted in the event of a significant event including medical events, fires, explosions, releases, transportation emergencies, or extreme weather events. The nearest residential home is approximately 500 m east of the Facility. A copy of the current ERP is provided in Attachment 3.
 - b. Why are some tanks not connected to emissions mitigation equipment?
 - i. Process aboveground storage tanks (ASTs) within Building A are connected to a Circul-Aire High Density Scrubber to control emissions due to the use of heat and chemical additives in the Burner Fuel Process. Outdoor ASTs contain used oil, ethylene glycol, and waste fuel (primarily comprised of diesel fuel and waste Stoddard solvent) which have low vapour pressures resulting in low volatile organic compound (VOC) emissions. As such, the outdoor ASTs at the Facility are vented to atmosphere as per manufacturer specifications. Copies of SDSs for waste oil, diesel fuel, and ethylene glycol are provided in Attachment 4; the SDS for GFL's parts washer (Stoddard) solvent is provided in Attachment 1.

CLOSURE

Please contact me if you have any questions regarding the enclosed or require any further information.



Shawn McDonald, EP
EHS Compliance Manager

ENCLOSURES

Figures:

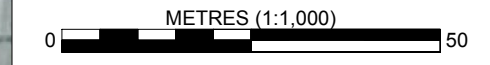
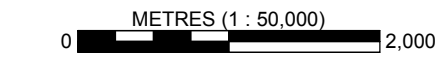
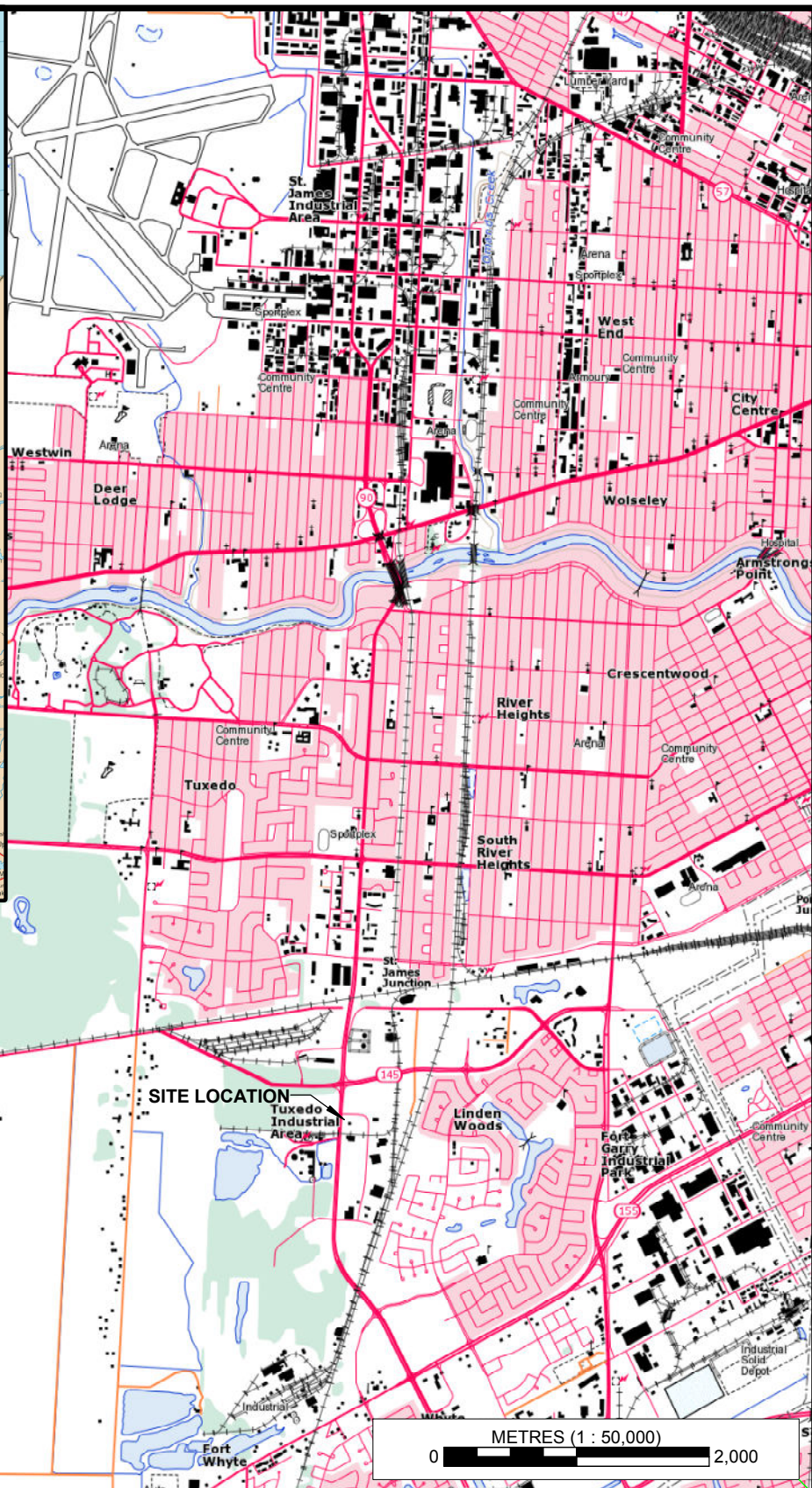
- Figure 1 – Facility Location
- Figure 2 – Facility and Building Layout

Attachments:

- Attachment 1 – GFL Parts Washer Solvent SDS
- Attachment 2 – Updated Table 2 – Summary of Wastes
- Attachment 3 – GFL Emergency Response Plan – 1090 Kenaston Blvd.
- Attachment 4 – Select Product Safety Data Sheets

FIGURES





NOTES:

1. THIS DRAWING IS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THIS IS NOT A LEGAL SURVEY. ALL MEASUREMENTS ARE IN METRES.
2. SITE COORDINATES: 49.838888° N, -97.208127° W.
3. TOPOGRAPHIC MAP COURTESY OF NATURAL RESOURCES CANADA GEOGRATIS, 2019.
4. AERIAL IMAGERY COURTESY GOOGLE EARTH, 2019.
5. INSET MAP COURTESY OF CANADA-MAPS.ORG, 2019.

LEGEND:

PROPERTY LINE (APPROXIMATE) - - - - -

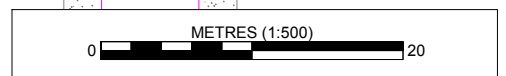
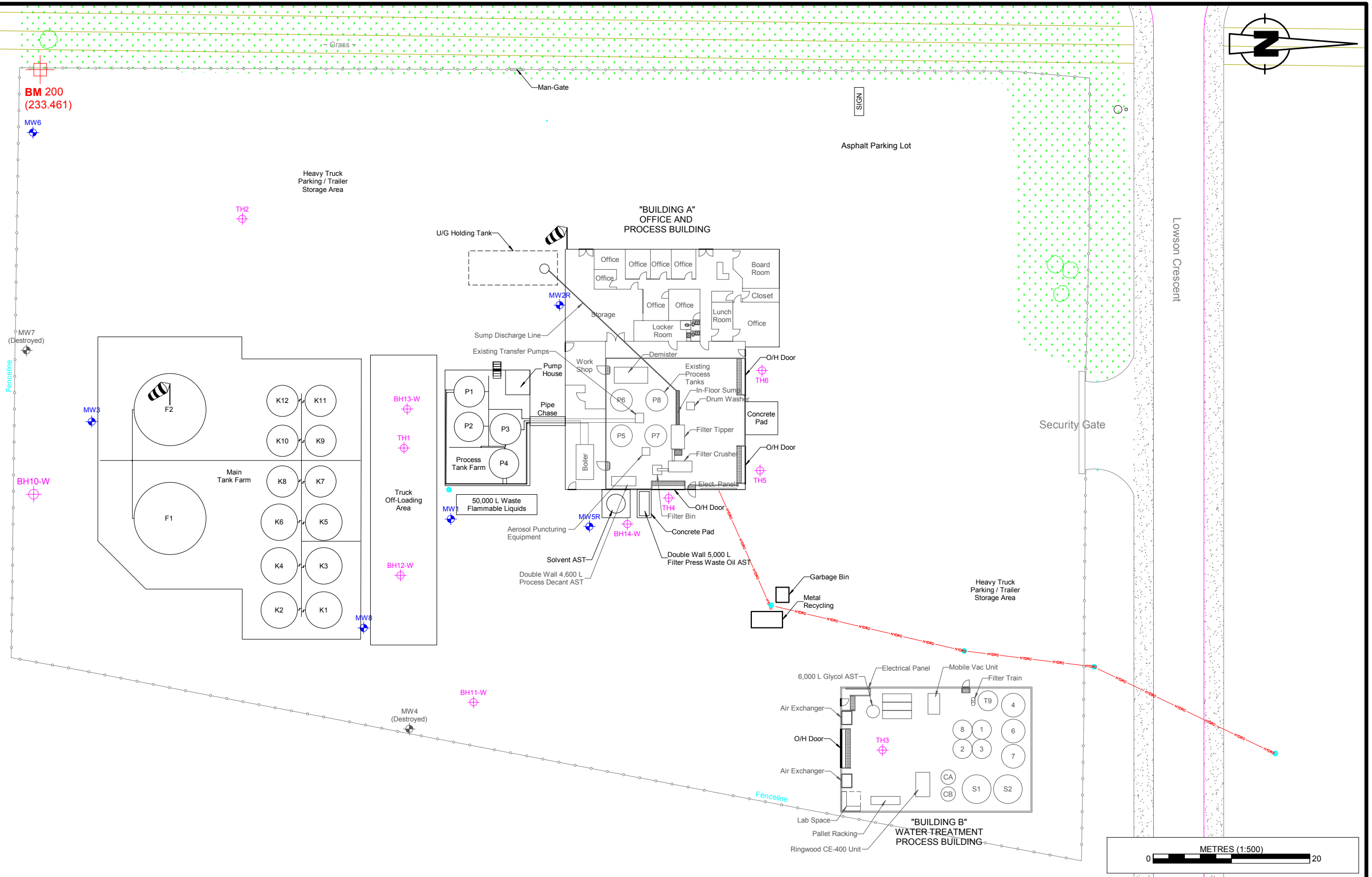
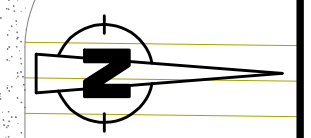


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**FIGURE 1
FACILITY LOCATION**

16 APRIL 2019
GFL KENASTON FACILITY
1090 KENASTON BLVD., WINNIPEG, MB
DRAWN BY: SAM
CHECKED BY: GJW



NOTES:
 1. THIS DRAWING IS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THIS IS NOT A LEGAL SURVEY. ALL MEASUREMENTS ARE IN METRES.
 2. SITE COORDINATES: 49.838888° N, -97.208127° W.

LEGEND:
 FENCE
 MONITORING WELL
 BOREHOLE
 O/H POWER
 HYDRO

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FIGURE 2
FACILITY AND BUILDING LAYOUTS
 16 APRIL 2019
 GFL WINNIPEG
 1090 KENASTON BLVD, WINNIPEG, MB
 DRAWN BY: SAM
 CHECKED BY: GJW



ATTACHMENT 1:
GFL Parts Washer Solvent MSDS





Material Safety Data Sheet

GFL Environmental Parts Washer Solvent

Small Means of Containment

SECTION 1: CHEMICAL PRODUCT INFORMATION

Product Name:	GFL Environmental Parts Washer Solvent (MINERAL SPIRITS 3139)		
Synonym:	Stoddard Solvent, Regular Mineral Spirits		
Chemical Name:	Not Applicable		
Chemical Family:	Aliphatic Hydrocarbon (Solvent)		
Chemical Formula:	Not Applicable		
Material Use:	Solvent, diluents, chemical feedstock, fuel.		
Product ID:	LA4427		
Emergency Contact:	GFL Environmental: CANUTEC (Call Collect): Poison Control Centre:	1-877-244-9500 (Toll-Free) 1-613-996-6666 Consult local telephone directory for emergency number.	
Supplier / Shipper:	GFL Environmental 100 Cory Road Saskatoon, Saskatchewan, S7K 3B7 Tel: (306) 244-9500 Fax: (306) 244-9501	Distributor:	Univar Canada Ltd. 9800 Van Horne Way Richmond, B.C., V6X 1W5
Revision Date:	November 27, 2016	Prepared By:	T. Gosselin GFL Environmental 100 Cory Road Saskatoon, Saskatchewan, S7K 3B7
Supersedes:	November 26, 2013		

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS#	% By Weight	LD50s and LC50s Route & Species
Stoddard Solvent	8052-41-3	100	Oral LD50: 5g/kg (rat) Skin LD50: > 3g/kg (rabbit) Inhalation LC50: > 5500 mg/m ³ /4H (rat)

The Stoddard Solvent contains 1, 2,4 – Trimethylbenzene, CAS# 95-63-6 (1-10%) as part of its composition

SECTION 3: HAZARDS IDENTIFICATION

Potential Health Effects	Inhalation of vapours can cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects. Skin and eye contact can cause irritation. Aspiration into lungs may cause mild to severe pulmonary injury and possibly death. For more information, refer to Section 11.
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GFL Environmental Parts Washer Solvent

SECTION 4: FIRST AID MEASURES

- Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Do not use an eye ointment. Seek medical attention.
- Skin Contact:** After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
- Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
- Ingestion:** DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek medical attention.

