FACILITY RESPONSE PLAN

PHMSA Plan Sequence #0319

For

KIANTONE PIPELINE CORPORATION

P.O. Box 129
550 Meyer Road
West Seneca, New York 14224

(814) 723-1201 Pipeline Emergency (24hrs)
(866) 755-6022 Toll Free (24hrs)
(716) 675-2767 Business Hours
(814) 723-1500 Corporate 24-Hour Security

Last Date of Plan Revision: 4/30/14

TABLE OF CONTENTS

FACILITY RESPONSE PLAN
Kiantone Pipeline Corporation
PHMSA Plan Sequence #0319

INTRODUCTION AND PLAN CONTENT

This plan has been prepared to comply with the Oil Pollution Act of 1990 (OPA 90). It was drafted following the outline in Appendix A to 49CFR 194 - Guidelines for the Preparation of Response Plans. This plan carries PHMSA plan tracking Number 0319.

Questions regarding the content of this plan should be directed to Dan Sobina, Regulatory Compliance Manager at (814) 726-4846 or dansobina@urc.com.

This plan is written in English. No responders to this plan only speak a language other than English.

NATIONAL CONTINGENCY PLAN (NCP)

Kiantone Pipeline Corporation (Kiantone) certifies that the NCP was reviewed and it is Kiantone's intent that this plan be consistent with it. In particular, Section 2 addresses notification of the National Response Center; Section 4 describes coordination with the Federal On-Scene Coordinator. This section also includes procedures for approval of dispersants and waste disposal methods and a statement that sinking agents will be avoided as a cleanup technique.

AREA CONTINGENCY PLAN (ACP)

Kiantone certifies that applicable ACPs were reviewed and it is Kiantone's intent that this plan be consistent with them. The applicable ACPs are:

- Area Contingency Plan for Oil Discharges and Hazardous Substance Releases for Inland Zone of New York State
- Region III Inland Area Committee, Inland Area Contingency Plan, Volumes 1 & 2.
- Eastern Great Lakes Area Contingency Plan

Environmentally sensitive areas are discussed in Section 9. Lists of Environmentally Sensitive Areas are included in Appendix B.

CORE PLAN / RESPONSE ZONE

This plan applies to all Kiantone operated pipelines and facilities as follows:

- West Seneca Terminal – West Seneca, NY
- Gowanda Booster Station – Gowanda, NY
- Cobham Park Tank Farm – Warren, PA
- 12" Crude Oil Pipeline – West Seneca, NY to Warren, PA (78.3 mi.)
- #2 Farm Pipeline (6" diesel fuel) – Warren, PA (3.5 mi.)
- #3 Farm Pipeline (6" FCC Charge/LCO) – Warren, PA (3.5 mi.)

Due to the relatively small size of these pipelines and facilities, Kiantone has only one response zone that covers the corridor of the 12" crude oil pipeline, which includes all Kiantone facilities and pipelines. Therefore, the core plan and response zone appendix information summaries are combined in Section 1.

In addition, with the advancement of the PHMSA's National Pipeline Mapping System (NPMS) and through the risk modeling associated with Kiantone's integrity management program, numerous High Consequence Areas (HCAs) have been identified that could be affected by a release from this pipeline. Response efforts are coordinated within Kiantone's response zone to ensure identified HCAs receive primary protection in the event of a release.

SECTION 1: INFORMATION SUMMARY

A. Operator Name, Address, Location and Telephone Numbers

Operator Name:		Kiantone Pipeline
Physical address of the Operator:		Kiantone Pipeline Corp. 550 Meyer Road West Seneca, NY 14224
Mailing Address:		Kiantone Pipeline Corp. P. O. Box 780 Warren, PA 16365
Telephone:	Pipeline Operations (24 hours):	(814) 723-1201 or (866) 755-6022 (toll free)
	West Seneca Terminal (office):	(716) 675-2767
	Gowanda Booster Station:	(716) 257-9185
	Corporate (24 hours):	(814) 723-1500
Fax:	West Seneca	(716) 675-2741

B. Qualified Individuals

Name:	James Hare
Office:	(716) 675-2767
Cell	(716) 472-5073
Home:	(b) (6)
24 Hr. Emergency Telephone:	(814) 723-1201

Alternate Qualified Individual

Name:	Larren Dosser
Office:	(814) 726-4718
Cell:	(716) 553-6683
Home:	(b) (6)
24 Hr. Emergency Telephone:	(814) 723-1500

C. Description of Response Zone

A release in the response zone for the Kiantone Pipeline could cause significant and substantial harm in the following counties and states:

Counties:	Erie County and Cattaraugus County, New York Warren County, Pennsylvania

D. List of Line Sections

The Location Maps in Appendix A show the location of Kiantone's pipelines and facilities, including line sections (sections between line valves).

The 12-inch crude pipeline transverses from north to south through the Towns of West Seneca, Orchard Park, Hamburg, Boston, Eden, North Collins, and Collins in Erie County; and Towns of Persia, New Albion, Leon, Conewango, Randolph, and South Valley in Cattaraugus County all in the State of New York. The pipeline continues in a north to south direction for 13 miles through Elk, Pine Grove, and Glade Townships of Warren County, Pennsylvania. The pipeline continues into Glade Township to United Refining Company's (URC) Cobham Park Road bulk storage facility. The pipeline then runs with the #2 and #3 Farm Lines from the Cobham Park Tank Farm to United Refining Company's Warren refinery.

There are (b) (7)(F) The following table shows the valve number, its location (milepost or MP), and the response group responsible for operating the valve in an emergency:

Valve	Location	First Response Group
(b) (7)(F)		West Seneca Terminal
		West Seneca Terminal
		West Seneca Terminal
		West Seneca Terminal
	s	West Seneca Terminal
		Booster Station
		Booster Station
		Booster Station
		Booster Station
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House
		URC Pump House

E. Basis of Determination of Significant and Substantial Harm

The Kiantone Pipeline's 12-inch crude line has the potential for significant and substantial harm to the environment because it meets the following criteria, as defined in 49CFR 194.103(c):

- has an outside nominal diameter greater than 6 5/8 inches
- has a length greater than 10 miles

- is located within a 5-mile radius of potentially affected public drinking water intakes
- is located within 1-mile radius of potentially affected environmentally sensitive areas

The #2 and #3 Farm Lines both have outside diameters of 6.625 and therefore are not expected to have the potential to cause significant or substantial harm.

F. Type of Oil and Volume of Worst-Case Discharge

Kiantone's 12-inch pipeline carries crude oil only. The #2 Farm Line is a 6-inch pipeline that carries Ultra Low Sulfur Diesel (ULSD) fuel only. The #3 Farm line is also a 6-inch pipeline that carries either FCC Charge or Light Cycle Oil (LCO.) Products carried by the #2 and #3 Farm Lines are all considered to be Refined and/or Petroleum Products (non-HVL.) All products are Oil Group III except LCO, which is Oil Group IV.

The Worst-Case discharge (WCD) for Oil Group III is (b) (7)(F) s. The discharge is calculated as crude oil from Kiantone's largest aboveground (b) (7)(F) located at its (b) (7)(F) . (b) (7)(F) . See Section 9(H) for WCD calculations.

G. Certification of Response Capability to a Worst-Case Discharge

In addition to the employees and equipment of Kiantone Pipeline and its parent company, United Refining Company, the necessary private personnel and equipment to respond to a worst-case discharge have been secured through Emergency Spill Agreements with New York Environmental Technologies, Inc. (OSRO#196) and Weavertown Environmental Group (OSRO#075). Agreements are provided in Appendix F.

24-hour contact information for NYETECH and other organizations available to respond in the event of a release are as follows:

New York Environmental Technologies, Inc. (NYETECH)	(800) 807-7455
EP&S of Vermont	(866) 597-0001
OP-TECH Environmental Services, Inc.	(716) 873-7680
National Vacuum Corporation (Niagara Falls, NY)	(716) 773-1167
Weavertown Environmental Group	(800) 746-4850
McCutcheon Enterprises, Inc.	(724) 568-3623
Union Concrete (heavy equipment)	(716) 822-5755
(Bob Hill)	(716) 864-0261

SECTION 2: NOTIFICATION PROCEDURES

A. Notification Requirements for Each Area of Operation

The operator shall notify the Qualified Individual (QI). The QI is capable of being contacted on a 24-hour basis. Initial notification should be made to the QI listed below.

In the event of a discharge or substantial threat of a discharge of oil the Responsible Person/Qualified Individual is responsible for contacting the applicable government agencies and clean-up contractors.

Qualified Individuals
The primary QI for this facility is James Hare. During business hours call (716) 675-2767. After business hours, call (716) 472-5073 (C), (b) (6) or (814) 723-1201 (24-hour response).

In the event James Hare cannot be contacted, call Larren Dosser, the Alternate QI, at (716) 553-6683 (C) or contact Scott Hull at (716) 553-5061. In addition, (814) 723-1201 can be called 24 hours.

Other alternate QIs which are available at (814) 723-1500 for 24 hour response are: Tony Gigliotti (Fire & Safety), Tim Ruth (Environmental), or Dan Sobina (Environmental.)

It is the responsibility of the QI to delegate specific responsibilities to a Spill Management Team that is comprised of Kiantone Pipeline Corporation, United Refining Company personnel and other qualified personnel from cleanup contractors or various agencies, depending on size and extent of the spill. A Unified Command Structure/ Incident Command System, as discussed in Section 4, will be implemented.

B. Required Notification Checklist (Order of Priority)

In the event of an oil release, the operator is to first notify the QI. Outside agencies are notified in the following order as required in Chapter 2 of Kiantone's O&M manual:

(1) Oil Spill Response Organization (see Section 2C(3) below)
(2) National Response Center (within 2 hours.)
(3) U. S. Coast Guard (if the release could affect a navigable waterway – conduit to navigable waterway is Cattaraugus Creek)
(4) State environmental agency - New York Department of Environmental Conservation and/ or Pennsylvania Department of Environmental Protection
(5) Local Emergency Planning Committee
(6) Seneca Nation of Indians (for releases reaching Cattaraugus Creek in New York)

Phone numbers are shown in Section 2C(4) below.

C. Persons and Organizations to be Notified

It is the responsibility of the QI to notify the appropriate facility and corporate response personnel, Oil Spill Response Organizations and Federal, State and local agencies, and to implement the Incident Command System consistent with the Area Contingency Plans. The following individuals or organizations shall be notified and mobilized as appropriate:

(1) Facility Response Personnel

The following persons are facility personnel that are familiar with operations and have been trained in containment and cleanup procedures:

James Hare, Pipeline Manager (Qualified Individual)	(716) 675-2767 (work) or (716) 472-5073 (cell) or (b) (6))
Larren Dosser, Manager of Terminals & Pipelines (Alt. Qualified individual)	(716) 553-6683 (cell) or (b) (6)
Scott Hull, Assistant Pipeline Manager	(716) 675-2767 (work) or (716) 553-5061 (cell)
Tony Gioia, Pipeline Field Mgr.	(716) 257-9185 (work) or (716) 713-2020 (cell)
Jamie Hare, Warren Tank Farm Field Mgr.	(814) 726-4738 (work) or (716) 720-0241 (cell)
Kelly Smith, URC Oil Movements Mgr.	(814) 726-4808 (work) or (814) 688-1362 (cell)
KPL Pipeline Control Center (operating personnel listed in Section 5)	(814) 723-1201 (24 hr)
URC Pump House Operator (Tank Farm-Refinery)	(814) 726-4629

(2) Spill Management Team

In addition to the facility response personnel listed above, the following persons are management employees of United Refining Company (URC), the parent company of Kiantone Pipeline Corporation, and would be activated by the QI to participate in the Spill Management Team (SMT) and Incident Command System (ICS) consistent with the ACPs. Probable responsibilities of the listed members of the SMT in the ICS are indicated. All personnel listed below can also be reached 24 hours through URC's corporate security at (814) 723-1500.

Tony Gigliotti, Safety Director (Safety Officer)	(814) 726-4802 (work) (814) 688-8048 (cell)
Joe McFadden, Fire Marshall (Alt. Safety Officer)	(814) 726-4807 (work) (814) 688-1367 (cell)
Tim Ruth, Environmental Compliance Officer (Liaison Officer)	(814) 726-4609 (work) (814) 688-1383 (cell)
Dan Sobina, Compliance Manager (Environmental Assessment)	(814) 726-4846 (work) (814) 688-1387 (cell)
Keith Anderson, Assist. Security Director (Security/Site Manager)	(814) 726-4615 (work) (814) 688-1313 (cell)
Chuck Gern, Jr., Gen. Maintenance Superintendent (Resource Planning)	(814) 726-4784 (work) (814) 688-1576 (cell)
Rob Kaemmerer, V.P. Human Resources (Information Officer)	(814) 726-4742 (work) (814) 688-1333 (cell)
Rick Brant, Tonawanda Terminal Mgr. (Logistics Chief)	(716) 874-6650 (work) (716) 812-9398 (cell)
Rick Curren, V.P. Purchasing (Finance/Admin. Chief)	(814) 726-4652 (work)

A sample ICS with all designated positions is listed in Appendix D.

In addition to the SMT, other Kiantone management personnel not identified in this plan including OSRO supervisors and appropriate government agency representatives, will be utilized to perform the various functions under the Incident Command System.

(3) Oil Spill Response Organizations (OSROs)

The OSROs below are listed in the order they should be called. One or more will be notified according to the severity of a release.

NYETECH (OSRO#196) – under contract (800) 807-7455
230 McKee Road
Rochester, NY 14611

EP&S of Vermont (OSRO#054) (866) 597-0001
2775 Broadway, Suite 250
Cheektowaga, NY 14227

OP-TECH Environmental Services, Inc. 108 Sawyer Avenue Tonawanda, NY 14150	(716) 873-7680
National Vacuum Corporation 408 47th Street Niagara Falls, NY 14304	(716) 773-1167
Weavertown Environmental Group – (OSRO #75) 201 South Johnson Road (under contract) Houston, PA 15342 (Local offices – Hamburg, NY and Franklin, PA)	(800) 746-4850
McCutcheon Enterprises, Inc. 250 Park Road Apollo, PA 15613-8730	(724) 568-3623

The OSROs listed above are available 24 hours at one of the numbers listed. Response resources available for each OSRO is included in Appendix C. Other organizations of assistance include:

Union Concrete (heavy equipment) (Bob Hill - cell) P.O. Box 410 West Seneca, NY 14224	(716) 822-5755 or (716) 864-0261
Enbridge Energy (BERG Member) (Pipeline Emergency Only) P.O. Box 190 Tonawanda, NY 14151	(716) 692-0091

(4) Federal, State, and Local Agencies (to be called in the following order):

National Response Center (must call within 2 hours)	(800) 424-8802
U.S. Coast Guard, Captain of the Port Buffalo, NY	(716) 843-9580 or (716) 843-9504
New York Department of Environmental Conservation Spill Hotline	(800) 457-7362
Pennsylvania Dept. of Environmental Protection	(800) 373-3398
Local Emergency Planning Committees Erie County Disaster Preparedness Division (*after hours*)	 (716) 858-6262 (716) 858-6578

Cattaraugus County Sheriff	(if applicable)	(716) 938-9191
Warren County, PA LEPC (after hours)	(if applicable)	(814) 723-7553 911

D. Procedures for Notifying Qualified Individual

The person discovering the spill will promptly notify the QI per the procedures outlined in Section 2A above.

At a minimum, the following information should be provided to the QI (do not delay contacting the QI if there is a delay in obtaining any of the listed items):

- Type of product discharged
- Approximate amount of discharge
- Specific location of the discharge
- Whether or not the product has entered a watercourse or sewer
- Whether or not the product has left the property.
- Whether or not the discharge has been stopped.
- Approximate time of the discharge
- Are there any apparent health or safety risks (are hydrocarbon vapors present, how strong, anyone injured, etc.)

Follow through with orders provided by the Qualified Individual or Alternate Qualified Individual.

E. Primary and Secondary Communication Methods for Notification

Operations from West Seneca to the Cobham Park Tank Farm are monitored from the Pipeline Control Center located in West Seneca, NY. Local operations between the Cobham Park Tank Farm and United's refinery in Warren are monitored by the Pump House operators in Warren, PA.

All management personnel carry cellular phones. Two-way radios are maintained at both the West Seneca terminal and the Warren Refinery.

In the event of a discharge, the QI will appoint an Information Officer to be in charge of maintaining communications with cleanup operations.

F. Initial and Follow-up Notification Information

(1) Initial Notification - All notifications will include the following information:

- Name of Pipeline (Kiantone);

- Time and date of discharge;
- Location of discharge;
- Type of oil;
- Reason for discharge (equipment failure, external damage, etc,);
- Estimated volume of discharge;
- Weather conditions at the scene;
- Actions planned and being taken at the scene.

(2) Follow-Up Notification

Notified agencies and individuals will be provided follow-up information as requested. The QI will provide the follow-up information at an agreed upon frequency. In addition, any pipeline incident will be filed online at http://pipelineonlinereporting.phmsa.dot.gov/ within 30 days.

SECTION 3: SPILL DETECTION AND ON-SCENE SPILL MITIGATION PROCEDURES

A. Methods of Initial Discharge Detection

(1) Pipeline Operators

Operators monitor pipeline operations 24-hours per day. A sudden drop in pipeline pressure will indicate a possible leak. Abnormal operations described later in this section should also be considered as indicators of a potential leak.

In addition to 24-hour monitoring by operators in the pipeline control room, there are part-time operators at the West Seneca Terminal and the Broadway Booster Station and additional operating personnel at the refinery in Warren, PA.

Kiantone has flow meters on most of the pipeline that enable at least hourly reconciliation of flow in and out of the pipeline. Flow data is electronically transmitted to the 24-hour operator manned pipeline control office at Warren, Pennsylvania.

(2) Public Notification

All road crossings are posted with a marker giving the phone number to be called in the event a leak is detected. In addition, regular distribution of pipeline information and emergency numbers is distributed to the Affected Public, Emergency Officials, and Excavators through Kiantone's Public Awareness Program.

(3) Patrols

The pipeline is flown weekly and driven periodically. Any abnormal conditions observed are reported to the Qualified Individual.

B. Procedures to Mitigate and Prevent Discharges

(1) Mitigation of Discharges

Kiantone operators at the West Seneca Terminal, the Broadway Pump Station, and the Warren Refinery are responsible for the following in the event of a discharge or significant threat of a discharge (listed in the priority they are to be carried out):

(i) Stop the Discharge of Oil

Any person not employed at the facility which observes a discharge or significant threat of discharge of oil should immediately report the situation to the Qualified Individual or Alternate Qualified Individual as described

in Section 2. Notification phone numbers are provided at road crossings and key areas along the pipeline.

Flow of oil into and out of the West Seneca, NY facility and into the Cobham Park Tank Farm is monitored at the Pipeline Control Center located onsite. Oil flow between the Cobham Park Tank Farm and refinery is monitored by the Pipeline Control Center and/or local operations in Warren. If necessary, the pipelines can be shutdown from either location.

There are (b) (7)(F) [redacted] e, which can be shut to prevent discharge (see Appendix A for Pipeline Map and Profile Drawing). The table in Section 1 shows the location (milepost and road crossing) for each valve. Also shown is the response group for each valve location. An individual from each response group can be reached 24-hours a day to respond to any valve within 20 minutes of notification regardless of weather conditions.

After all emergency shutdowns the Qualified Individual and/or Alternate Qualified Individual (see Section 2) must be immediately notified of the situation.

In the event of a small discharge of oil, steps should be taken to prevent oil from reaching a waterway or storm sewer using oil sorbent materials, soil, or any other non-reactive material available nearby.

(ii) Immediately notify the Qualified or Alternate Individual.

At a minimum provide the following information:

- Type of product discharged
- Approximate amount of discharge
- Specific location of the discharge
- Whether or not the product has entered a water drainageway or sewer
- Whether or not the product has left the property
- Whether or not the discharge been stopped.
- Approximate time of the discharge
- Are there any apparent health or safety risks (are hydrocarbon vapors present - how strong) (anyone injured).