SECTION 5: FIRE AND EXPLOSION DATA

- Flammability:** Class II – combustible liquid (NFPA)
- Auto-Ignition Temp.:** 260°C (500°F) NFPA
- Flash Point:** Closed Cup: >38°C (100.4°F) (Tag.)
- Flammable Limits:** Lower: 0.8% Upper: 5.6% NFPA
- Extinguishing Media:** Use dry chemicals, CO₂, alcohol foam or water spray
- Special Exposure Hazards:** Combustible. Emits toxic fumes under fire conditions. Avoid spraying water directly into storage containers due to risk of a boil over. This liquid is volatile and gives off invisible vapours. Either the liquid or vapour may settle in low areas or travel some distance along the ground to ignition sources where they may ignite or explode.
- Hazardous Decomposition / Combustion Materials (under fire conditions):** Not available

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA Ratings: Health 1, Flammability 2, Instability 0

HMIS Ratings: Health 1, Flammability 2, Reactivity 0

GFL Environmental Parts Washer Solvent

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment

Environmental Precautionary Measures: Prevent entry into sewers or streams. Dike if required.

Procedure for Clean Up: LAND SPILL: Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible without hazard. Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as saw dust. Recover by pumping (explosion proof motor or hand pump), or by using a suitable absorbent.

WATER SPILL: Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.

SECTION 7: HANDLING AND STORAGE

Handling: Keep away from heat. Keep away from sources of ignition. Empty containers posing a fire risk. DO NOT reuse empty containers without commercial cleaning or reconditioning. Ground/bond line and equipment during pumping or transfer to avoid accumulation of static charge (note – material will accumulate static charges which may cause an electrical spark (ignition source). DO NOT ingest. Do not breathe gas/fumes/vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately. Avoid contact with skin and eyes. DO NOT SIPHON BY MOUTH. Practice good personal hygiene. Wash hands after handling and before eating. Launder work clothes frequently. Discard saturated leather goods.

Storage: Store in tightly closed containers in cool, dry, isolated, well-ventilated area, and away from incompatibles. Ground all equipment containing material.

Suitable Containers: Drums / Barges / Tank Cars / Tank Trucks

Suitable Materials / Coatings: Carbon Steel / Polyethylene / Polypropylene / Teflon / Stainless Steel / Polyester

Unsuitable Materials / Coatings: Polystyrene / Natural Rubber / Butyl Rubber / Ethylene-propylene-diene monomer (EPDM)

GFL Environmental Parts Washer Solvent

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Use explosion proof equipment. In the laboratory environment, this product should be handled in a hood. Provide mechanical ventilation in confined spaces.

Personal Protection: *The selection of personal protective equipment varies, depending upon conditions of use.*

Eyes: Eye protection (ie: safety glasses, safety goggles and/or face shield) should be determined based on conditions of use. If product is used in an application where splashing may occur, the use of safety goggles and/or face shield should be considered.

Body: Wear appropriate clothing to prevent skin contact. As a minimum long sleeves and trousers should be worn.

Respiratory: Where concentrations in air may exceed occupational exposure limits and where engineering, work practices or other means of exposure reduction are not adequate, NIOSH approved respirators may be necessary to prevent exposure by inhalation.

Hands: Wear appropriate chemically protective gloves. When handling hot product ensure gloves are heat resistant and insulated.

Feet: Wear appropriate footwear to prevent product from coming in contact with feet and skin.

Ingredients	Exposure Limit – ACGIH	Exposure Limit – OSHA	Immediately Dangerous to Life or Health - IDLH
Stoddard Solvent	100 ppm TLV-TWA	525 mg/m ³ TWA 100 ppm TWA	20000 mg/m ³

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid	Viscosity:	1.14 cSt @25°C
Colour:	Colourless	VOCs:	Not Available
Odour:	Mild Petroleum	Evaporation Rate:	0.14
pH:	Not Available	Freezing Point:	-76°C / -105°F
Boiling Point:	159 to 195°C (318 to 383°F)	Solubility:	Negligible in water.
Specific Gravity:	0.788		
Vapour Density:	4.9 (Air = 1)		
Vapour Pressure:	0.3 kPa @ 20°C (2.6 mm Hg @ 68°F)		
%Volatile by Volume:	100%		

GFL Environmental Parts Washer Solvent

SECTION 10: STABILITY AND REACTIVITY DATA

Corrosivity:	Non-corrosive.
Stability:	The product is stable under normal handling and storage conditions.
Incompatible Substances:	Reactive with oxidizing agents.
Hazardous Polymerization:	Will not occur under normal working conditions.
Decomposition Products:	May release carbon monoxide, smoke and irritating vapours when heated to decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Entry:	Skin contact, eye contact, inhalation, and ingestion.
Acute Lethality:	Acute Oral LD50: Not Available Acute Dermal LD50: Not Available Acute Inhalation LC50: Not Available
Dermal Route:	Contact with skin can cause irritation. Prolonged or repeated contact with skin may cause dermatitis.
Inhalation Route:	Inhalation of vapours are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects.
Oral Route:	Low toxicity. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possibly death.
Eye Irritation / Inflammation:	Can cause irritation to the eyes, but will not injure eye tissue.
Reproductive Toxicity / Teratogenicity / Embryotoxicity / Mutagenicity:	Not available.
Carcinogenicity:	IARC – not listed ACGIH – not listed This product contains ethylbenzene. The International Agency for Research on Cancer has evaluated ethylbenzene and classified it as a possible human carcinogen (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans.

GFL Environmental Parts Washer Solvent

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity – Fish Species Data: Not Available
Acute Crustaceans Toxicity: Not Available
Ecotoxicity – Freshwater Algae Data: Not Available

Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Spill areas must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life. Biodegrades easily in water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Consult your local or regional authorities. Preferred waste management priorities are: (1) recycle or reprocess; (2) incineration with energy recovery; (3) disposal at licensed waste disposal facility. Ensure that disposal or reprocessing is in compliance with government requirements and local disposal regulations.

In Saskatchewan, contact: GFL Environmental
100 Cory Road
Saskatoon, Saskatchewan S7K 8B7
Toll-Free (Sask.): 1-877-244-9500

SECTION 14: TRANSPORT INFORMATION

TDG Classification: Non Regulated (Section 1.33 Flash Point > 37.8 °C)

Shipping Name:

PIN:

Packing Group:

**Special Provisions
for Transport:**

SECTION 15: REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt

WHMIS Hazardous Class: B3 Combustible Liquids, D2B Toxic Materials

GFL Environmental Parts Washer Solvent

WHIMS Pictogram:



California Proposition 65:	Not Listed
MA Right to Know List:	Listed
New Jersey Right to Know List:	Listed
Pennsylvania Right to Know List:	Listed

SECTION 16: OTHER INFORMATION

References: Available upon request.

Product and Safety Information:

Univar Canada Ltd.

(IMPORTANT: Reference Mineral Spirits 3139)

Call: (866) 686-4827

For Manufacturer's MSDS:

Univar Canada Ltd.

9800 Van Horne Way

Richmond, B.C., V6X 1W5

Call: (866) 686-4827

Original MSDS prepared by The Safety, Health and Environment Department of Univar Canada Ltd. November 2, 2010

Original MSDS reprinted for GFL Environmental by C. McLean with permission by manufacturer.

FOR UPDATED COPIES OF MSDS, PLEASE CONTACT GFL ENVIRONMENTAL

Notice to Reader

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 the accuracy or 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.

GFL Environmental expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided.

ATTACHMENT 2:
Updated Table 2 – Summary of Wastes



TABLE 2: SUMMARY OF ESTIMATED WASTE VOLUMES BY WASTE CLASS			
Class	Description	Estimated Volume per Month	Estimated Annual Volume
1	Explosives	Class 1 waste will not be accepted.	N/A
2	Gases		
	2.1 - Flammable gasses	10 x 205L drum equivalents	120 x 205L drum equivalents
	2.2 - Non Flammable, non toxic gases	5 x 205L drum equivalents	60 x 205L drum equivalents
	2.3 - Toxic gases	-	5 x 20L pail equivalents
3	Flammable Liquids		
	Packaging Group I	-	5 x 20L pail equivalents
	Packaging Group II	90,000L	1,000,000L
	Packaging Group III	210,000L	2,500,000L
4	Flammable Solids, Spontaneous Combustion, Water Reactive		
	4.1 - Flammable solids	20 x 205L drum equivalents	240 x 205L drum equivalents
	4.2 - Spontaneous combustion substances	-	5 x 20L – PG I
	4.3 - Water reactive substances	-	5 x 20L – PG I
5	Oxidizing Substances and Organic Peroxides		
	5.1 - Oxidizing substances	2 x 205L drum equivalents	24 x 205L drum equivalents
	5.2 - Organic peroxides	-	5 x 20L pail equivalents
6	Toxic and Infectious Substances		
	6.1 - Toxic Substances	2 x 205L drum equivalents	24 x 205L drum equivalents
	6.2 - Infectious Substances	Class 6.2 waste will not be accepted	N/A
7	Radioactive Materials	Class 7 waste will not be accepted	N/A
8	Corrosives	10 x 205L drum equivalents	120 x 205L drum equivalents
9	Miscellaneous Products	5 x 205L drum equivalents	60 x 205L drum equivalents
MHW1	Used lubricating oil	1,200,000L	13,000,000L
MHW2	Used lubricating oil filters in drums	70,000 Kg	840,000 Kg
NR	Empty oil containers and plastic pails	10,000 Kg	120,000 Kg
NR	Non-regulated wastewater	85,000 L	1,020,000 L

ATTACHMENT 3:
GFL Emergency Response Plan – 1090 Kenaston Blvd.





EMERGENCY RESPONSE PLAN

GFL Environmental Incorporated Winnipeg 1090 Kenaston Office and Facility

1090 Kenaston Boulevard
Winnipeg, Manitoba
Client File No.: 4320.00
License No.: 69HW RR
Permit: 23647

13 June 2018

DISTRIBUTION OF COPIES TO THE FOLLOWING:

Internal – 1090 Kenaston Boulevard

Building A – Reception Desk
Building A – Lunchroom
Building A – Sample Prep and Storage Room
Building B – Adjacent South Man door

External

Winnipeg Fire Paramedic Service
Winnipeg Police Service
Winnipeg R.C.M.P.
Manitoba Sustainable Development

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
 1090 Kenaston Boulevard, Winnipeg, MB
 13 June 2018

EMERGENCY CONTACT LIST

Agency	Phone Number	Notes
Winnipeg Fire Paramedic Service	911	
Winnipeg Police Service	911	
RCMP	911	
Manitoba Environmental Emergency Hotline	(204) 944-4888	24 hour Emergency Line
GFL Emergency Hotline (Manitoba)	(204) 987-9600	24 hour Emergency Line
GFL Incident Reporting Hotline	1(866) 417-2797	24 hour Emergency Line
Manitoba Poison Centre	1 (855) 776-4766	24 hour Emergency Line
Manitoba Hydro	(204) 480-5900 in Wpg or 1 (888) 624-9376	24 hour Emergency Line
Canadian National Railway Police	1(800) 465-9239	24 hour Emergency Line

FACILITY PROFILE

Facility Location: 1090 Kenaston Boulevard
Winnipeg, MB

GPS Coordinates: 49.838888° N
97.208127° W

Land Location: Lot 3, Plan 9153, WLTO in OTM Lots 60 to 63, Parish of Saint Boniface

Facility Area: 1.25 hectares (3.1 acres)

Emergency Contact: (204) 987-9600 (24 Hours)

Approval No.: 69HW RR Operating License pursuant to *The Dangerous Goods Handling Transportation Act* (No Expiry)
 23647 Permit to Operate a Petroleum Storage Facility pursuant to the *Storage and Handling of Petroleum Products and Allied Products Regulation* (Expires 31 December 2022)
 MBG04810 Generator Registration for 1090 Kenaston Blvd., Winnipeg (No Expiry)
 MBC20058 Hazardous Waste Transportation Licence (No Expiry)
 MBR04811 Receiver Registration for 1090 Kenaston Blvd., Winnipeg (No Expiry)