Responsibilities and authority of the Qualified Individual are provided in Section 4.

(iii) Follow through with orders provided by the Qualified Individual or Alternate Qualified Individual.

(iv) Remain at the scene until assistance arrives.

(v) Attempt to prevent product from entering a waterway (without jeopardizing personal health or safety).

(vi) Do not contact the material if it is an unknown chemical.

(2) Prevention of Discharges (Abnormal Operations)

Abnormal operations of the pipeline are an indicator of a discharge or potential discharge and should be handled as such by pipeline operators. Procedures are in place in the Pipeline Operations Manual detailing potential effects and remedial actions to be taken for identified abnormal operations. The potential for a Worst-Case discharge should be considered when any abnormal operating condition exists. The following is a list of abnormal operations that have been identified:

- Keyboard Lockup
- Console Lockup
- Communication Failure
- Accumulator Reset
- Station Intruder Alarm
- Station Fire
- Pump Failure
- Meter Failure
- Unexpected Level Indication
- Sump Alarm
- Unusual Incoming Calls
- Electrical Power Failure
- Operation of Pipeline Bypassing Cobham Park Tank Farm
- Unintended Valve Closure
- Increase or Decrease of Pressure or Flow Rate Outside of Normal Operations Limits
- Operation of Any Safety Device

The Qualified Individual should be notified of any unsuccessful attempt by operators to remediate an abnormal operation or if a release is suspected.

C. List of Necessary Equipment (on land and water)

Appendix C includes lists of available response resources located at the facility and available through Oil Spill Response Organizations (OSROs) listed in Section 2. All of these organizations regularly perform equipment testing. Equipment listed in Appendix C, available through the following OSROs: NYETECH, EP&S of Vermont, OP-TECH Environmental Services, Weavertown Environmental Group, and McCutcheon Enterprises, Inc. is sufficient to handle a worst-case discharge. Equipment listed by other response contractors is strictly supplemental and is listed in this plan for reference only.

Oil recovered from a pipeline release will be placed in transports or temporary holding tanks, to be provided by the listed OSROs or other petroleum product transportation sources commonly used by Kiantone or the parent company United Refining Company, such as Crossett, Inc. of Warren, PA [(814)723-2200)]. Tanks or transports will be staged nearby the points of recovery. Recovered oil will be transported by way of tanker truck to Kiantone's oil storage terminal at West Seneca, NY or to United Refining Company's refinery at Warren, PA. Recovered oil will be reused.

D. Availability, Location and Contacts for Response Equipment

All equipment is available 24 hours a day. Location and contacts for response equipment are provided in Section 2C. There is sufficient equipment to handle a Worst-Case discharge.

E. Personnel Responsible for Equipment

As Oil Spill Response Organizations, response groups listed in Section 2 (NYETECH, EP&S of Vermont, OP-TECH Environmental Services, Weavertown Environmental Group and McCutcheon Enterprises, Inc.) properly maintain and test their equipment.

Kiantone/URC owns and maintains spill response equipment and materials identified in Appendix C. Some response equipment is maintained at West Seneca with additional response equipment kept in a trailer located at United Refining Company's Tonawanda Terminal, located approximately 25 minutes away from the pipeline at Tonawanda, New York. Kiantone's/URC's response equipment is exercised and maintained by the spill response team twice a year. Inspections and inventory are made monthly and logged in a journal kept at the facility. The functionality of the equipment is verified when deployed during the semi-annual exercises.

In addition, the following response teams are provided by United Refining Company's refinery in Warren, PA:

- Spill Response Team
- HAZMAT Team
- Fire Brigade
- Rescue Team

Response resources are listed in Appendix C.

SECTION 4: RESPONSE ACTIVITIES

A. Operations Personnel Responsibilities

See Section 3B(1).

B. Qualified Individual Responsibilities

Once on the scene, the Qualified Individual or Alternate Qualified Individual should assess the situation with respect to environmental impact, health, and safety considerations.

The Qualified Individual or Alternate Qualified Individual has the authority and responsibility to (listed in the priority they are to be carried out):

(1) Activate necessary alarm and communication systems.

(2) Activate facility personnel and equipment, the Spill Management Team and necessary Oil Spill Removal Organizations.

(3) Notify Federal, State, and local regulatory and emergency response agencies. **REQUIRED** notification includes:

National Response Center
U.S. Coast Guard (if discharge enters a navigable waterway)
NY DEC and/or PA DEP.

Phone numbers are provided in Section 2.

(4) Act as liaison with the Federal and State On-Scene Coordinators comprising the Unified Command Structure, also called the Incident Command System.

(5) Activate health and safety organizations such as (but not limited to) fire and police departments (phone numbers are provided in Section 2).

(6) Delegate specific responsibilities in establishment of the Incident Command System, such as:

- Command and control
- Public information
- Safety coordinator
- Liaison officer
- Spill operations
- Planning
- Logistics support
- Finance/Administration

- Others (as identified in the U.S. Coast Guard Incident Command System, Field Operations Guide)

Specific responsibilities will be delegated to each of the above areas consistent with the Incident Command System response management structure to facilitate cooperative participation by representatives from government agencies and the responsible party. This will allow all parties with jurisdictional and functional responsibility to work together to develop a common set of incident objectives and response strategies, share information, optimize use of response resources, and enhance the effectiveness and efficiency of the individual response organizations.

(7) Implement the Facility Response Plan.

Priority should be given to safeguarding human health and safety, and protecting environmentally sensitive areas. Environmentally sensitive areas and spill containment strategies are described in Section 9.

(8) Obligate funds required to carry out all required or directed oil response activities.

C. Procedures for Coordinating Actions and Activities (Unified Command/ICS)

All actions and activities conducted for Kiantone by the QI and Spill Management Team will be coordinated with the Unified Command Structure, also called the Incident Command System (ICS), responsible for monitoring and directing those actions.

The organization of an ICS is provided in Appendix D, Incident Command System. This ICS is consistent with the ICS for emergency spills described in the applicable area contingency plans and U. S. Coast Guard's Field Operations Guide. In addition to an organizational chart, responsibilities of each function of the response effort are described.

The QI will initiate the Incident Command System and will function as the Incident Commander until a Unified Command (UC) is established. A Unified Command comprised of a Federal On-scene Coordinator (FOSC), State On-scene Coordinator (SOSC) and Responsible Party Incident Commander (RPIC) will coordinate ongoing operation of the Incident Command System. Changes to the Incident Command System staff will be made through the Unified Command. The Incident Command System will work as follows:

(1) Establishment of Command Post:

The command post for all activities will be at the following location most strategic to the location of the incident:

- North End: West Seneca Terminal
- Middle: Gowanda Booster Station
- South End: United Refining Company

A list of all key Kiantone response personnel is maintained at each location. A Unified Command will be established in the event of a major release. The Unified Command, the Command Staff and Section Leaders of the ICS will be headquartered at the command post. The Command Staff will include a Safety Officer, Public Affairs Officer, Liaison Officer, and a Legal Officer. Sections of the ICS include Operations, Planning, Logistics and Finance.

The Liaison Officer operating at the command post under the UC will be responsible for interfacing between Kiantone's response organization, FOSC, SOSC, local responders, public safety organizations and other external organizations in an ICS.

Key response personnel will check for messages at the command post with an agreed upon frequency.

Communications equipment available at the UC post includes two or more standard phone lines and several two way radios. All Kiantone Spill Management Team members have access to cellular telephones to permit good communications between field personnel as well as with the UC. In addition, support through the Pipeline Control Center located at the West Seneca Terminal can provide additional standard telephones with separate lines and additional two-way radios having a range of approximately 2 miles. The Communications Branch, as needed, will procure additional two-way radios and cellular phones, to ensure that all parties involved in the response maintain effective communication.

In addition, the Communications Branch will document all communications systems used by responding personnel. This will include documentation of frequencies, channels, phone numbers, equipment numbers, and assigned personnel. The Communications Branch will designate frequencies and channels for each response unit and will be responsible for updating and distributing lists to all response personnel to ensure communication is effectively maintained throughout the response.

(2) Implementation of Response Actions

The Qualified Individual (QI) will have overall corporate responsibility for initiating and implementing response activities. The QI will keep Kiantone management informed of all response activities and progress until a Unified Command is established. Outside response organizations will either be called out immediately to the scene or put on stand-by. This decision to activate outside response resources will be made by the QI based on initial reports of the severity of the spill and threat to environmentally sensitive areas and human health and safety.

All response organizations activated by the QI will report directly to the QI until directed by the QI to do otherwise. All of their activities will be approved by the QI. Upon establishment of a Unified Command (UC) it will be the responsibility

of the UC to delegate responsibilities. The QI or other company representative will be a part of the UC as the RPIC.

The QI will coordinate Kiantone's efforts with government agencies, including local and State police departments, local fire departments, State environmental agencies, and the Federal and State On-Scene-Coordinators. Kiantone will maintain control over clean-up efforts unless ordered otherwise by a government agency with appropriate authority.

Response actions will give immediate attention and priority to High Consequence Areas (HCAs), identified on the National Pipeline Mapping System (NPMS.) NPMS is readily available to Kiantone and identified HCAs are regularly reviewed as part of Kiantone's integrity management program. In addition, spill containment strategies and other protective and cleanup considerations discussed in the Eastern Great Lakes Area Contingency Plan (EGLACP) and inland area contingency plans will be referenced as needed. The EGLACP provides specific strategies for each identified sensitive area. The inland area contingency plans provide listings of types of environmentally and economically sensitive areas, appropriate protection strategies, contacts and geographical information. Copies of the NPMS maps, the EGLACP, and the inland are contingency plan are maintained on file and are available for reference in the event of a spill.