Issuing Authority: Manitoba Sustainable Development

Proposed Operations:

1. Bulking, processing, and blending of designated hydrocarbons with used oil
2. Temporary storage of hazardous waste
3. Bulking of non-hazardous waste streams
4. Bulking of hazardous waste streams
5. Processing and recycling of used oil filters
6. Processing and recycling of aerosol containers
7. Drum washing and rinsate collection
8. Temporary storage, bulking and treatment of non-regulated industrial wastewater

Authorized Materials: Class 2.1 – Flammable Compressed Gas
 Class 2.2 – Non-Flammable, Non-toxic, Compressed Gas
 Class 2.3 – Toxic Compressed Gas
 Class 3 – Flammable Liquids
 Class 4.1 – Flammable Solids
 Class 4.2 – Spontaneously Combustible

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
 1090 Kenaston Boulevard, Winnipeg, MB
 13 June 2018

Class 4.3 – Water Reactive
 Class 5.1 – Oxidizing Substances
 Class 5.2 – Organic Peroxides
 Class 6.1 – Toxic Substances
 Class 8 – Corrosive Substances
 Class 9 – Miscellaneous Products and Substances (including, but not limited to:
 environmentally hazardous substances, lithium batteries, nitrate fertilizers)

Site Sensitivity: (line of sight measurements)

Nearest surface water:	240 metres (m) (Southwest)
	675 m (West)
	1,000 m (Northeast)
Nearest residence:	500 m (East)
Nearest water well:	Water well locations not field confirmed in area
Nearest school:	1.4 kilometers (km) (Southeast, Linden Meadows School)
	1.6 km (East, Van Wallegghem School)
Nearest hospital:	5.3 km (Southeast, Victoria General Hospital)
Nearest prison:	3.7 km (North, Winnipeg Youth Centre)
	13.0 km (Northwest, Women’s Correctional Centre)

Emergency Access: Primary Site Access: North Gate – Entrance off Lawson Crescent

Response Distance:

Fire Station No.12:	1.2 km (North, 1780 Taylor Avenue)
Fire Station No. 22	5.1 km (Southeast, 1567 Waverly Street)
Fire Station No. 11:	6.1 km (North, 1705 Portage Avenue)

Storage Capacity:

Tank ID No.	Contents / Process	Capacity (L)
Main Tank Farm		
K1	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K2	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K3	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K4	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K5	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K6	Waste lubricating oil, contaminated water, waste flammable liquids	119,300
K7	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
K8	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
K9	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
K10	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
K11	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
K12	Waste lubricating oil, contaminated water, waste flammable liquids	124,500
F1	Processed Oil	640,000
F2	Processed Oil	640,000
Process Tank Farm		
P1	Waste Water / Oil / Light Ends	60,000
P2	Waste Oil	60,000
P3	Processed Oil	60,000
P4	Waste Oil	60,000
Interior Process Tanks		
P5	Process Oil	15,230
P6	Process Oil	15,230
P7	Process Oil	15,230
P8	Process Oil	15,230
PST1	Process Sludge Tank	4,600

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
 1090 Kenaston Boulevard, Winnipeg, MB
 13 June 2018

Tank ID No.	Contents / Process	Capacity (L)
Ancillary External Tanks		
FPT1	Filter Press Tank	5,000
B1	Waste Light Ends	50,000
S1	Virgin Solvent	4,510
Wastewater Treatment Plant		
Tank 1	Influent Water	12,000
Tank 2	Influent Water	12,000
Tank 3	Influent Water	12,000
Tank 4	Influent Water	20,000
Tank 6	Influent Water	20,000
Tank 7	Influent Water	20,000
Tank 8	Influent Water	10,000
Tank 9	Effluent Water	20,000
Tank S1	Influent Water	31,000
Tank S2	Glycol Water	31,000
GPT1	Glycol Processing Tank	6,000

Shipping Modes: Single axle, Tandem, Triaxle, and Dry Van Trailers
 Highway Transport Dry Van Trailers
 Bulk Liquid Tankers
 Vacuum Trucks

Security Features:

1. Perimeter barbed wire chain link fence
2. Authorized access policy with Visitor Sign-In.
3. Security night lighting
4. Camera surveillance of processing and outdoor storage areas, exterior yard, and shop interior
5. 24hr fire and smoke detectors

Safety Features:

1. High level alarms on single walled storage tanks containing hazardous materials
2. Strategically installed fire extinguisher stations
3. Strategically installed spill stations
4. Emergency decontamination shower
5. Emergency medical and eye wash stations
6. Wind socks
7. Secondary containment (110%) of all storage areas (storage tanks and drum containers)
8. Automatic external defibrillator (AED) installed in Main Office of Building A

Environmental Monitoring:

1. Daily facility inspections
2. Scheduled monitoring and sampling of 8 on-Site groundwater monitoring wells

RECORD OF REVISIONS

Revision Number	Date (dd-mmm-yy)	Revision Description
1.0	05 May 2018	Updated Emergency Response Plan
1.1	08 June 2018	Updated contact numbers, general revisions

TABLE OF CONTENTS

EMERGENCY CONTACT LIST	I
FACILITY PROFILE	I
RECORD OF REVISIONS	III
TABLE OF CONTENTS	IV
LIST OF FIGURES.....	V
1 INTRODUCTION	1
1.1. EMERGENCY PLAN UPDATES	1
1.2. IMPLEMENTATION	1
2 FACILITY AND HAZARDOUS MATERIALS DESCRIPTION	2
2.1. FACILITY DESCRIPTION.....	2
3 MATERIALS DESCRIPTION	2
4 PREPAREDNESS AND PREVENTION.....	2
4.1. LOADING AND UNLOADING	3
4.2. STORAGE.....	3
4.3. POTENTIAL IMPACTS RESULTING FROM AN EMERGENCY	3
4.4. COMMUNICATIONS.....	4
4.5. GENERAL SAFETY PROCEDURES	4
4.6. FIRE RESPONDERS / EQUIPMENT	4
4.7. FIRE DRILLS	4
5 EMERGENCY COORDINATION	5
5.1. EMERGENCY COORDINATOR	5
5.1.1. Duties of the Emergency Coordinator.....	5
5.2. INCIDENT COMMANDER	5
5.2.1. Duties of the Incident Commander.....	5
5.3. EMERGENCY OPERATIONS CENTRE.....	5
6 EMERGENCY PROCEDURES	6
6.1. IMMEDIATE SCENE.....	6
6.2. EMERGENCY COORDINATOR	6
6.3. EVACUATION PLAN: EVACUATION WITHIN THE FACILITY.....	7
6.4. EVACUATION PLAN: EVACUATION OUTSIDE THE KENASTON SITE.....	7
6.5. ADDITIONAL CALLS (AS REQUIRED):.....	8
6.6. FIRES:.....	9
6.6.1. Indoor Fire.....	9
6.6.2. Outdoor Fire.....	9
6.7. GASEOUS/VAPOUR RELEASE TO ATMOSPHERE.....	10

6.8.	RELEASE OF HAZARDOUS LIQUID	10
6.9.	EXPLOSIONS	11
6.10.	FIRE/EXPLOSION INVOLVING AN OFFSITE GAS PIPELINE.....	12
6.11.	WEATHER EMERGENCIES	12
6.11.1.	Lightning.....	12
6.11.2.	Severe Wind.....	12
6.11.3.	Tornado.....	12
6.12.	TRANSPORTATION EMERGENCIES.....	12
6.13.	DERAILMENTS	13
6.14.	TRAINING AND DRILLS.....	14
6.15.	AFTER HOURS EMERGENCIES	14
7	EMERGENCY EQUIPMENT AND SPILL CONTAINMENT.....	14
8	OUTSIDE SUPPORT SERVICES	14

LIST OF FIGURES

Figure 1 – Site Location

Figure 2 – Site Layout and Emergency Equipment Locations

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

1 INTRODUCTION

This Emergency Response Plan (ERP) outlines the response and reporting procedures to be used in the event of an unplanned incident that has the potential to have adverse impacts on the environment or public health and safety at the GFL Environmental Inc. (GFL) Kenaston Facility (Facility) located at 1090 Kenaston Boulevard in Winnipeg, Manitoba. The location of the Facility is presented on Figure 1, while the Site Layout with muster point locations, and tank identification numbers is presented on Figure 2 attached. This plan has been developed based on the requirements of GFL's Manitoba Sustainable Development (MSD) License to Operate No. 69HW RR.

The key elements of this plan are:

1. What is the nature and severity of the emergency?
2. What is to be done?
3. Who does it?

Emergency and contingency responses include the following:

- Accidents and Medical Emergencies;
- Fires;
- Gaseous/Vapour or Liquid Releases;
- Explosions; and
- Environmental and Operational Contingencies.

The provisions of this plan will be performed immediately whenever there is a fire, explosion or release of hazardous waste constituents which could threaten human life, health, or the environment. All Facility personnel and especially the Emergency Coordinators shall be thoroughly familiar with the provisions of this plan and the regulations on which it is based.

1.1. EMERGENCY PLAN UPDATES

GFL will review the Emergency Plan annually and following an emergency incident to ensure that:

- Emergency response procedures for the Facility are effective and updated as necessary;
- Appropriate individuals are appointed to manage emergency situations; and
- Regular fire prevention meetings are conducted with on-Site employees and the Winnipeg Fire Paramedic Service.

The Emergency Plan must also be reviewed and immediately amended as required whenever:

- The Facility license or permit are revised;
- The plan fails in an emergency;
- There are material changes in the Facility or in the wastes being handled; and/or
- Any changes occur in either the personnel named as emergency coordinators or the emergency equipment.

1.2. IMPLEMENTATION

If this Emergency Plan is implemented, the occurrence shall be logged and recorded as well reported via the GFL Mobile App. Upon notification of spills considered reportable in the Manitoba *Environmental Accident Reporting Regulation, 439/87*, dated 08 December 1987, Manitoba Department of Environment and Workplace Safety and Health shall be contacted and the spill reported to the on-call Environment Officer immediately. The report shall contain, but not be limited to:

1. Name and telephone number of person reporting.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

2. Name, address and telephone number of facility and owner /operator.
3. Date, time and type of incident.
4. Name and quantity of materials (s) involved.
5. Extent of injuries, if any.
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable.
7. Corrective actions taken to mitigate or remediate the environmental impacts resulting from the incident.
8. Estimated quantity and disposition of recovered material that resulted from the incident.

Upon request of the Environment Officer, a written report will be prepared by GFL documenting the above and any additional information requested by the Environment Officer. Spills determined to be non-reportable must be reported internally via the GFL Mobile App Incident Reporting function.

2 FACILITY AND HAZARDOUS MATERIALS DESCRIPTION

2.1. FACILITY DESCRIPTION

GFL's Kenaston Facility is comprised of a 11,750 square metre (m²) fenced compound encompassing an office building with attached processing shop and wash bay approximately 750 m² in size within the central portion of Yard (Building A). GFL's wastewater treatment plant and associated tankage is located within a second building 375 m² in size located near the northeast corner of the Site (Building B). Highway transport trailer units and intermodal shipping containers are located on the east side of Building A. Two AST structures with secondary containment are located south of Building A. Used lubricating oil and filter collection trucks, vacuum trucks and specialized trucks, are parked south of Building A and along the north property line in the vicinity of Building B. The northwest portion of the property is asphalt-paved from the entrance gate on Lawson Crescent to the southwest corner of the main office building. The remainder of the yard is surfaced with gravel.

3 MATERIALS DESCRIPTION

The principal groups of materials handled at the Facility may include:

1. Ignitable (flammable)
2. Corrosive
3. Reactive
4. Toxic

The materials are comprised of:

1. Solids
2. Liquids
3. Gases
4. Sludge (Solid/Liquid Mixtures)

4 PREPAREDNESS AND PREVENTION

GFL is licensed and permitted to import, receive, bulk, generate, transport and dispose off-site non-hazardous and hazardous wastes by brokering to end-receiving facilities. The Kenaston Facility has been designed and constructed so that the likelihood of a discharge, fire or explosion is minimized to the greatest extent possible.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

4.1. LOADING AND UNLOADING

The unloading or transferring of packaged hazardous waste occurs on a concrete pad area within secondary containment. Emergency equipment and wash-down water is available to collect and remediate any minor spills and/or leaks, which may occur during the unloading process. All washing/rinsing water is contained on-site within secondary containment and then transferred into storage tanks for on-site treatment, blending and/ or off-site disposal.