Containment strategy within the response zone will include mainly the use of boom or other containment devices as appropriate, such as diversionary structures and underflow impoundments, in conjunction with recovery devices, such as skimmers or vacuum trucks, to prevent migration and dispersion of the spilled material and to keep it from entering sensitive areas. Protection measures described in the Area Contingency Plans, as well as, procedures provided in *Options For Minimizing Environmental Impacts Of Freshwater Spill Response Actions*, by API/NOAA have been reviewed and will be considered in planning response and removal actions.

Specific containment and recovery methods for identified sensitive areas are further discussed in Appendix G.

Kiantone ensures that spill containment strategies applicable to the response zone can be accomplished throughout the response zone within the Tier 1 response time of 12 hours.

(3) Documentation of Decisions, Activities, and Costs:

The Qualified Individual or the Unified Command, once established, will appoint a person within the Planning Section to be responsible for documenting all response decisions, activities and costs involved with the response action. The Planning Section will convey all cost information through the Liaison Officer to the Finance Section. A written record of all events of the response action will be maintained for at least three years.

(4) Response Time:

All response organizations identified in this plan can respond within the Tier I response time of 12 hours stated in 49CFR 194.115, including response to a Worst-Case discharge. Response time for each response organization is provided in Section 5(d).

(5) Cleanup and Disposal:

The following excerpt from 40CFR 300, the National Contingency Plan (NCP) describes the response strategy and considerations pertaining to recovery, the use of cleaning chemicals and disposal of debris:

40CFR 300.310 -- Containment, Countermeasures, Cleanup, and Disposal.

a) Defensive actions shall begin as soon as possible to prevent, minimize, or mitigate threat(s) to the public health or welfare of the United States or the environment. Actions may include but are not limited to: Analyzing water samples to determine the source and spread of the oil; controlling the source of discharge; measuring and sampling; source and spread control or salvage operations; placement of physical barriers to deter the spread of the oil and to protect natural resources and sensitive ecosystems; control of the water discharged from upstream impoundment; and the use of chemicals and other materials in accordance with subpart J of this part to restrain the spread of the oil and mitigate its effects. The Area Contingency Plan (ACP) prepared under §300.210(c) should be consulted for procedures to be followed for obtaining an expedited decision regarding the use of an *oil spill response and may describe what disposal requirements are mandatory or may not be waived by the OSC. ACP guidelines should address: the sampling, testing dispersants and other products listed on the NCP Product Schedule.*

b) As appropriate, actions shall be taken to recover the oil or mitigate its effects. Of the numerous chemical or physical methods that may be used, the chosen methods shall be the most consistent with protecting public health and welfare and the environment. Sinking agents shall not be used.

c) Oil and contaminated materials recovered in cleanup operations shall be disposed of in accordance with the Regional Contingency Plan, ACP, and any applicable laws, regulations, or requirements. RRT and Area Committee guidelines may identify the disposal options available during, and classifying of recovered oil and oiled debris; the segregation, temporary storage, and stockpiling of recovered oil and oiled debris; prior state disposal approvals and permits; and the routes; methods (e.g. recycle/reuse, on-site burning, incineration, land filling, etc.); and sites for the disposal of collected oil, oiled debris, and animal carcasses; and procedures for obtaining waivers, exemptions, or authorizations associated with handling or transporting waste materials. The ACPs may identify a hierarchy of preferences for disposal

alternatives, with recycling (reprocessing) being the most preferred, and other alternatives preferred based on priorities for health or the environment.

These guidelines will be followed during response actions.

Waste materials generated from a spill cleanup will be temporarily staged in roll-off containers or on a constructed impermeable and bermed containment area near the site of generation. Loads will then either be delivered to a licensed landfill or treatment facility or transported for temporary storage at Kiantone's West Seneca oil storage terminal or United Refining Company's refinery until approval is received from a licensed disposal/treatment facility. Enough storage space is available at both facilities for temporary storage of all contaminated materials generated during a Worst-Case release.

D. Oil Spill Response Organization

Oil Spill Response Organizations called out by Kiantone personnel will report to the QI and their activities will be based on consultation with and approval by the QI.

A list of Oil Spill Response Organizations is provided in Section 2C(3).

E. Response Organization Resources

See Appendix C for a list of equipment and resources available to each response organization. These organizations will have available the personnel and resources for the first seven days of response.

All response organizations listed in this plan can respond to any location on the pipeline within the Tier I response time specified in 49CFR194.115. (12 hours for all areas within the area of the pipeline).

Response organizations with listed equipment represent sufficient capability to respond to a Worst-Case discharge.

Response organizations listed in this plan that do not have equipment lists provided in Appendix C of this plan represent capability beyond the necessary resources required to mitigate a Worst-Case discharge.

SECTION 5: LIST OF CONTACTS

This section includes Kiantone and URC personnel to be notified, as well as organizations for activation of response resources. Outside agencies are listed in Section 2.

A. Qualified Individuals

James Hare – Pipeline Manager	(work) (cell) (b) (6)	(716) 675-2767 or (716) 472-5073 or [redacted]
Larren Dosser – Mgr. Terminals/Pipelines	(work) (cell) (b) (6)	(814) 726-4718 or (716) 553-6683 or [redacted]
Scott Hull, Assist. Pipeline Manager	(work) (cell)	(716) 675-2767 or (716) 553-5061
Tony Gioia, Pipeline Field Manager	(work) (cell)	(716) 257-9185 or (716) 713-2020
Jamie Hare, Warren Tank Farm Field Manager	(work) (cell)	(814) 726-4738 or (716) 720-0241
Kelly Smith, URC Oil Movements Manager	(work) (cell)	(814) 726-4808 or (814) 688-1362

B. Persons to Contact

The following is a list of company personnel that would be contacted by the Qualified Individual in the event of a release.

(1)	Full Time Pipeline Operators: (24 hours)	**Pipeline Control Rm.** United Refining Co.	**(814) 723-1201** (814) 723-1500
	Louis Vertino	(cell)	(716) 796-7313
	Mark Hissin	(cell)	(716) 308-7080
	Jjamil Luciano	(cell)	(716) 578-7035
	Galand Tucker	(cell)	(704) 241-7928
	Mike White	(cell)	(716) 706-9681
	Mike Rozek	(cell)	(716) 491-9391
	Cameron Dawley	(cell)	(716) 207-7092
	Matthew Terreri	(cell)	(716) 432-5064

(2) Part-Time Pipeline Operators:

West Seneca Terminal:
Charles Manuella
Jack Travis
Don Noworyta
Art Haas
Rick Nocero
Guy Gimiento

Booster Station:
Rich Johnson
Charles Johnson
Doug Carnell
Sherry Felle

(b) (6) [redacted]

(3) Other United Refining Company personnel:

Fred Martin – VP, Supply and Transport.	(work)	(814) 726-4726
Tony Gigliotti – Safety Director	(work) (cell) (b) (6)	(814) 726-4802 or (814) 688-8048 or [redacted]
Tim Ruth – Envt'l. Compliance Officer	(work) (cell) (b) (6)	(814) 726-4609 or (814) 688-1383 or [redacted]
Joe McFadden – Fire Marshall	(work) (cell) (b) (6)	(814) 726-4807 or (814) 688-1367 or [redacted]
Dan Sobina – Regulatory Compliance Mgr.	(work) (cell) (b) (6)	(814) 726-4846 or (814) 688-1387 or [redacted]
Keith Anderson – Assist. Security Director	(work) (cell) (b) (6)	(814) 726-4615 or (814) 688-1313 or [redacted]

KPL/URC personnel, including the QIs, are available 24 hours a day through the Central Security Office in Warren, PA at (814) 723-1500.

C. Insurance Representative/Media Contact

Rob Kaemmerer – URC V.P. Human Resources	(work) (cell)	(814) 726-4742 (814) 688-1333

D. Activation of Response Resources

A statement from the Vice President of Supply and Transportation ensuring availability of response resources is included in Appendix E.

The following are Oil Spill Removal Organizations that are available for 24-hour response (unless otherwise indicated) to a discharge at the pipeline. The following list is includes a range of response time, depending on where the release is located on the pipeline or facility. All response times are within the Tier I response time specified in 49CFR 194.115(b). Response resources are suitable to mitigate a Worst-Case event at all locations.

	Response Time
NYETECH (OSRO #196) 230 McKee Road Rochester, NY 14611 (800) 807-7455	2 - 4 hrs.
EP&S of Vermont (OSRO #054) 2775 Broadway, Suite 250 Cheektowaga, NY 14227 (866) 597-0001	30 min. - 2.5 hrs.
OP-TECH Environmental Services 108 Sawyer Avenue Tonawanda, NY 14150 (716) 873-7680	45 min. - 3 hrs.
National Vacuum Corporation 408 47th St. Niagara Falls, NY 14304 (716) 773-1167	1.5 - 3.5 hrs.
Weavertown Environmental Group 201 South Johnson Road Houston, PA 15342 (800) 746-4850	3.5 - 5 hrs.
McCutcheon Enterprises, Inc. 250 Park Road Apollo, PA 15613-8730 (724) 568-3623	3.5 - 5 hrs.

Letters of commitment from oil spill removal organizations are provided in Appendix F. Response resources available are listed in Appendix C.

SECTION 6: TRAINING PROCEDURES

All persons, including those employed at the facility or by the owner of the facility, those employed by Oil spill Removal Organizations, and others at the scene of an oil spill cleanup operation will be required to have the proper training for emergency response and hazardous materials operations (as applicable) as defined in 29CFR 1910.120. Kiantone employees will be trained initially, and annually thereafter. Training of Kiantone employees is conducted by the United Refining Company Safety Department who has a trainer certified per 29CFR 1920.120. Records of training certification are maintained by the QI at the West Seneca Terminal.

Persons not having the appropriate training will be prohibited from participating in cleanup operations.

All persons participating in oil spill cleanup and removal operations will also be required to participate in employee notification as defined in 29CFR 1910.120 on-site prior to commencing activities. The Qualified Individual or the designated health and safety officer will provide employee notification. A copy of 29CFR 1910.120 is maintained by KPL/URC and can be made available to the Qualified Individual or health and safety officer.

Training records for pipeline personnel are maintained for a minimum of three years following completion of training. In addition, records are maintained for as long as the individual is assigned duties under this response plan.