4.2. STORAGE

All hazardous waste is contained in fixed tanks, portable tanks, packages or containers that are made in accordance with recognized industry standards and regulations. Fixed tank, portable tank, package and container materials of construction are compatible with the waste stored, of durable construction and designed to resist damage from normal material handling and transportation activities.

Hazardous waste stored in portable tanks, packages or containers is located within the outdoor storage area or temporarily stored within van-body trailers pending transportation to disposal facilities according to the quantity, type and compatibility of the material. All storage is in conformance with Parts 3 and 4 of the National Fire Code of Canada.

4.3. POTENTIAL IMPACTS RESULTING FROM AN EMERGENCY

In the event of a discharge, fire or explosion the following general situations may occur:

1. Direct effects on human health
2. Indirect effects on human health
3. Direct effects on the environment
4. Indirect effects on the environment

These effects could compromise the following:

1. Acute injury to operational personnel due to burns, broken bones, respiratory concerns, poisoning usually occurring by direct exposure during an accidental release or fire incident.
2. The direct and indirect impacts on the environment might include a release of gas /vapours, by-products of combustion and/ or liquid spilled into the environment around the Site.

The emergency procedures developed to deal with these effects are included in the Plan.

Hazardous waste materials are stored in compatible groups using the following storage methods in accordance with applicable provincial and federal regulations:

1. Mild steel, approved, ASTs.
2. Plastic, approved, ASTs.
3. Steel and plastic 205 L drums compatible to the material type stored.
4. Steel and plastic 322 L over-pack drums compatible to the material type stored.
5. Four drum mild steel secondary containment Enviro Packs.
6. 1,200 Litre Intermediate Bulk Container (IBC) mild steel tanks.
7. 1,000 and 1,800 Litre IBC polyethylene bags.
8. Mild steel and plastic pails, kegs and cans with a maximum volume of 205 Litres.

Maximum height of storage for all drummed wastes does not exceed: 2.4 meters (m) high for wastes with chemical properties within the definition of Transportation of Dangerous Goods Regulations (TDGR) Packing Group I products (2 drums high); and, a maximum storage height of 3 drums for all other wastes.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

Access aisles for firefighting are maintained free of obstructions within Building A and Building B. Aisles, with a minimum width of 1,100 millimeters (mm), are provided for access to exits.

4.4. COMMUNICATIONS

Communications at the Facility from operational personnel to other personnel is by: verbal communication; cellular telephone; or, land based telephone.

4.5. GENERAL SAFETY PROCEDURES

The procedures for general safety at the Facility which are utilized to prevent accidental release are included in GFL's Safety Procedures Manual. Highlights include:

1. No smoking policy is in effect within all buildings and storage areas of the Facility and yard;
2. Speed limit policy of 10 kilometers per hour;
3. Hot Work – any process that can be a source of ignition when flammable material is present requires written permission, continuous supervision and performed by specifically trained professionals;
4. Tank Filling Procedure - to assess volumes, materials types, release response, etc.; and
5. Inspection of pumps and materials handling equipment regularly to ensure integrity.

4.6. FIRE RESPONDERS / EQUIPMENT

The Facility maintains an inventory of equipment which can be used on a first response basis in the event of an emergency.

Portable fire extinguishers have been positioned in strategic locations throughout the Site. All extinguishers are inspected and maintained in accordance with standard safety guidelines. All Facility personnel are familiar with the locations and proper operation of the fire extinguishers. Fire extinguisher training is provided on a regular basis and documented.

Operating and emergency procedures have been implemented and Facility personnel have been trained in the procedures to ensure the proper segregation and safe handling of hazardous wastes, and that timely action is taken to control an emergency situation.

4.7. FIRE DRILLS

Fire drills are essential in maintaining the accuracy and effectiveness of any fire plan. Full internal fire drills, including on site evacuation drills are held a minimum of twice per year. Drills include:

1. Activation of on-site emergency notification system(s).
2. Evacuation of Building A personnel.
3. Evacuation of Building B personnel.
4. Evacuation of any personnel working outside.
5. Evacuation of any on-site contractors or delivery personnel.
6. Assembly of personnel at the appropriate Emergency Muster Point.
7. Perform a head count.
8. All clear signal and return to normal work activity.
9. Debrief meeting with key personnel including emergency coordinators and management.

Any shortcomings discovered in the evacuation plan will be addressed after the drill debriefing meeting and applicable changes will be made to the contingency plan.

5 EMERGENCY COORDINATION

5.1. EMERGENCY COORDINATOR

To ensure twenty-four (24) hour coordination, at least two (2) Alternate Coordinators will be listed in the Plan. The Emergency Coordinator or designated Alternate will be on call and available at all times.

GFL maintains operation and staffing at the Facility at least eight (8) hours per day, five (5) days a week, fifty-two (52) weeks per year and management personnel are on site 8:00 am to 5:00 pm, Monday through Friday, excluding holidays. During off hours, GFL has a 24 hour answering service with the number of the person who has the responsibility to take the necessary action and notify the Emergency Coordinator or Alternate should an emergency situation develop.

Assignment	Name	Cell Phone Number
Emergency Coordinator	Colin Dutton	(306) 715-7015
Alternate I	Jason Henkel	(204) 999-0224
Alternate II	Dave Rowan	(204) 981-1592

Note: There is a twenty-four (24) hour direct line answering service by calling (204) 987-9600.

5.1.1. Duties of the Emergency Coordinator

In the event of an emergency that could threaten human life, health or the environment such as a fire, discharge or release of hazardous materials, or an explosion, the Emergency Coordinator or Alternate will ensure immediate action is taken to protect personnel and property and minimize the impact on the environment.

The Emergency Coordinator or Alternate is responsible for all incident-related tactical activities of the emergency response plan. The Emergency Coordinator and alternates are thoroughly familiar with all aspects of this Emergency Plan, all operations at the site, the location and characteristics of hazardous waste and the Facility layout. The Emergency Coordinator on duty at the time of any emergency will contact the Incident Commander or Alternate and provide relevant details of the incident.

5.2. INCIDENT COMMANDER

For the purpose of this Emergency Plan, a senior manager is designated as primary Incident Commander for GFL. In their absence there shall be at least two (2) Alternate Coordinators.

Assignment	Name	Cell Phone Number
Incident Commander	Jason Henkel	(204) 999-0224
Alternate I	Colin Dutton	(306) 715-7015
Alternate II	Dave Rowan	(204) 981-1592

5.2.1. Duties of the Incident Commander

The Incident Commander or Alternate are responsible for overall incident management and will be located within the Emergency Operations Centre (EOC). At the direction of the Incident Commander or alternate, a Public Information Officer, Liaison Officer and /or Safety Officer may be designated to assist the Incident Commander.

5.3. EMERGENCY OPERATIONS CENTRE

For the purpose of this Emergency Plan, an EOC will be established at the direction of the Incident Commander or Alternate.

The location of the EOC will be determined at the time of the emergency and be located at a designated off-Site location depending on the nature and severity of the emergency.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

6 EMERGENCY PROCEDURES

In the daily course of activity at the Facility, minor leaks or spills if they occur are normally detected immediately and corrected before they can cause an emergency situation to develop. However, best efforts, with strict inspection and operating procedures, cannot absolutely guarantee that an emergency situation will not occur. Therefore, it is necessary to be prepared to deal with unexpected occurrences which could endanger human life, health or the environment.

The emergency procedures have been developed with the purpose of bringing an emergency situation under control quickly to minimize any threat to human life, the environment, and property damage.

6.1. IMMEDIATE SCENE

1. Persons in the vicinity of a fire, gaseous /vapour release, liquid waste release, explosion, or transportation emergency should always evacuate immediately to an area upwind and to a distance out of immediate exposure of the incident.
2. Notify Emergency Coordinator of the emergency (this may be accomplished by notifying a supervisor or manager who will in turn notify the Emergency Coordinator).

6.2. EMERGENCY COORDINATOR

When the threat of a fire, gaseous/vapour release, release of liquid waste, explosion, extreme weather, or transportation emergency is recognized, the Emergency Coordinator will immediately identify the nature of the event. For emergency situations involving releases of hazardous materials, the nature, source, volume, and extent of any released material shall be determined. To aid the Emergency Coordinator in this task, personal observation, Facility records, manifests, chemical analysis or other appropriate means will be used.

In the Emergency Coordinator's absence, two alternates have been established. In the event of an emergency the Emergency Coordinator will:

1. Determine the nature and extent of the emergency (fire, gaseous /vapour release, liquid release, explosion, extreme weather event, transportation).
2. If an alarm has not been sounded, determine if an alarm needs to be sounded.
3. Determine if the emergency can be handled by in-house personnel or requires outside resources.
4. Call for outside resources, if required.

Concurrently with the above actions, the Emergency Coordinator must assess possible threats to human health or the environment that may result, directly and indirectly, from the situation. The Coordinator will consider the effects of any toxic, irritating, or asphyxiation gases that could be generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fires and heat induced explosions. Consideration will be given to atmospheric conditions such as wind direction, precipitation, humidity and temperature.

The Emergency Coordinator must ensure that the Facility is being monitored for leaks, pressure build-up in vessels and piping, excessive temperature build-up in equipment etc., to minimize the possibility of subsequent incidents occurring as a result of the current situation.

The Emergency Coordinator must ensure that the operations in the affected area are NOT resumed until:

1. Confirmation that no waste that may be incompatible with any released material will be treated, stored, or disposed of in the affected area until clean-up has been completed.
2. All emergency equipment used is demobilized, cleaned, and fit for its intended use.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

3. All federal, provincial or local authorities involved have been notified that the affected area is secure and it is safe to resume operation.

The Emergency Coordinator will coordinate a debriefing meeting with key personnel.

6.3. EVACUATION PLAN: EVACUATION WITHIN THE FACILITY

In the case of activation of the fire alarm system or use of the communication system to notify Facility personnel of an actual or imminent emergency situation other than a wind event, the following will be conducted:

1. Stop all activities in the affected area.
2. Evacuate the building /area using the closest safe emergency exit /route taking any visitors with you.
3. Notify the Emergency Coordinator who will determine if:
 - a) Assistance is needed from outside emergency response agencies / provincial authorities and will summon appropriate aid.
 - b) The fire presents or will result in danger to persons or property outside the Facility and initiate appropriate action if needed.
4. Travel upwind of the emergency and assemble at the assigned Muster Point (reception personnel must bring site visitor sign-in list).
 - Muster Point A – located at the main north gate entrance to the Facility adjacent to Lawson Crescent.
 - Muster Point B – located at the man gate along the west fence of the Facility along Kenaston Boulevard. This gate is locked at all times for site security. Reception will bring the key to the lock as well the visitor sign-in list to this location.

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

5. Perform head count (reception personnel perform head count and reports findings to Emergency Coordinator).
6. If safe to do so, allow non-essential personnel to leave the site once accounted for and record their time of departure.
7. A designated staff member or designated alternate shall, when safe to do so, determine location of alarm activation, report findings to Emergency Coordinator and meet Fire Department personnel to report findings.

6.4. EVACUATION PLAN: EVACUATION OUTSIDE THE KENASTON SITE

This portion of the Emergency Plan focuses on the evacuation of personnel from the Kenaston site and personnel from affected local areas adjacent the Kenaston Facility to a safe location during an emergency.

The Emergency Coordinator shall immediately notify the appropriate local and provincial emergency response agencies /authorities if their assistance is required to control the situation by calling 911.

The Emergency Coordinator must be available to the local emergency response agencies / authorities to assist the appropriate officials in their decision to evacuate the Kenaston site and local areas. If an evacuation is warranted, the Emergency Coordinator will assist with the coordination of the evacuation.

THE DECISION TO EVACUATE THE KENASTON FACILITY AND LOCAL AREAS WILL BE THE RESPONSIBILITY OF THE AUTHORITY HAVING JURISDICTION AT THE SCENE.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
 1090 Kenaston Boulevard, Winnipeg, MB
 13 June 2018

6.5. ADDITIONAL CALLS (AS REQUIRED):

In the instances of a release of Dangerous Goods or Hazardous Waste over the regulated reporting quantity as outlined in the Manitoba *Environmental Accident Reporting Regulation, 439/87*, dated 08 December 1987, the Emergency Coordinator will contact Manitoba Department of Environment and Workplace Safety and Health at the below number.

- Manitoba Department of Environment and Workplace Safety and Health – (204) 944-4888

In the event of a large scale incident at the Facility that may affect the Canadian National Railway (CN) rail line adjacent the southern property line, CN Police should be notified so that rail movements can be monitored or adjusted as required.