Oil Spill Removal Organizations are required by the operator's management to maintain records sufficient to document training for the organizations personnel and will make them available upon request. Records should be maintained for three years following completion of training.

The management of each facility is responsible for ensuring that all response personnel are trained to meet the OSHA standards for emergency response operations as defined in 29CFR 1910.120.

Outline of Training Program

The training program complies with 49CFR 194.107(d)(1)(vii) by ensuring the following results:

All personnel know:

- Their responsibilities under the plan.
- Name, address, and procedures for contacting the operator on a 24-hour basis.
- Name of and procedures for contacting the Qualified Individual on a 24-hour basis.

All reporting personnel know:

- The content of the Plan Information Summary (Section 1)
- The telephone number of the National Response Center.
- The notification process.

All response personnel know:

- The characteristics and hazards of the oil discharged.

- Conditions that will likely worsen emergencies, including the consequences of facility malfunctions, and appropriate corrective actions if malfunctions occur.
- The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage.
- The proper fire-fighting procedures and the use of equipment, fire suits, and breathing apparatus.

SECTION 7: DRILL PROCEDURES

The management of Kiantone Pipeline organize and schedule all announced and unannounced drills. The focus of each drill varies to ensure that all aspects of the plan are covered every three years. This includes coordination with spill response organizations and government agencies as appropriate. Drills include both manned and unmanned pipeline emergency procedures as appropriate. The following drills are conducted:

- Quarterly notification of the facility and qualified individual.
  The Regulatory Compliance Manager conducts this drill.

- Semiannual facility equipment deployment.
  The Qualified Individual conducts this drill. (Note: This drill may be coordinated through the Buffalo Emergency Response Group.)

- Annual Spill Management Team tabletop planning.
  This drill is organized by the Manager of Terminals and Pipelines or the Regulatory Compliance Manager, and includes the Qualified Individual.

- Annual unannounced exercise.
  This drill may include activation of oil spill removal organizations and the spill management teams identified in this response plan. It may also include activation of facility equipment.
  This drill is typically planned by the Spill Management Team and is initiated at an unannounced time by the Manager of Terminals and Pipelines.

It is the responsibility of management of the facility to ensure that the response resources identified in this plan participate in an annual deployment drill.

Drills are designed to exercise either components or the entire response plan; however, a drill exercising the entire plan should be conducted at least once every three years.

Records of all drills are maintained at the facility for a period of at least three years following completion of a drill. Records include the date, time, participants, activities and other comments that may be relevant. Records are signed by Kiantone's Qualified Individual and can be made available upon request.

SECTION 8: REVIEW AND UPDATE PROCEDURES

It is the responsibility of the Regulatory Compliance Manager to record any changes to this plan as they occur on the following page and in the text of the plan.

The Pipeline Manager shall notify the company's Manager of Terminals and Pipelines and Regulatory Compliance Manager of changes to this plan. Likewise, the Manager of Terminals and Pipelines and Regulatory Compliance Manager notify the Pipeline Manager of any changes made within their level of responsibility to the plan.

Copies of this plan are maintained at Kiantone Pipeline by the Pipeline Manager at the West Seneca, NY storage terminal, and by the company's Manager of Terminals and Pipelines and Regulatory Compliance Manager at their offices at Warren, Pennsylvania, (814) 726-4718 and (814) 726-4846, respectively. The plan maintained at the facility will be considered the official copy.

The plan is reviewed annually, not to exceed 15 months. Any significant revisions to the plan shall be provided to the Pipeline and Hazardous Materials Safety Administration (PHSMA), the U.S. Coast Guard, and U.S. EPA, as applicable.

The following significant changes in operating conditions would necessitate a plan revision be submitted to PHSMA within 30 days:

- New pipeline construction or purchase.
- Change in Worst-Case discharge volume
- Change in commodities transported.
- Change in Oil Spill Removal Organization(s).
- Change in the Qualified Individual(s).
- Changes in the National/Area Contingency Plan that have a significant impact on the appropriateness of response equipment or response strategies.
- Change in response procedures.
- Change in ownership.
- Post-drill evaluation results.
- Post-incident evaluation results.
- Post-worst case discharge.

Kiantone will resubmit the Facility Response Plan to PHMSA at least every five years from the last approval date for review and approval.

Facility Response Plan
Changes and Update Record

DATE	*C/U	ENTERED BY	+NOTIFIED	DESCRIPTION
5/4/07	U	Dan Sobina	M, GM, EC	Personnel, Phone Numbers
11/17/08	U	Dan Sobina	M, GM, EC, PHMSA	5 Year Update
6/15/10	U	Dan Sobina	M, GM, EC	Personnel, Phone Numbers
11/29/11	U	Dan Sobina	M, GM, EC	New OSRO Contract
12/18/12	U	Dan Sobina	M, GM, EC	New Pipeline Operators @ W.Sen.
10/18/13	C	Jamie Hare	M, GM, EC	Farm Line & Tank Farm inclusion
2/18/14	U	Dan Sobina	PHMSA, M, GM, EC	5-year update & New OSRO
4/30/14	U	Dan Sobina	PHMSA, M, GM, EC	Changes from Letter of Correction

* Enter C for change or U for update. Indicate update if plan has been reviewed by Spill Management Team.

\+ Enter M for facility manager, GM for general manager of terminal, EC for environmental coordinator, and any affected agency.

SECTION 9: RESPONSE ZONE APPENDIX

Kiantone has only one response zone. Therefore, information pertaining to the entire pipeline is included in the Information Summary, Section 1.

A. Qualified Individual Name and Telephone Number

See Section 2C and 5B

B. Notification Procedures

See Section 2

C. Spill Detection and Notification Procedures

See Section 3A and 2C

D. Spill Response Organizations

See Section 2C(3).

E. Activities and Resources Necessary to Mitigate a Worst-Case Discharge

(1) Equipment and Supplies

See Section 3C and 3D

(2) Personnel

See Section 3E for responsibility. Section 2(C) provides names and phone numbers.

(3) Methods and Strategies for Spill Recovery and Cleanup

Kiantone recognizes that adequate response methods and strategies must be developed to properly respond to both a worst case discharge (volume based) and discharges that impact environments or habitats where response may be more difficult and resource intensive (e.g. wetlands, creeks, etc.). To formulate these strategies and methods, Kiantone has referred to *Options for Minimizing Environmental Impacts of Freshwater Spill Response* developed by the National Oceanic and Atmospheric Administration (NOAA) and the American Petroleum Institute (API). Applicable sections of this guidebook are discussed below for the response zone covered by this plan. In addition, excerpts from the guidebook can be found in Appendix G and should be used for reference when situations arise where the response strategies and methods formulated in this plan may not be optimal due to unforeseen circumstances.

Kiantone's Regulatory Compliance Manager maintains a complete copy of *Options for Minimizing Environmental Impacts of Freshwater Spill Response* for reference. Specific strategies and methods for response zones applicable to this plan are as follows:

Strategy: Products released to the environment will be contained and recovered as quickly as reasonably possible and to the maximum extent practicable, to minimize impact to the environment, but not withstanding protection of human health and safety.

Methods: Appropriate methods for containment, recovery, and cleanup will depend on impacted environments and habitats. Kiantone will use methods that least impact the environment, but may use alternate methods if techniques with less immediate impact are determined to be more intrusive over long term cleanup operations.

The preferred methods for cleanup and recovery are listed for each habitat that is covered by this plan. They are as follows:

(i) Water Environments: *Open water*, *Large Rivers*, *Small Lakes/Ponds*, and *Small Rivers/Streams*

Booming, skimming, and vacuuming would be the primary containment and collection methods employed. Berms and barriers such as underflow dams may also be constructed where it is necessary to contain free oil to prevent or minimize intrusion into sensitive environments.

(ii) *Bedrock*, *Man-Made Structures*, *Sand*, *Gravel*, and *Sand & Gravel*:

The methods employed will include using sorbents and removing debris. Oil may also be removed from *Bedrock*, *Man-made Structures*, *Gravel*, and *Sand & Gravel* habitats using low pressure, cold water flushing. Flooding should be used instead of flushing for *Sand* habitats. Floated oil will be recovered as in Water Environments above. Vacuuming may also be employed if it can be conducted with minimal environmental impact.

(iii) *Vegetated Shores* and *Wetlands*:

Methods include flooding and low pressure, cold water flushing for *Vegetated Shores* and *Wetlands*. Vacuuming may also be employed if it can be conducted with minimal environmental impact. Cleanup methods for *Wetlands* may also include the use of sorbents and oil-consuming microorganisms.

(iv)*Mud*:

Mud habitats should be flooded to float oil, but no flushing should occur. If possible, floated material should be collected in areas of less sensitivity such as gravel, sand, etc. listed above. Sorbents may also be used.

Response resources necessary to conduct containment and cleanup methods outlined above are maintained by Kiantone Pipeline and the OSROs listed in Section 2C(3) and Appendix C. OSROs are available 24 hours a day, year round and are capable of responding so that planned spill recovery methods and strategies can be accomplished within the appropriate tier response times as required by 49CFR 194.115(b). Section 5D of this plan lists the estimated response time for each OSRO.

F. Federal, State and Local Agencies

See Section 2C(4)

G. Worst-Case Discharge Volume

(b) (7)(F) [redacted]

H. Method Used to Determine Worst-Case Discharge Volume

All calculations and factors provided herein are based on 49CFR 194.105 and 33CFR 154, App. C. This facility does not contain any marine transfer related facilities.

Calculations for worst-case discharge are included for both breakout tank and pipeline failures. The largest discharge volume is from the largest aboveground storage tank (#703.) Therefore, the calculated release for the storage tank is considered to be the worst-case discharge. (Note: Since the largest historical release from a tank was 100 barrels and the largest from the pipelines was 100-200 gallons, the calculated WCDs are used for this FRP because they are greater than historical WCDs.)

The aboveground storage tanks (breakout tanks) associated with these pipelines have been constructed with >100% secondary containment, built/repaired to API standards, are equipped with overfill and cathodic protection, and are tested as required to meet the applicable API standards. Therefore, the worst-case discharge for this facility has been calculated considering the maximum 75% credit (i.e. based on 25% of the largest tank capacity.)