- CN Police 24 Hour Emergency Line – 1 (800) 465-9239

In addition, the Emergency Coordinator will then contact the Emergency Response on-call Team Leader or their designate and initiate the internal report of the release and subsequent response. On-call Response Team Leader can be contacted through GFL’s main telephone number.

- GFL Environmental Inc. – (204) 987-9600

Additional resources will be dispatched on an as-needed basis by the responding agency or organization (RCMP, Fire, EMS). On-call Response Team Leaders for GFL will activate GFL responders and third party responders, as required.

The Emergency Coordinator shall immediately notify businesses adjacent to the Facility which may be affected if a release of harmful gaseous material has occurred or a potential release is imminent. Businesses immediately adjacent to the Facility are presented below.

Business Name	Contact Number	Direction from Facility
A&W Restaurant	(204) 488-0588	North
KalTire	(204) 487-3320	North
Esso Cardlock	(204) 233-0848	Northeast
Shorty’s Fencing	(204) 895-0202	East
Wallace + Wallace	(204) 452-2700	East
Broadway Construction	(204) 261-1524	Southeast
McCaine Electric Ltd.	(204) 786-2435	Southeast
Foundation Building Material	(204) 488-4477	South
Lehigh Heidelberg Cement Group	(204) 334-4300	Southwest
Ikea Winnipeg	1 (866) 866-4532	West
Seasons of Tuxedo Shopping Complex (Administration Office)	(204) 318-2251	Northwest

When the incident is reported to Manitoba Department of Environment and Workplace Safety and Health, the report shall contain the following information:

1. Name and telephone number of person reporting.
2. Name, address and telephone number of facility and owner/operator.
3. Date, time, and type of incident.
4. Type and quantity of material(s) involved.
5. Extent of injuries, if any.
6. An assessment of actual or potential hazards to human health or the environment, where this is applicable.
7. Estimated quantity and disposition of recovered material that resulted from the incident.

Only designated GFL officials will participate in discussions with the media. Workers are prohibited from speaking to the media on behalf of GFL.

6.6. FIRES:

6.6.1. Indoor Fire

1. Stop all activities in the affected area.
2. Locate the closest safe emergency exit. While exiting engage the audible alarm and evacuate the building taking any visitors with you.
3. Notify a supervisor or the Emergency Coordinator who will determine if:
 - a) Assistance is required from outside emergency response agencies / provincial authorities and will request appropriate resources.
 - b) The fire presents or will result in danger to persons or property outside the Facility and initiate appropriate action if needed.
4. Personnel not involved in fighting the fire are to assemble at the appropriate Emergency Muster Point:
 - Muster Point A – located at the north entrance gate adjacent to Lawson Crescent.
 - Muster Point B – located at the man gate along the west fence of the Facility along Kenaston Boulevard. This gate is locked at all times for site security. Reception will bring the key to the lock as well the visitor sign-in list to this location.

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

5. Perform head count (reception personnel perform head count using visitor sign-in list and report findings to Emergency Coordinator).
6. Extinguish the fire using a portable fire extinguisher, if trained in its use and safe to do so. Evacuate and wait for assistance if the fire is beyond the extinguishing capability of a single fire extinguisher.

IF THE FIRE IS LARGE...DO NOT ATTEMPT TO EXTINGUISH...ALLOW IT TO BURN

7. If safe to do so, allow non-essential personnel to leave the Facility once accounted for and record their time of departure.
8. Emergency Coordinator will use the communication system to issue an all clear notification when it is safe for personnel to re-enter the building.
9. Once the incident is under control and the fire has been extinguished, the Emergency Coordinator shall ensure that waste and/or contaminated material resulting from the fire is immediately cleaned up and disposed of according to established procedures, and all firefighting equipment used is cleaned and restored for future use.

6.6.2. Outdoor Fire

1. Stop all activities in the affected area.
2. Evacuate the areas taking any visitors with you and ensure that all personnel not involved in fighting the fire are moved to the appropriate Emergency Muster Point based on location and wind direction.
 - Muster Point A – located at the north entrance gate adjacent to Lawson Crescent.
 - Muster Point B – located at the man gate along the west fence of the Facility along Kenaston Boulevard. This gate is locked at all times for site security. Reception will bring the key to the lock as well the visitor sign-in list to this location.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

3. Notify the Emergency Coordinator who will determine if:
 - a) Assistance is needed from outside emergency response agencies /provincial authorities.
 - b) The fire presents or will result in danger to persons or property outside the Facility and initiate appropriate action if needed.
4. Perform head count (reception personnel perform head count and report findings to Emergency Coordinator).
5. Extinguish the fire using a portable fire extinguisher if properly trained in its use and safe to do so. Evacuate and wait for additional resources if the fire is beyond the extinguishing capability of a single fire extinguisher.

IF THE FIRE IS LARGE ... DO NOT ATTEMPT TO EXTINGUISH ... ALLOW IT TO BURN

6. If safe to do so, allow non-essential personnel to leave the Facility once accounted for and record their time of departure.
7. Emergency Coordinator will use the communication system to issue an all clear notification when it is safe for personnel to re-enter the building.
8. The Emergency Coordinator will ensure that any waste and/or contaminated material resulting from the fire is immediately cleaned up and disposed of according to established procedures, and all firefighting equipment used is cleaned and restored for future use.

6.7. GASEOUS/VAPOUR RELEASE TO ATMOSPHERE

This portion of the Emergency Plan focuses on gaseous/vapour release that may result from unexpected reactions in a container or a spill of a liquid material which emits harmful vapour into the atmosphere.

1. Stop all activities in the affected area.
2. Evacuate the area taking any visitors with you and ensure that all personnel move a safe distance and if outdoors, upwind from the source of the gaseous /vapour release.

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

3. Notify the Emergency Coordinator of the source and extent of the release. The Emergency Coordinator will:
 - a) Assess the situation and implement the Emergency Plan if the situation poses an actual or imminent threat to human health or the environment.
 - b) Determine the cause and take remedial action to eliminate the cause, ensuring personnel are using the proper personal protective equipment (PPE) and the decontamination process for responding personnel is provided before entering the hazardous area.
4. If safe to do so, stop the flow of harmful gaseous vapour to the atmosphere by closing a valve, plugging a hole, absorbing a spill or cooling a drum to prevent over pressurization of the system from which the vapour is emitting.

6.8. RELEASE OF HAZARDOUS LIQUID

This portion of the Emergency Plan focuses on hazardous liquid releases from means of containment ranging from small containers to tanks.

1. Stop all activities in the affected area.
2. Evacuate the area taking any visitors with you and ensure that all personnel move a safe distance and if outdoors upwind from the hazardous liquid release.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

3. Notify the Emergency Coordinator of the source and extent of the release. The Emergency Coordinator will:
 - a) Assess the situation and implement the Emergency Plan if the situation poses an actual or imminent threat to human health or the environment.
 - b) Determine the cause and take remedial action to eliminate the cause, ensuring responding personnel are using the proper PPE and the decontamination process for responding personnel is provided before entering the hazardous area.
4. Identify the released liquid by:
 - a) Location of tank, load lists or drum lists to determine the exact nature of the hazardous liquid; in addition, hazardous waste labels, manifests, waste profile sheets and other documentation can be referenced.
 - b) The inventory lists of drums.
5. If safe to do so, stop the flow of hazardous liquid by closing a valve, plugging a hole, absorbing a spill etc.
6. Clean-up released liquid and dispose of contaminated material immediately following successful containment.
7. Empty the container and decontaminate it as soon as possible.
8. Identify the characteristics, exact source, amount and area impacted by released liquid and ensure mitigative action is taken.

6.9. EXPLOSIONS

The four major types of explosions are mechanical, chemical, electrical and nuclear and may be defined as:

1. **Mechanical Explosion** – The rupture of a closed container, cylinder, tank, boiler etc. resulting in the release of pressurized gas such as the rupture of a hot water heater caused by the generation of steam from overheating water. The pressure within the container is not due to a chemical reaction in the container.
2. **Chemical Explosion** – Caused by the extremely rapid conversion of a solid or liquid explosive compound into gases having a much greater volume than the substance from which they were generated causing over pressurization. The most common chemical explosions are those caused by burning combustible hydrocarbon fuels within an enclosure.
3. **Electrical Explosion** – High-energy electrical arcs that generate sufficient heat to cause an explosion such as a lightning bolt causing pressure waves due to the rapid heating of surrounding air with the accompanying explosion. Electrical explosions caused by lightning will be addressed in Weather Emergencies.
4. **Nuclear Explosion** – High pressure is created by heat produced by the fusion or fission of the nuclei of atoms. Nuclear explosions are beyond the scope of this ERP

The effects of explosions include: blast over-pressure, projected fragments (shrapnel), thermal extremes, and seismic (ground shock). Personnel may suffer injuries from any and all of the effects.

The Emergency Coordinator must be concerned with accountability of personnel working at the Facility and must take a head-count as quickly as possible and initiate rescue efforts, if needed.

**AN EXPLOSION IS MOST LIKELY TO RESULT IN ONE OR MORE OF THE EMERGENCY
CONDITIONS DESCRIBED IN THIS PLAN, THEREFORE, THE APPROPRIATE EMERGENCY
PROCEDURE WILL BE FOLLOWED**

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

6.10. FIRE/EXPLOSION INVOLVING AN OFFSITE GAS PIPELINE

There are underground gas pipelines running along the west property boundary owned by Manitoba Hydro. It is possible that there could be a leak either due to pipeline damage, corrosion or wear. A gas pipeline leak could be ignited by a vehicle or other ignition source. In the event of a gas leak and fire/explosion, the Winnipeg Fire Department would initiate an evacuation

The following emergency numbers can be contacted to inform or inquire about the emergency:

Manitoba Hydro (24/7) (204) 480-5900 (in Winnipeg)
1 (888) 624-9376 (outside Winnipeg)

Employees will be dispatched in an orderly manner from the site and in a safe direction away from the fire as directed in the Evacuation Plan presented in Sections 6.3 and/or 6.4.

6.11. WEATHER EMERGENCIES

6.11.1. Lightning

When lightning is observed in the vicinity of the Facility, take immediate shelter inside a vehicle or building and stay away from building openings. A delay of ten seconds or less from seeing a lightning arc to the subsequent thunder clap may be considered the immediate vicinity for lightning activity.

6.11.2. Severe Wind

Severe wind causes flying debris which is a threat to personnel and property. When flying debris is observed take shelter immediately in a building and if off-site and a building is not available lie down flat in a depression, ditch, or low spot on the ground and protect your head with an object or with your arms.

6.11.3. Tornado

If a funnel cloud is sighted:

1. At the Kenaston Facility:
 - a) Stop all activities.
 - b) Take shelter immediately (with visitors) in the inner office portion of Building A away from any windows /glass doorways and hazardous materials.
 - c) Notify the Emergency Coordinator who will perform a head count.
2. On the Road:
 - a) The least desirable place to be during a tornado is in a motor vehicle.
 - b) Do not try to outrun a tornado in a vehicle.
 - c) If you see a tornado, stop your vehicle and get out.
 - d) Do not get under your vehicle.
 - e) Take shelter immediately in a building (go to the innermost part of a building on the lowest possible floor and away from windows and glass doorways).
 - f) Where a building is not available, lie down flat in a depression, ditch, or low spot on the ground and protect your head with an object or with your arms.

6.12. TRANSPORTATION EMERGENCIES

Operators must report any and all transportation or loading/unloading incidents including but not limited to motor vehicle accidents, unintentional or willful release due to vandalism of any commodity in transportation and in direct care and control of GFL to either the Emergency Coordinator or the On-call Response Team Leader as soon as possible.

Information to be reported includes: product, location, condition of vehicle, amount of spill and/or leak, rate of release, weather conditions, nearest water source, traffic conditions, emergency services status,

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

and steps taken to reduce exposure, containment, and telephone number where they may be reached. All accidents, breakdowns or spills must also be reported to GFL. Drivers must report all product leakage and spills of any amount over public roads, highways, and terminals.

If safe to do so, controlling the leak or spills is the driver's number one priority. Reduction of exposure is the primary concern of a spill response and all hazards should be communicated to police and fire departments. Physical reduction of fire, public and traffic hazards must be performed by the driver, if necessary. Some spills can be fully contained with the use of a shovel only, and the driver may obtain help from local people to assist him in getting the proper equipment to contain the spill.

If the driver is incapacitated or cannot leave the scene, police or the public may report the accident to the GFL Kenaston twenty-four (24) hour number (204) 987-9600.

Recording the event with pictures and an accurate written description of actions can be essential in regulatory reporting, lawsuits, fine negotiations, incident response evaluation and training sessions. All transportation incidents must be reported internally via the GFL Mobile App Incident Reporting function.