Pipeline and tank data along with worst-case discharge (WCD) calculations are as follows:

(1) Worst-Case Discharge (WCD) Calculations:

(a) Tank Data and WCD Calculation: (no tanks are linked battery)

(b) (7)(F)	Product Stored	Oil Group	(b) (7)(F)	Secondary Containment	Overfill Protection	API Standard	Prevention Credit %
	LCO	IV		>100%	Yes	Yes	75%
	ULSD	III		>100%	Yes	Yes	75%
	ULSD	III		>100%	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%
	FCC Chg.	III		>100%	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%
	Crude Oil	III		>1005	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%
	Crude Oil	III		>100%	Yes	Yes	75%

(b) (7)(F)

Prevention Credit Percent = 75%

Therefore, the WCD is considered to be 25% of the tank capacity:

(b) (7)(F)

Oil Group III
Oil Group IV

(b) Pipeline Data and WCD Calculation:

(b) (7)(F)

Worst-Case Discharge = (Discovery Time + Shutdown Time)(Flow Rate) + Drainage

(c) Final WCD for Oil Group III and IV:

(b) (7)(F) [redacted]

- Therefore, the WCD from planning calculations for Oil Group III is (b) (7)(F) [redacted]

Oil Group IV:

(b) (7)(F) [redacted]

- Therefore, the WCD from planning calculations for Oil Group IV is (b) (7)(F) [redacted]

(2) Planning Calculations:

(a) Worst-Case Planning Volume For On-Shore Recovery

Oil Group III: (b) (7)(F) [redacted]

% on shore recovery	50
Emulsification factor	2.0

(b) (7)(F) [redacted]

Oil Group IV: (b) (7)(F) [redacted]

% on shore recovery	70
Emulsification factor	1.4

(b) (7)(F) [redacted]

(b) Worst-Case Planning Volume For On-Water Recovery

Oil Group III: (b) (7)(F) [redacted]

On water recovery	50
Emulsification factor	2.0

(b) (7)(F) [redacted]

Resources:	Required Recovery Capacity	OSRO Actual Capacity
Tier 1	(b) (7)(F) [redacted]	10,000+ bbls/d
Tier 2		20,000+ bbls/d
Tier 3		30,000+ bbls/d

Oil Group IV:	(b) (7)(F)	
	On water recovery	50
	Emulsification factor	1.4

(b) (7)(F)

Resources:	(b) (7)(F)	OSRO Actual Capacity
Tier 1		10,000+ bbls/d
Tier 2		20,000+ bbls/d
Tier 3		30,000+ bbls/d

(3) Average Most Probable Discharge

Average most probable discharge = 1% of Worst-Case discharge or 50 bbls, whichever is less (by definition). Average most probable discharge:

= 50 bbls Oil Group III & IV

(4) Maximum Most Probable Discharge

Maximum most probable discharge = 10% of Worst-Case discharge. Maximum most probable discharge:

(b) (7)(F)

(5) Pipeline Release Data

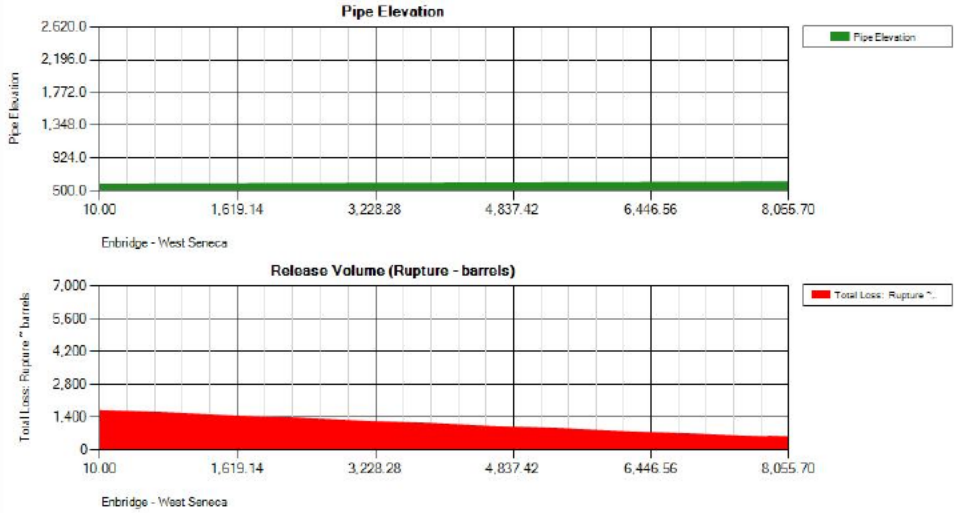
In addition to the worst case discharge calculations, Kiantone also maintains data for pipeline releases calculated using American Innovations' Risk Intelligence Platform (RIPL) software, which is utilized by Kiantone as part of its integrity management program. This data is broken into several components (i.e. locations between facilities) as follows:

- 12" Crude Pipeline - Enbridge to West Seneca
- 12" Crude Pipeline - West Seneca to Warren (tank farm)
- 12" Crude Pipeline – Cobham Park Tank Farm to Refinery
- #2 Farm Line – Cobham Park Tank Farm to Refinery
- #3 Farm Line – Cobham Park Tank Farm to Refinery

The RIPL calculates release volumes for line pipe in these zones utilizing the following variables: response time, elevation, operating pressure, flow rate, valve location, and other relevant pipeline data. Maximum release volumes for ruptures in each zone can be seen on the following charts:

Release Volume - Enbridge to West Seneca

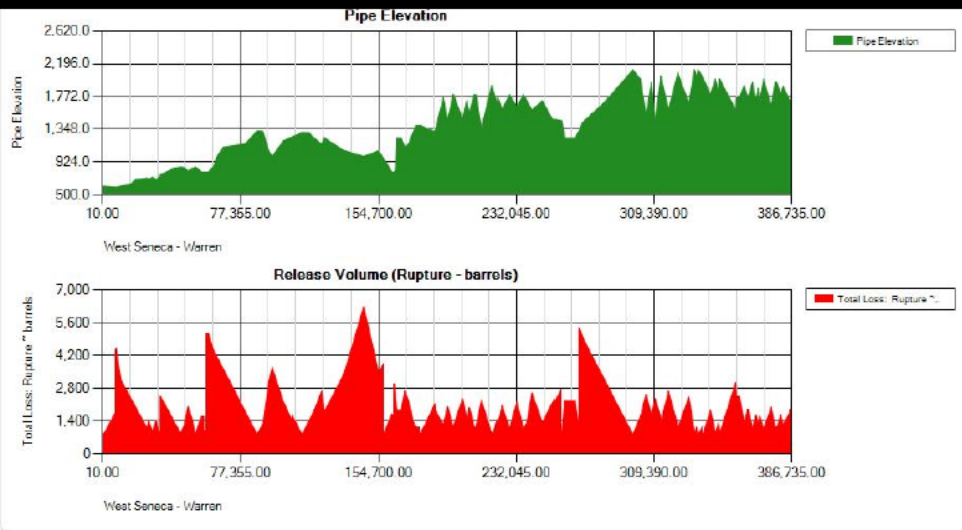
(b) (7)(F)



Release Volume - West Seneca to Warren

Mainline Valve Locations

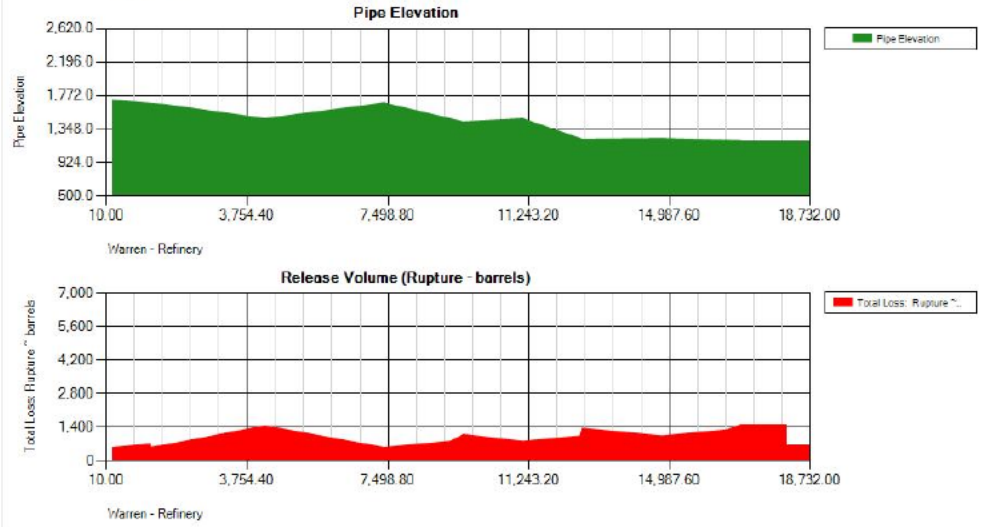
(b) (7)(F)



Release Volume - Warren to Refinery

(b) (7)(F)

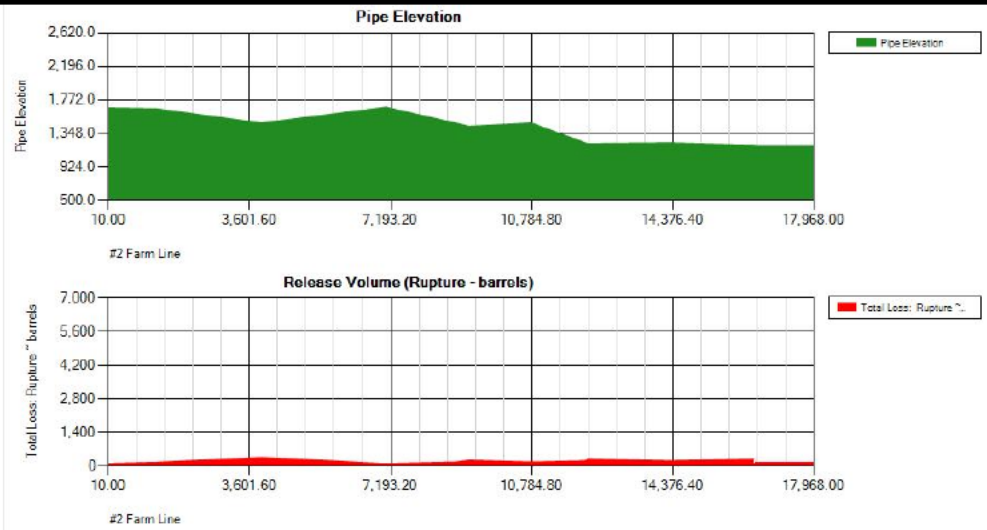
[redacted]