Following a discharge to the environment following a transportation incident, GFL will complete:

1. An assessment of actual or potential hazards to human health or the environment, where applicable.
2. Develop and implement corrective actions to be implemented to mitigate or remediate the environmental impacts resulting from the incident to acceptable end-points.
3. Complete confirmatory sampling to ensure that remedial end-points have been achieved, where applicable.

If the release is determined to be reportable to the Manitoba Department of Environment and Workplace Safety and Health, GFL will contact the on-call Environment Officer to report the spill. A written report summarizing the details of the release and all subsequent mitigation and remediation activities completed including confirmatory sampling, if required, will be prepared by GFL at the request of the Environment Officer.

Spills determined to be non-reportable to the Manitoba Department of Environment and Workplace Safety and Health must still be reported internally via the GFL Mobile App Incident Reporting function.

Disposal of contaminated and non-contaminated material will be handled by the GFL Emergency Coordinator.

6.13. DERAILMENTS

A rail line operated by CN is located adjacent to the southern property line of the Kenaston Facility. In the event of a derailment, the following actions will be completed.

1. Stop all activities at the Facility.
2. Evacuate the area taking any visitors with you and ensure that all personnel move a safe distance and if outdoors upwind from the site of the derailment.

REFER TO WIND SOCK ON TOP OF THE TANK FARM AND THE FLAG ON THE OFFICE, AND STAY UPWIND WHILE TRAVELING TO THE EMERGENCY MUSTER POINT

3. Notify the Emergency Coordinator of the derailment. The Emergency Coordinator will:
 - a) Assess the situation and implement the Emergency Plan if the situation poses an actual or imminent threat to human health or the environment.
 - b) Call 911 to report the derailment.
 - c) Contact the CN Police 24 hour emergency number to report the derailment at 1-800-465-9239.

EMERGENCY RESPONSE PLAN

GFL Environmental Inc. – Kenaston Facility
1090 Kenaston Boulevard, Winnipeg, MB
13 June 2018

4. Depending on the nature and severity of the derailment and if there has been a discharge of any hazardous materials, follow the Evacuation Plans as presented in Sections 6.3 and/or 6.4.

6.14. TRAINING AND DRILLS

Emergency Coordinators will be provided the appropriate training to perform the duties required as outlined in this plan. Emergency Coordinators are also trained in the proper use of the emergency air horn in the case of an emergency. Bi-annual emergency drills will be performed and evaluated at the discretion of senior management.

6.15. AFTER HOURS EMERGENCIES

Emergency Coordinators will be responsible for attending all after hours on-site emergencies. If Winnipeg Fire Paramedic Service reaches the Facility before a GFL Emergency Coordinator, the main gate lock will be cut and access to the Site granted.

7 EMERGENCY EQUIPMENT AND SPILL CONTAINMENT

The Facility is equipped with a variety of strategically located fire protection equipment sufficient to fight small fires which might occur. Each operating employee is trained for the use of fire protection equipment and proper firefighting procedures, and is instructed as to which materials within the Facility are likely to be involved in a fire situation.

All building sumps are self-contained or drain to an on-site wastewater UST pending appropriate off-site treatment or disposal. The processing portion of Building A has an elevated concrete curb installed that acts as additional secondary containment for interior processing activities. All ASTs currently installed at the Facility are of double-walled construction or are located within secondary containment equal to no less than 110% of the largest AST plus 10% of the aggregate total storage volume within the containment.

The yard of the Facility is graded such that no off-Site run-off occurs effectively providing site-wide secondary containment. Any accumulated surface water within the yard is recovered using a vacuum truck and treated in the on-site water treatment system in Building B.

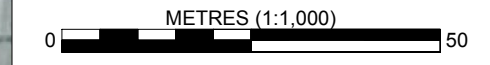
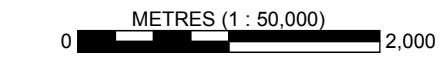
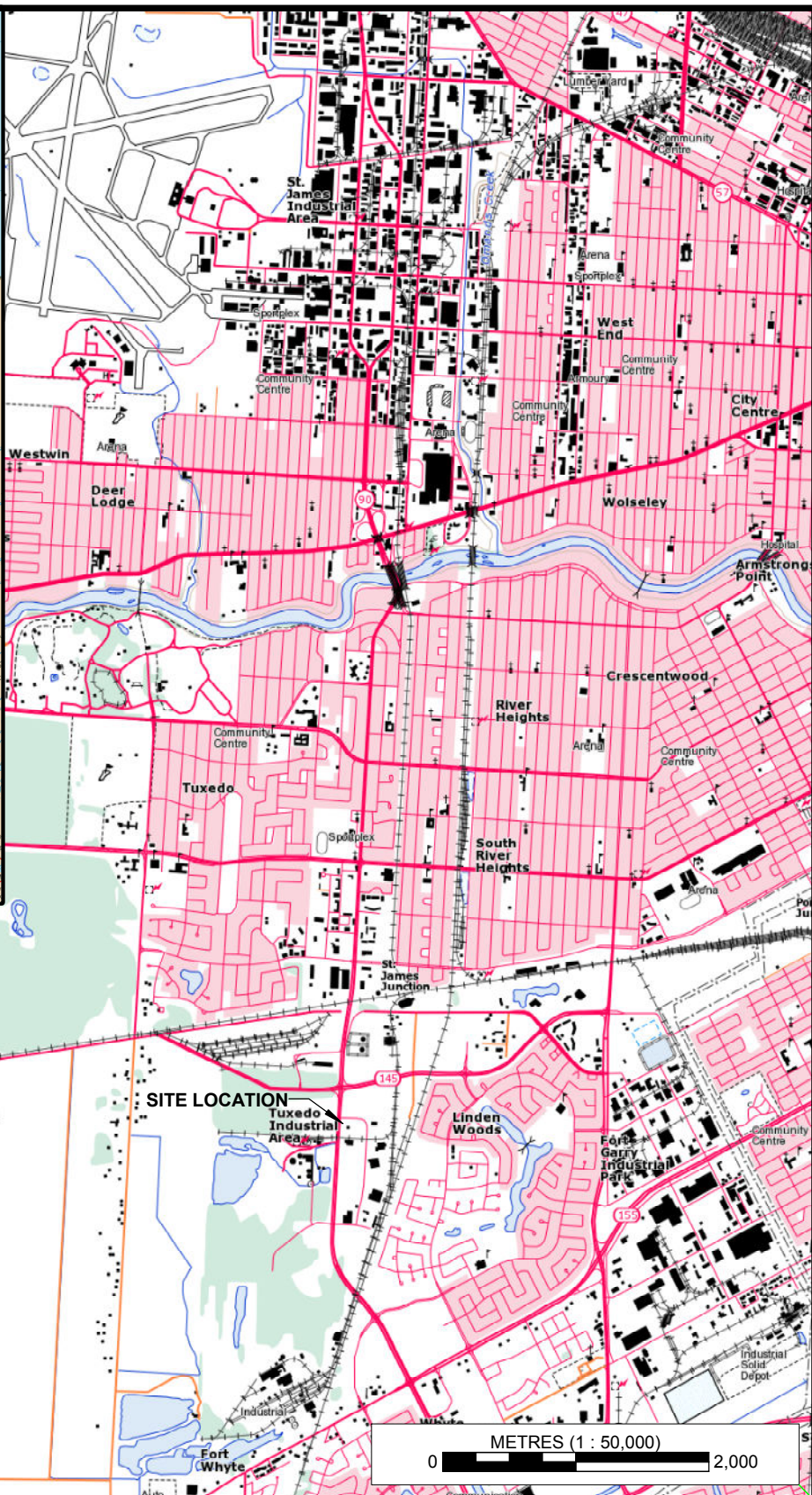
8 OUTSIDE SUPPORT SERVICES

Should it be necessary to contact outside contractors for support services in a major cleanup of operations at the plant site, the following companies are available to assist as directed by GFL's Emergency Coordinator.

- AJ Excavating (Excavating) (204) 792-9449
- Wood plc (Consultant) 204-488-2997

Figures





NOTES:

1. THIS DRAWING IS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THIS IS NOT A LEGAL SURVEY. ALL MEASUREMENTS ARE IN METRES.
2. SITE COORDINATES: 49.838888° N, -97.208127° W.
3. TOPOGRAPHIC MAP COURTESY OF NATURAL RESOURCES CANADA GEOGRATIS, 2017.
4. AERIAL IMAGERY COURTESY GOOGLE EARTH, 2017.
5. INSET MAP COURTESY OF CANADA-MAPS.ORG, 2017.

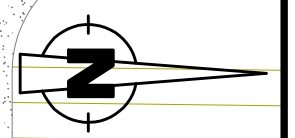
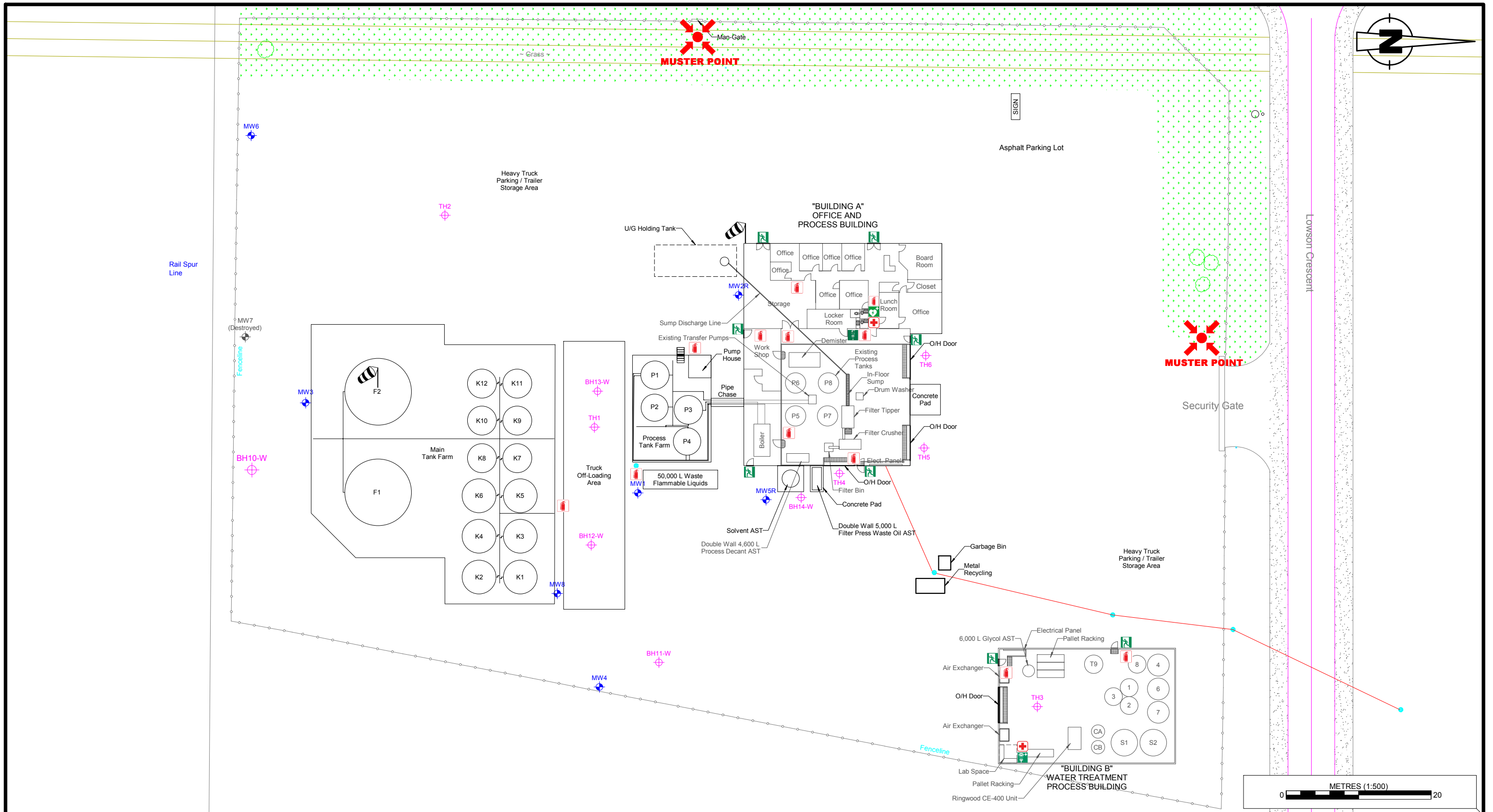
LEGEND:

PROPERTY LINE (APPROXIMATE) - - - - -



REVISIONS	REVISOR	DATE

FIGURE 1
SITE LOCATION
03 MAY 2018
GFL KENASTON FACILITY
1090 KENASTON BLVD, WINNIPEG, MB
DRAWN BY: SAM
CHECKED BY: GJW



NOTES:
 1. THIS DRAWING IS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THIS IS NOT A LEGAL SURVEY. ALL MEASUREMENTS ARE IN METRES.
 2. SITE COORDINATES: 49.838888° N, -97.208127° W.