Release Volume - #2 Farm Line

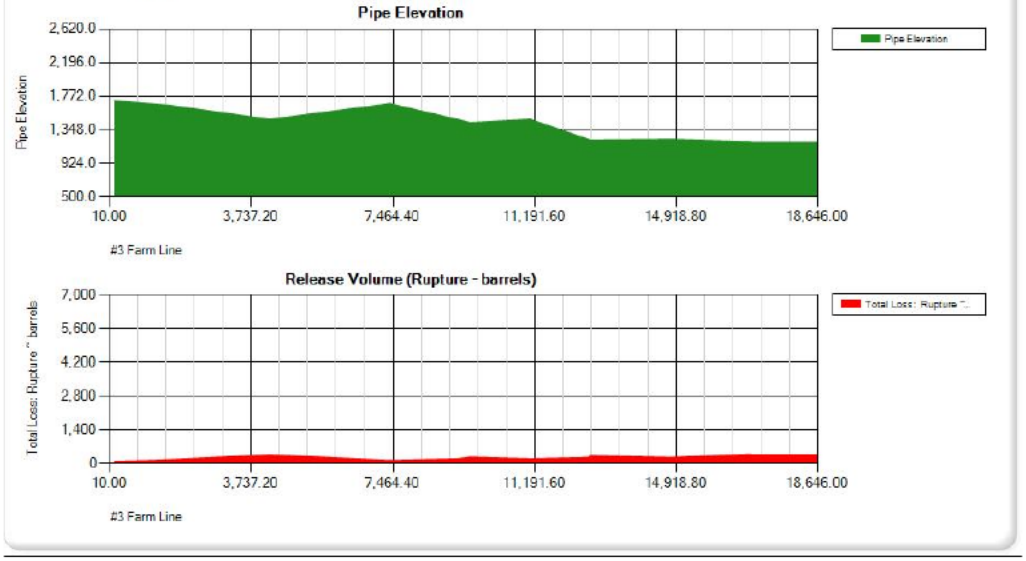
(b) (7)(F)

[redacted]



Release Volume - #3 Farm Line

(b) (7)(F)



I. Pipeline Map

Kiantone's pipelines are shown on the location maps (Location Map #1 and #2) located in Appendix A. These maps were also generated using Kiantone's RIPL data. The following information is included on these maps.

(1) Location of Worst-Case Discharges:

The Oil Group III worst case discharge has been calculated to be (b) (7)(F) [redacted]

The Oil Group IV worst case discharge has been calculated to be from (b) (7)(F) [redacted]

(2) Distance Between Each Line Section:

Kiantone's 12-inch crude line begins at the interface with Enbridge approximately 1.67 miles north of the West Seneca, NY oil storage terminal and terminates at the United Refining Company Refinery in Warren, Pennsylvania. The (b) (7)(F) [redacted]

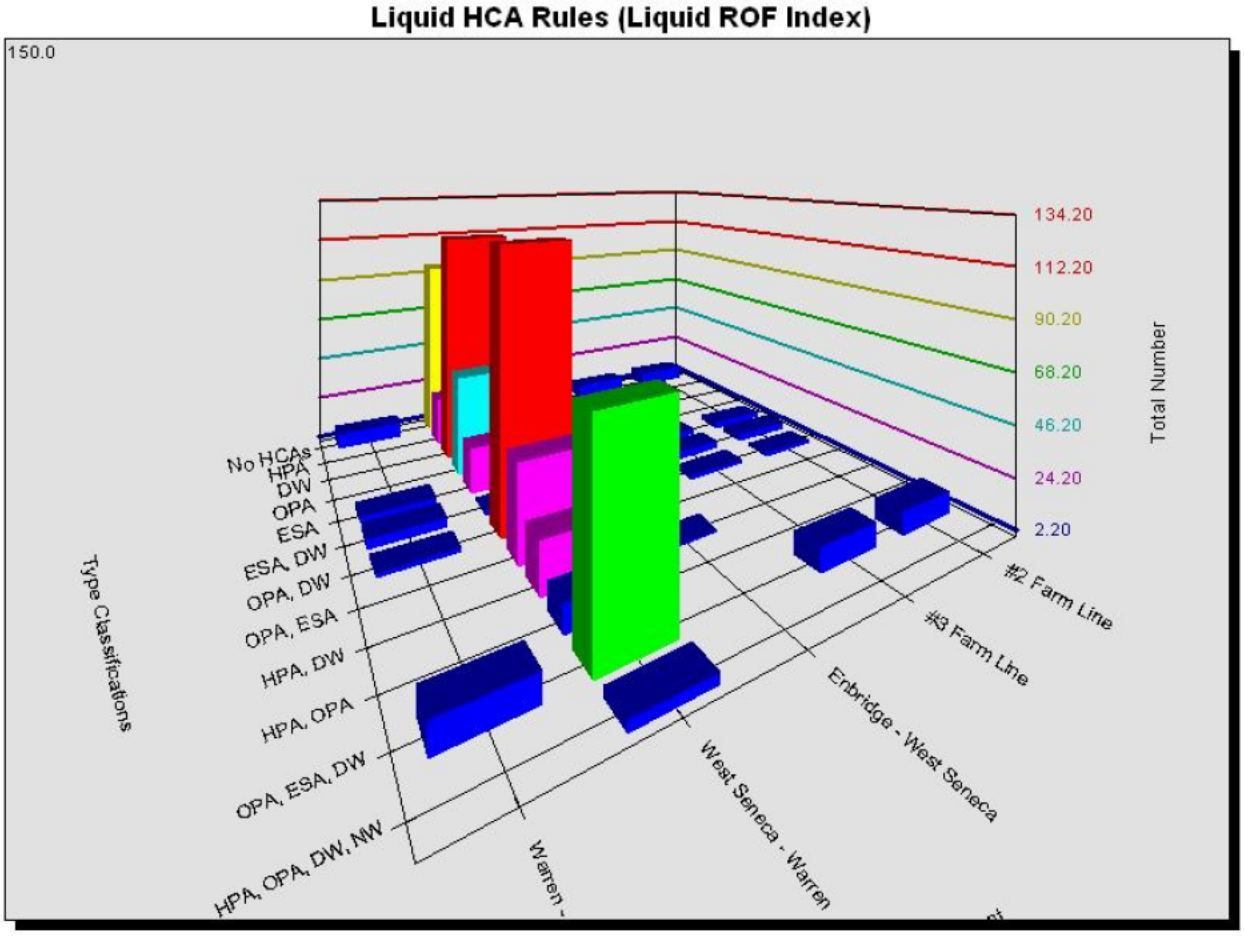
Another storage tank facility (Cobham Park Tank Farm) is located at the south end of the pipeline, approximately 3.5 miles north of the refinery. It includes four breakout tanks for the 12-inch crude pipeline and four more breakout tanks for the two 6-inch pipelines that transfer between the refinery and tank farm. Flow from the 12-inch crude line can be diverted to any of the crude oil storage tanks or sent directly to the refinery.

Distance between line sections is considered to be the distance between Main Line Valves. These distances are shown on Location Maps #1 and #2 (see Appendix A.) In addition, a Piping Diagram and Plan Profile map which shows the topographic profile between valves is also provided in Appendix A.

(3) Potentially Affected Sensitive Areas:

Sensitive areas (i.e. High Consequence Areas – HCAs) have been identified in RIPL as part of Kiantone's Integrity Management Program, which utilizes the National Pipeline Mapping System and other supporting data. The sensitive areas identified include environmentally sensitive areas (ESA), drinking water (DW) zones which include bodies of water and waterways, and both high and other population areas (HPA & OPA). The distribution of areas that could be affected by a release from the pipelines are detailing in the following diagram:

Diagram 9.0, Distribution of HCAs



Maps detailing all HCAs in the zone of Kiantone's pipeline are included in Appendix B. Included with this Sensitive Areas maps is a list of all high consequence areas that could be affected by a release from the pipelines, the distance the HCA is from the pipelines, and whether the potential release would directly or indirectly affect the area. This data is listed by component, which are zones between facilities.

(i) *Drinking Water Intakes, Lakes, Rivers and Streams*

All drinking water sources, lakes, rivers and streams traversed by Kiantone's pipelines are listed in Appendix A. A significant drinking water resource within the 5-mile radius planning distance of the 12-inch crude pipeline is the Town of Gowanda watershed. Drainage from the watershed flows into the municipal reserve water supply reservoir. Strategy for containment and recovery includes construction of underflow impoundments in advance of the oil front if the spill occurs in feeder streams to the water supply reservoir and booming the head of the reservoir to minimize oil spread. Recovery at the head of the reservoir can be accomplished with vacuum trucks or floating skimmers. Along the feeder streams, remote locations may necessitate using predominately oil

sorbent materials or small portable oil skimmers and transfer pumps, depending on volume of oil to recover. The water supply reservoir is used only as a reserve source and can, therefore, be shut down until cleanup measures are completed.

Significant lakes within the 5-mile radius planning distance include Lake Erie, within the State of New York, and Allegheny Reservoir within New York and Pennsylvania. The closest point of each of these lakes to the pipeline is almost 5 miles. Significant impact to these two lakes is unlikely in the event of a Worst-Case discharge. Response actions will include booming and/or construction of underflow impoundments in advance of the oil front along streams leading to the referenced lakes. Booming will also take place at the mouth of streams that contact the lakes. Skimmers, vacuum trucks and sorbent materials will be used to recover oil from boomed and impounded areas.