LEGEND:	
FENCE	
MONITORING WELL	
BOREHOLE	
O/H POWER	
MUSTER POINT	
FIRE EXTINGUISHER	
EMERGENCY EXIT	
FIRST AID KIT	
EMERGENCY EYEWASH STATION	
EMERGENCY SHOWER AND EYEWASH	
AED	
WINDSOCK	

REVISIONS	
REVISED BY / DATE	
REVISED BY / DATE	
REVISED BY / DATE	
REVISED BY / DATE	
REVISED BY / DATE	
REVISED BY / DATE	

FIGURE 2
 SITE LAYOUT AND EMERGENCY EQUIPMENT LOCATIONS
 03 MAY 2018
 GFL KENASTON FACILITY
 1090 KENASTON BLVD, WINNIPEG, MB
 DRAWN BY: SAM
 CHECKED BY: GJW



ATTACHMENT 4:
Select Product Safety Data Sheets





MATERIAL SAFETY DATA SHEET

On -Specification Used Oil

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General Information:

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CleanTech Environmental Services
 Company's Emergency Phone #: 713-269-7504
 Company's Phone #: 626 - 812-7200
 Date MSDS Prepared 10/11/11
 Safety Data Review Date: 10/11/12
 Hazard Ratings: HEALTH 1 FIRE 2 REACTIVITY 0

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Ingredients/Identity Information

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Proprietary: NO
 Ingredient: PETROLEUM HYDROCARBONS
 Percent: > 99%

 Proprietary: NO
 Ingredient: SULFUR
 Percent: Range from 0 to 0.5 % by weight

 Proprietary: NO
 Ingredient: HALOGENATED HYDROCARBONS
 Amount: <1000 ppm Total Halogens

 Proprietary: NO
 Ingredient: LEAD
 Amount: <100 ppm Total lead

 Proprietary: NO
 Ingredient: CHROMIUM
 Amount: <10 ppm Total chromium

 Proprietary: NO
 Ingredient: ARSENIC
 Amount: <5 ppm Total arsenic

 Proprietary: NO
 Ingredient: CADMIUM
 Amount: <2 ppm Total casmium

Physical/Chemical Characteristics

Appearance and Odor: BROWN/BLACK OIL; PETROLEUM-LIKE ODOR
Boiling Point: 400-1000° F
Vapor Pressure: 1.0 mmHg @ 68° F
Specific Gravity: 0.8-0.9 @ 60° F
Liquid Density: 6.5-7.5 lb./gal @ 60° F
Solubility in Water: NEGLIGIBLE
Viscosity @ 100° F: 25-40 Kinematic Centistokes or 120-185 Saybolt Universal Seconds

Fire and Explosion Hazard Data

Flash Point: >150° F
Flash Point Method: TCC
Lower Explosive Limit: 1.0
Upper Explosive Limit: 5.0
Autoignition Temperature: No data
Extinguishing Media: USE CARBON DIOXIDE, FOAM, OR DRY CHEMICAL. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL.
Special Fire Fighting Procedures: WEAR PPE AND NIOSH-APPROVED SCBA WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE AND APPROPRIATE TURN-OUT GEAR.
Unusual Fire And Explosion Hazards: VAPOR IS HEAVIER THAN AIR AND CAN ACCUMULATE IN LOW AREAS.

Reactivity Data

Stable: YES
Conditions To Avoid (Stability): HEAT, OPEN FLAMES, IGNITION SOURCES,
Materials To Avoid: STRONG OXIDIZING AGENTS
Hazardous Decomposition Products: CO, CO₂, VARIOUS HYDROCARBONS
Hazardous Polymerization Occur: NO

Health Hazard Data

Route Of Entry - Inhalation: BREATHING SMALL AMOUNTS DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. BREATHING LARGE AMOUNTS MAY BE HARMFUL TO RESPIRATORY TRACT.

Route Of Entry - Skin/Eyes: MAY CAUSE MILD SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE DRYING. SYMPTOMS MAY INCLUDE REDNESS, BURNING, DRYING, AND CRACKING OF SKIN. MAY CAUSE MILD EYE IRRITATION. SYMPTOMS INCLUDE STINGING, TEARING, AND REDNESS.

Route Of Entry - Ingestion: SWALLOWING SMALL AMOUNTS OF MATERIAL IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. SWALLOWING LARGE AMOUNTS MAY BE HARMFUL.

Carcinogenicity: NONE

Signs and Symptoms of Overexposure: STOMACH OR INTESTINAL UPSET, IRRITATION OF NOSE, THROAT, OR AIRWAYS, DIZZINESS, DROWSINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, OR UNCONSCIOUSNESS.

EMERGENCY/FIRST AID PROCEDURES

Inhalation: IMMEDIATELY MOVE TO FRESH AIR. SEEK MEDICAL ATTENTION. IF PERSON IS NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN.

Skin: REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH SOAP AND WATER. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION. LAUNDRER CLOTHES BEFORE REUSE.

Eyes: MOVE INDIVIDUAL TO FRESH AIR. FLUSH EYES WITH WATER. SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.

Ingestion: SEEK MEDICAL ATTENTION. IF PERSON IS DROWSY OR UNCONSCIOUS, DO NOT GIVE ANYTHING BY MOUTH. PLACE PERSON ON THEIR LEFT SIDE WITH THE HEAD DOWN. CONTACT PHYSICIAN OR POISON CONTROL CENTER FOR ADVICE ON WHETHER TO INDUCE VOMITING.

=====
Precautions for Safe Handling and Use
=====

Steps If Material is Released or Spilled: IF SPILL IS SMALL, ABSORB LIQUID WITH PROPER ABSORBENT. IF SPILL IS LARGE, ELIMINATE ALL IGNITION SOURCES. STOP SPILL AT THE SOURCE. PREVENT SPILL FROM ENTERING THE ENVIRONMENT OR SPREADING. PUMP OR VACUUM PRODUCT TO CLEAN CONTAINERS FOR RECOVERY. ABSORB UNRECOVERABLE PRODUCT. NOTIFY PROPER AUTHORITIES IF SPILL REACHES THE ENVIRONMENT.

Waste Disposal Method: DISPOSE OF MATERIAL IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

Precautions-Handling/Storing: EMPTY CONTAINERS ARE HAZARDOUS AND CONTAIN RESIDUE. OBSERVE HAZARD PRECAUTIONS. 5 GALLON PAILS OR LARGER CONTAINERS SHOULD BE GROUNDED/BONDED WHEN TRANSFERRED.

Control Measures

Respiratory Protection: NIOSH/MSHA AIR SUPPLIED RESPIRATORS ARE RECOMMENDED UNDER CONDITIONS WHERE EXPOSURES MAY BE HIGH OR PROLONGED. ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

Ventilation: MECHANICAL (GENERAL OR LOCAL EXHAUST) RECOMMENDED.

Protective Gloves: CHEMICAL RESISTANT GLOVES.

Eye Protection: CHEMICAL SPLASH GOGGLES OR GLASSES.

Other Protective Equipment: IMPERVIOUS CLOTHES, BOOTS, ETC. EMERGENCY EYEWASH AND SHOWER SHOULD BE NEARBY.

Label Data

Label Required: YES-IF SHIPPED IN CONTAINER(S)

Common Name: SPECIFICATION USED OIL FUEL

DOT Proper Shipping Name: Combustible Liquid, n.o.s., Combustible Liquid, NA1993, PG III

Special Hazard Precautions: IRRITATING TO EYES AND SKIN; GI IRRITATION IF INGESTED; HARMFUL TO RESPIRATORY SYSTEM IF INHALED AT HIGH OR PROLONGED LEVELS.

Label Name: YOUR COMPANY

Label Street: YOUR ADDRESS

Label City: YOUR CITY

Label State: YOUR STATE

Label Zip Code: YOUR ZIP

Label Country: US

Label Emergency Number: YOUR PHONE

Disclaimer

The above information is, to the best of our knowledge, current, accurate, and complete based on information reasonably available to us as of the date of the preparation of this form. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his or her own use of the product described herein. Since the actual use by others is beyond our control, no guarantees, expressed or implied, are made by us as to the effects of such use or on the safety or toxicity of this product. Nor do we assume any liability arising out of use by others of this product. Nor is the information herein to be construed as absolutely complete, since additional information may be necessary or desirable when exceptional conditions or circumstances exist or because of applicable laws or regulations.

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19



SECTION 1. IDENTIFICATION

Product name : DIESEL FUEL

Synonyms : Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed.

Product code : 102907, 102762, 102763, 102755, 102302, 102744, 101801, 100678, 100677, 101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994

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

Emergency telephone number
Suncor Energy: +1 403-296-3000;
Canutec Transportation: 1-888-226-8832 (toll-free) or 613-996-6666;
Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.

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

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes)
Odour	Mild petroleum oil like.

GHS Classification

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

- Flammable liquids : Category 3
- Acute toxicity (Inhalation) : Category 4
- Skin irritation : Category 2
- Carcinogenicity : Category 2
- Specific target organ toxicity - single exposure : Category 3 (Central nervous system)
- Specific target organ toxicity - repeated exposure : Category 2 (Liver, thymus, Bone)
- Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Harmful if inhaled.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER/doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19



IF exposed or concerned: Get medical advice/ attention.
Do NOT induce vomiting.
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry : Eye contact
Ingestion
Inhalation
Skin contact

Aggravated Medical Condition : None known.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration
Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified	64742-81-0	70 - 100 %
Kerosine (petroleum); Straight run kerosine	8008-20-6	
Fuels, diesel; Gasoil -unspecified	68334-30-5	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 30 %
Fatty acids, C16-18 and C18-unsatd., Me esters	67762-38-3	0 - 20 %

All concentrations are in percent by weight.

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.

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

- Wash 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 : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.
- Most important symptoms and effects, both acute and delayed : Harmful if inhaled.
Respiratory, skin and eye irritation; nausea; cancer.
- Notes to physician : Treat symptomatically.
For specialist advice physicians should contact the Poisons Information Service.
-

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)
Water fog.
Foam
- Unsuitable extinguishing media : Do NOT use water jet.
- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides (CO, CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), 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 for firefighting if necessary.
-

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.
Material can create slippery conditions.

- Environmental precautions : If the product contaminates rivers and lakes or drains inform

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19



respective authorities.

Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.
Remove all sources of ignition.
Soak up with inert absorbent material.
Non-sparking tools should be used.
Ensure adequate ventilation.
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.
Use only with adequate ventilation.
In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

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.
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 exposure)	Control parameters / Permissible concentration	Basis
Kerosine (petroleum), hydrodesulfurized; Kerosine - unspecified	64742-81-0	TWA	200 mg/m ³ (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m ³ (total hydrocarbon vapor)	CA AB OEL
		TWA	525 mg/m ³	CA ON OEL
		TWA	200 mg/m ³ (As total hydrocarbon vapour)	ACGIH
		TWA	200 mg/m ³ (total hydrocarbon	ACGIH

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

			vapor)	
Kerosine (petroleum); Straight run kerosine	8008-20-6	TWA	200 mg/m3 (total hydrocarbon vapor)	CA BC OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
Fuels, diesel; Gasoil - unspecified	68334-30-5	TWA	100 mg/m3 (total hydrocarbons)	CA AB OEL
		TWA (Vapour and inhalable aerosols)	100 mg/m3 (total hydrocarbons)	CA BC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m3 (total hydrocarbons)	ACGIH

Engineering measures : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.
Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Concentration in air determines protection needed.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. 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 : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). 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.

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

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 problems.
Skin and body protection	: 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.
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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Bright oily liquid.
Colour	: Clear to yellow (This product may be dyed red for taxation purposes)
Odour	: Mild petroleum oil like.
Odour Threshold	: No data available
pH	: No data available
Melting point	: No data available
Boiling point/boiling range	: 150 - 371 °C (302 - 700 °F)
decomposition temperature	No data available
Flash point	: > 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	: 225 °C (437 °F)
Evaporation rate	: No data available
Flammability	: 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. This product can accumulate static charge and ignite.
Upper explosion limit	: 6 %(V)
Lower explosion limit	: 0.7 %(V)
Vapour pressure	: 7.5 mmHg (20 °C / 68 °F)

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

Relative vapour density	: 4.5
Relative density	: 0.8 - 0.88
Solubility(ies)	
Water solubility	: insoluble
Partition coefficient: n-octanol/water	: No data available
Viscosity	
Viscosity, kinematic	: 1.3 - 4.1 cSt (40 °C / 104 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release CO _x , NO _x , SO _x , smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact

Acute toxicity

Product:

Acute oral toxicity	: Remarks: No data available
Acute inhalation toxicity	: Acute toxicity estimate: 1.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: Remarks: No data available

SAFETY DATA SHEET

DIESEL FUEL

000003000395

Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19



Components:

Kerosine (petroleum), hydrodesulfurized; Kerosine -unspecified:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l
Exposure time: 4 hrs
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Kerosine (petroleum); Straight run kerosine:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg,

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg,

Fuels, diesel; Gasoil -unspecified:

Acute oral toxicity : LD50 (Rat): 7,500 mg/kg,

Acute dermal toxicity : LD50 (Mouse): 24,500 mg/kg,

Skin corrosion/irritation

Product:

Remarks: Causes skin irritation.

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

Product:

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

Germ cell mutagenicity

Product:

Genotoxicity in vitro Remarks: No data available

Genotoxicity in vivo Remarks: No data available

Carcinogenicity

Product:

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

Carcinogenicity - Assessment

Suspected of causing cancer.

Reproductive toxicity

Product:

Effects on fertility

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

STOT - single exposure

Product:

Remarks: May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

Remarks: May cause damage to organs through prolonged or repeated exposure.

No data available

Aspiration toxicity

Product:

May be fatal if swallowed and enters airways.

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

SAFETY DATA SHEET

DIESEL FUEL

000003000395



Version 5.0

Revision Date 2018/12/19

Print Date 2018/12/19

Mobility in soil

No data available

Other adverse effects

No data available

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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 1202
Proper shipping name : Diesel fuel
Class : 3
Packing group : III
Labels : Class 3 - Flammable Liquid
Packing instruction (cargo aircraft) : 366

IMDG-Code

UN number : UN 1202
Proper shipping name : DIESEL FUEL

Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

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

National Regulations

TDG

UN number : UN 1202
Proper shipping name : DIESEL FUEL

Class : 3
Packing group : III

Universal Antifreeze/Coolant

SECTION 1. IDENTIFICATION

Product Identifier	Universal Antifreeze/Coolant
Other Means of Identification	16-242, 16-244, 16-245, 26-248, 26-248-1000, 26-248PC, 35-249FS, 36-241SO, 36-244APREXP, 36-244AX, 36-244AXEXP, 36-244C, 36-244CHR, 36-244CQ, 36-244E, 36-244FEDEXP, 36-244FS, 36-244PC, 36-244PM, 36-244PMEXP, 36-244PPEXP, 36-244PROFEXP, 36-244RAD, 36-244SO, 36-244SP, 36-244SPROEXP, 36-244STP, 36-244STPEXP, 36-244TH, 36-244TOT, 36-244U/N, 36-244UFA, 36-244UG, 36-245UFA, 36-249AXEXP, 36-249CHR, 36-249E, 36-249SPROEXP, 36-254SO, 86-244-PRO, 86-244SY, 86-249, 86-249-1000, BULK-16245, BULK-86245, BULK-TRUCK26429
Recommended Use	Please refer to Product label.
Restrictions on Use	None known.
Manufacturer / Supplier	Recochem Inc., 850 Montee de Liesse, Montreal, QC, H4T 1P4, Compliance and Regulatory Department, 905-878-5544, www.recochem.com
Emergency Phone No.	CANUTEC, 613-996-6666, 24 Hours
SDS No.	1552

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) - Category 4; Reproductive Toxicity - Category 1B; Specific target organ toxicity (repeated exposure) - Category 2

GHS Label Elements



Signal Word:
Danger

Hazard Statement(s):

H302	Harmful if swallowed.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs (kidneys) through prolonged or repeated exposure following skin contact and/or if swallowed.

Prevention:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe fume, mist, vapours, spray.
P264	Wash hands and skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Product Identifier:	Universal Antifreeze/Coolant
SDS No.:	1552
Date of Preparation:	October 01, 2015

Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P330 Rinse mouth.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.

Storage:
Store in a well ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Note:
0.1-1
% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Ethylene glycol	107-21-1	60-100	
Sodium Salt of Boron Acid	CBI*		

Notes

The specific chemical identity and/or exact percentage of composition (concentration) has been withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Call a Poison Centre or doctor if you feel unwell or are concerned.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. Call a Poison Centre or doctor if you feel unwell or are concerned. Clean clothing, shoes and leather goods.

Eye Contact

If eye irritation persists, get medical advice/attention. Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open.

Ingestion

Rinse mouth with water. Call a Poison Centre or doctor if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

If swallowed: There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Product Identifier: Universal Antifreeze/Coolant
SDS No.: 1552
Date of Preparation: October 01, 2015

Immediate Medical Attention and Special Treatment

Target Organs

Digestive system, nervous system, heart, digestive system, kidneys, skin.

Special Instructions

The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, central nervous system depression and kidney injury. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. Treatment with ethanol to inhibit the metabolism of glycol to oxalate. Early administration of ethanol may counter the toxic effects of ethylene glycol (cardiopulmonary effects attributed to metabolic acidosis and renal damage).

Hemodialysis or peritoneal dialysis have been of benefit. Pre-existing respiratory and skin disorders may be aggravated by over-exposure to this product. Treat symptomatically and supportively.

Medical Conditions Aggravated by Exposure

Dermatitis.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder or appropriate foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

Can ignite if strongly heated.

In a fire, the following hazardous materials may be generated: irritating chemicals.

Special Protective Equipment and Precautions for Fire-fighters

Review Section 6 (Accidental Release Measures) for important information on responding to leaks/spills.

See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any

Product Identifier: Universal Antifreeze/Coolant

SDS No.: 1552

Date of Preparation: October 01, 2015

Page 03 of 08

other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for Safe Storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Ethylene glycol	10 mg/m3	100 mg/m3	Not established	50 ppm		
Sodium Salt of Boron Acid	Not established	Not established	Not established	Not established		

Appropriate Engineering Controls

The hazard potential of this product is relatively low. General ventilation is usually adequate. Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Nitrile rubber.

Respiratory Protection

Not normally required if product is used as directed. For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Clear green liquid.
Odour	Not available
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	-13 °C (9 °F) (Ethylene glycol) (melting); -13 °C (9 °F) (Ethylene glycol) (freezing)
Initial Boiling Point/Range	197 °C (387 °F)
Flash Point	111 °C (232 °F) (closed cup) (Ethylene glycol)
Evaporation Rate	< 0.01
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	21.6 - 22.0% (Ethylene glycol) (upper); 3.2% (Ethylene glycol) (lower)
Vapour Pressure	0.090 mm Hg (0.012 kPa) at 20 °C (Ethylene glycol)
Vapour Density (air = 1)	2.14 (estimated)
Relative Density (water = 1)	1.12 - 1.15 at 20 °C (Ethylene glycol)

Product Identifier: Universal Antifreeze/Coolant

SDS No.: 1552

Date of Preparation: October 01, 2015

Solubility	Not available in water; Soluble in all proportions in ketones (e.g. acetone).
Partition Coefficient, n-Octanol/Water (Log Kow)	-1.36 at 20 °C (Ethylene glycol)
Auto-ignition Temperature	398 °C (748 °F) (Ethylene glycol)
Decomposition Temperature	Not available
Viscosity	18.86 mm ² /s at 20 °C (estimated) (kinematic); 21 mPa.s at 20 °C (estimated) (dynamic)
Other Information	
Physical State	Liquid
Molecular Weight	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

High temperatures. Open flames, sparks, static discharge, heat and other ignition sources. Temperatures above 111.0 °C (231.8 °F)

Incompatible Materials

Slightly reactive or incompatible with the following materials: oxidizing agents (e.g. peroxides), strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide).

Not corrosive to metals.

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Ethylene glycol	2725 mg/m ³ (rat) (4-hour exposure)	4700 mg/kg (rat)	9530 mg/kg (rabbit)
Sodium Salt of Boron Acid	Not available	Not available	Not available

LC50: Not applicable.

LD50 (oral): Not applicable.

LD50 (dermal): Not applicable.

Skin Corrosion/Irritation

May cause moderate or severe irritation based on information for closely related materials. Symptoms include pain, redness, and swelling.

Serious Eye Damage/Irritation

May cause serious eye irritation based on information for closely related materials. Symptoms include sore, red eyes, and tearing.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

At high concentrations vapour may cause lung injury, nose and throat irritation. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

Skin Absorption

At high concentrations may cause Symptoms may include redness, rash, swelling and itching.

Ingestion

Toxic, can cause death based on information for closely related materials. depression of the central nervous system, and effects on the heart and kidneys. In some cases, there may be delayed effects on the nervous system. There are 3 stages of effects, which can overlap. Early symptoms can include upset stomach, slurred speech, clumsiness, drowsiness, and convulsions. Second stage symptoms can include rapid heartbeat and breathing, bluish lips and skin, fluid in the lungs and heart failure. In the last stage, there can be kidney stones and kidney damage with lower back pain, and increased then decreased urine production. There may be delayed nervous system effects such as paralysis of the face, clumsiness, impaired hearing and blurred vision. Death can occur at any stage.

Aspiration Hazard

Not known to be an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

May cause dermatitis. Symptoms may include dry, red, cracked skin (dermatitis).

May cause Following skin contact and/or if swallowed: harmful effects on the kidneys.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Not known to be a skin sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Ethylene glycol	Not Listed	A4	Not Listed	Not Listed
Sodium Salt of Boron Acid	Not Listed	A4	Not Listed	Not Listed

Reproductive Toxicity

Development of Offspring

If swallowed: at high concentrations animal studies show effects on the offspring. Known to cause: decreased weight. Embryotoxic (late resorptions) teratogenic(external, soft tissue and skeletal defects) may harm the unborn child. (Sodium Salt of Boron Acid)

Sexual Function and Fertility

May cause effects on sexual function and/or fertility. (Sodium Salt of Boron Acid)

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Not known to be a mutagen.

Interactive Effects

No information was located.

Other Information

TOXIC SUBSTANCE: KEEP AWAY FROM ANIMALS AND SMALL CHILDREN.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Acute Aquatic Toxicity

Product Identifier: Universal Antifreeze/Coolant

SDS No.: 1552

Date of Preparation: October 01, 2015

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Ethylene glycol	18500 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour; fresh water)	74000 mg/L (Daphnia magna (water flea); 24 hr)		
Sodium Salt of Boron Acid	Not available	Not available		

Chronic Aquatic Toxicity

Chemical Name	NOEC Fish	EC50 Fish	NOEC Crustacea	EC50 Crustacea
Ethylene glycol	39140 mg/L (Oncorhynchus mykiss (rainbow trout))		24000 mg/L (Daphnia magna (water flea))	
Sodium Salt of Boron Acid	Not available	Not available		

Persistence and Degradability

No information was located.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

No information was located.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14. TRANSPORT INFORMATION

Not regulated under Canadian TDG Regulations.

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID (Ethylene glycol)	9	III

Environmental Hazards Not applicable (Ethylene glycol)

Special Precautions for User Please note: In single containers of 5000 lbs capacity or less this product is exempt from DOT regulations (non regulated). Does not require label or placards. Regulated Quantity (RQ)= 5000 lbs (2268 kg) (as ethylene glycol) For bulk shipments equal to or greater than Regulated Quantity (RQ), please adhere to classification as outlined in DOT Classification section.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Product Identifier: Universal Antifreeze/Coolant

SDS No.: 1552

Date of Preparation: October 01, 2015

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL/NDSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Additional USA Regulatory Lists

California Proposition 65:

WARNING: This product contains chemicals known to the State of California to cause birth defects.

WARNING: This product contains chemicals known to the State of California to cause Reproductive Toxicity.

SECTION 16. OTHER INFORMATION

SDS Prepared By Compliance and Regulatory Department

Phone No. 905-878-5544

Date of Preparation October 01, 2015

Additional Information We are committed to uphold the Industry Consumer Ingredient Communication Voluntary Initiative.

Please send us your request by visiting our website at www.recochem.com.

Ingredients present (intentionally added ingredients) at a concentration of greater than one percent (1%) shall be listed in descending order of predominance. Ingredients present at a concentration of not more than one percent shall be listed but may be disclosed without respect to order of predominance.

Disclaimer

Notice to reader: 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 the accuracy or 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.

Product Identifier: Universal Antifreeze/Coolant

SDS No.: 1552

Page 08 of 08

Date of Preparation: October 01, 2015