Surface waterways (rivers and streams) within the 5-mile planning radius, and mile marker where they traverse the pipeline are also provided in Appendix B, Sensitive Areas. Containment and recovery methods will be similar to those described above.

(ii) *Environmentally and Economically Sensitive Areas*

A release from the pipeline could potentially affect several sensitive areas. Appendix B includes tables describing the location of specific areas of concern traversed by the pipeline and the mile marker at which they occur.

Various habitats, publicly managed areas, natural areas, biological resource areas, water dependent commercial and recreation areas and anthropological areas are found throughout the response zone. Appropriate actions to respond to a release in these zones will be conducted in the manner described previously in this section, depending on habitat affected. Further guidance to adequately respond to any unforeseen circumstances will be obtained from the publication, *Options For Minimizing Environmental Impacts of Freshwater Spill Response Actions*, as well as, the ACPs. Specific response methods and potential adverse impacts are provided in these sources. Kiantone is familiar with these informational sources and maintains copies for reference in the event of a release. Response decisions affecting sensitive areas would be reviewed with State and Federal agencies to the extent possible during a response.

The pipeline traverses mostly rural areas, except at the north where it crosses through the Buffalo, New York metropolitan/suburban area. The northern portion of the pipeline has the least topographic relief. Most of the pipeline is hilly and rural, crossing numerous surface drainageways. Land use is mostly agricultural and forest. The spill containment and removal resources available are compatible with this terrain.

(4) Response in Environmentally Sensitive Areas (ESAs)

The Kiantone Pipeline system consists of 78.3 miles of 12 inches diameter crude oil pipeline, traversing from West Seneca, NY south to Warren, PA and 7.0 miles of 6-inch diameter refined and/or petroleum products (non-HVL) in Warren, PA. The northern 10 miles of the 12-inch crude oil pipeline is constructed on the Niagara-Mohawk power corridor. This runs adjacent to highly populated areas, through the towns of West Seneca and Orchard Park, NY. Kiantone personnel and contractors would initiate response in this area. Response activities would be very closely coordinated with local emergency management teams, Hazmat personnel, and fire departments.

The response actions common for all areas throughout the response zone will include the following:

- shutdown of pumping,
- closing of valves affecting the release,
- QI initiation of response actions,
- identification of potentially affected environmentally sensitive areas,
- making appropriate notifications to agencies and OSRO's,
- priority protection of environmentally sensitive areas,
- location of the leak,
- containing and removing released oil by means of booming, underflow containment impoundments or cutoff trenches, and utilizing vac truck, skimmers and sorbent materials for oil recovery,
- repair of the leak,
- disposal of debris, and
- continued assessment of environmental impact.

(i) *Water Resources (including those contributing to public water supplies)*

The pipelines do not cross any navigable waterways. The only navigable waterway that could be reached is Lake Erie by means of feeder streams. However, through engineering analysis during Kiantone's IMP development, it was determined that even a rupture from this pipeline would not reach the navigable portions of any waterway.

If oil reaches a stream or water resource, initial response would be to set up containment booms as close to the point of discharge into the stream as possible. Booms would also be placed further downstream as far as the leading edge of the oil. Oil that collects behind the boom will be removed by vacuum truck if accessible, or pumped into portable tank(s) at the recovery point and transferred by pump to oil transport(s). Small amounts of oil can be removed with absorbent pads. Sorbent materials will be placed in secure staging areas. If necessary, oil will be flushed towards downstream booms.

Another immediate response action would be to assess sensitive areas that could be affected and establish appropriate protection. Response actions would consider the types of habitat within the response zone. Sensitive areas identified in the EGLACP along the shoreline of Lake Erie will be considered.

(ii) *Wetlands*

The 12-inch crude pipeline crosses three miles of the Randolph Swamp in Randolph, NY. Containment of product would be accomplished using containment booms or earthen dikes, depending on the water level in the swamp. Recovery would be accomplished using vacuum trucks, floating skimmers and sorbent materials as appropriate.

The product would be transferred into tankers at the closest road crossing. Cutoff/diversion trenches will be constructed, if needed, and timber mats will be used to minimize trampling. If possible, oil will be flushed using low pressure, cold water toward downstream booms.

Boats may be needed for boom deployment and to direct ("corral") the oil to recovery points. Boats may also be needed for oil recovery in open water areas. Response workers would need life preservers, and hip boots or chest waders.

Specific habitats within the swamp and appropriate response actions for vegetation and wildlife protection will be considered. For example, application to the surface of the swamp of specially formulated microorganisms that selectively consume oil may be appropriate in heavily vegetated marshy areas.

(iii) *Plant and Animal Species of Concern*

Spills will be prevented from reaching environmentally sensitive areas on land by diversion and cutoff trenches, installed using excavation equipment or by hand digging in remote areas. In areas of steep slope the equipment may need to be anchored using winches and cable, or drainage may need to be redirected at the base of the slope (as in the case of the steep slope on the south side of Cattaraugus Creek).

Recovered product will be pumped into tanks and transferred into tankers at the nearest accessible location. Response actions will consider minimizing impact to habitats identified in within the affected areas. In open water or swamp areas boom will be used to block-out the oil from reaching sensitive areas. State, Federal and local conservation groups and agencies will be consulted to determine potential impact to plant and animal species.

(iv) *Fishery Resources*

Response actions to be considered will be the same as in subsections (i), (ii), and (iii) above. In addition, spawning beds should be boomed-off to prevent oil from reaching these areas. The Environmental Unit of the Planning Section of the ICS will consult with State fishery agencies to determine potential impact to fishery resources.

(v) *Significant Habitats*

Response actions to be considered will be the same as in subsections (i), (ii) and (iii) above. In addition, the flow of oil will be diverted away from identified significant habitat areas. The Environmental Unit of the Planning Section of the ICS will have the responsibility of protecting and identifying impact to significant habitats.

(vi) *Recreational and Scenic Areas*

Response actions to be considered will be the same as in subsections (i), (ii), and (iii) above. In addition, boom should be deployed to deflect oil from entering sensitive areas and recovery stations should be positioned to minimize impact.

(5) Sensitive Areas of Concern

Environmentally sensitive areas that have been identified as requiring the greatest attention are as follows:

(i) *The first 15 miles of Kiantone's 12-inch crude oil line (from the north), from* (b) (7)(F) [redacted]

This area requires a high level of attention due to population density. On land recovery will use oil collection trenches to prevent the spread of oil and to provide collection points. Oil will be collected using vacuum trucks or portable pumps. Tankers will be used as needed to collect recovered oil and transport it to recycling or disposal locations. Surface waterways will be protected using boom, cut-off trenches or underflow dams. Sorbent materials, both boom and pads, will be used to collect oil as needed. Contaminated soil will be excavated and taken to Kiantone's West Seneca Terminal or other strategic location until disposal can be arranged at a licensed disposal facility. Permission may be requested through State regulatory agencies to bio remediate oil-contaminated soil. Sensitive environments and health and safety concerns will be a priority in this area.

(ii) *Cattaraugus Creek, near the Town of Gowanda, between Main Line* (b) (7)(F) [redacted].

This area is vulnerable because of the steep slope of the pipeline where it crosses the creek. The potential for washout exists. Kiantone inspects this crossing frequently. Cattaraugus Creek is an important salmon fishery and has high recreational value. A release into Cattaraugus Creek could enter territory of the Seneca Nation of Indians. In the event of a release, boom stations and oil collection points will be set up at strategic low turbulence areas locations along the stream. The mouth of the stream will be boomed before it enters Lake Erie. Boom will be deployed as close as possible to the release to prevent additional oil from entering the stream. Vac trucks and tankers will be positioned at boom stations to recover and store oil. Booming of sensitive areas should be given a high priority as well as protection of sensitive habitats. Notification should be made to the Seneca Nation of any releases entering Cattaraugus Creek.

(iii) *The Gowanda watershed area on the 12-inch crude line,* (b) (7)(F) [redacted]

Drainage from this area enters a municipal water supply reservoir. Recovery in this area will likely be in remote locations, mainly on land or in small streams. The terrain is very steep. Cut-off trenches should be used to prevent oil from entering streams. Cut-off trenches can be used as oil collection points. Small underflow dams should be constructed in small streams to contain and restrict oil movement. In larger streams sorbent booms should be employed to contain and restrict oil movement. Small portable pumps will likely be needed to transfer recovered oil to small skid-mounted collection tanks located where vehicle access is possible. The mouth of the stream should be boomed at the head of the municipal water supply reservoir to prevent the entry of oil. A vac truck should be positioned at this location for oil recovery. Immediate notification should be made to the local water authority in the event of a release in the watershed. Protection of sensitive habitats should be considered during response actions.

(iv) *The Randolph Swamp on the 12-inch crude line, from* (b) (7)(F) [redacted] *(previously Route 17).*

This area was identified because of its environmental sensitivity to fish, wildlife and plant species and special equipment that would be required to respond to a release in this area. Containment and recovery strategies for this area have been discussed previously in this Section [see 4(ii)]. Identification and subsequent protection of sensitive habitats should be considered during response actions.

Contaminated soil and materials generated in conjunction with a cleanup effort will be removed as soon as possible from environmentally sensitive areas and taken to Kiantone's West Seneca Terminal, or other convenient location upon approval of the regulatory agency, for temporary storage until approval is

obtained for disposal at a licensed landfill. Any recovered oil will be taken to the West Seneca Terminal or to United's refinery at Warren, PA for reuse.

J. Piping Diagram and Plan Profile Drawing of Each Line Segment

A Piping Diagram and Plan Profile drawing of the pipelines from West Seneca, NY to Warren, PA is provided in Appendix A. It is also kept at the following locations:

- United Refining Company Engineering Department - Warren, PA
- West Seneca Terminal - West Seneca, NY
- United Refining Company Laboratory - Warren, PA
- United Refining Company Environmental Department – Warren, PA

K. Emergency Response Data of Oil Transported

Products transported through each of the pipelines is as follows:

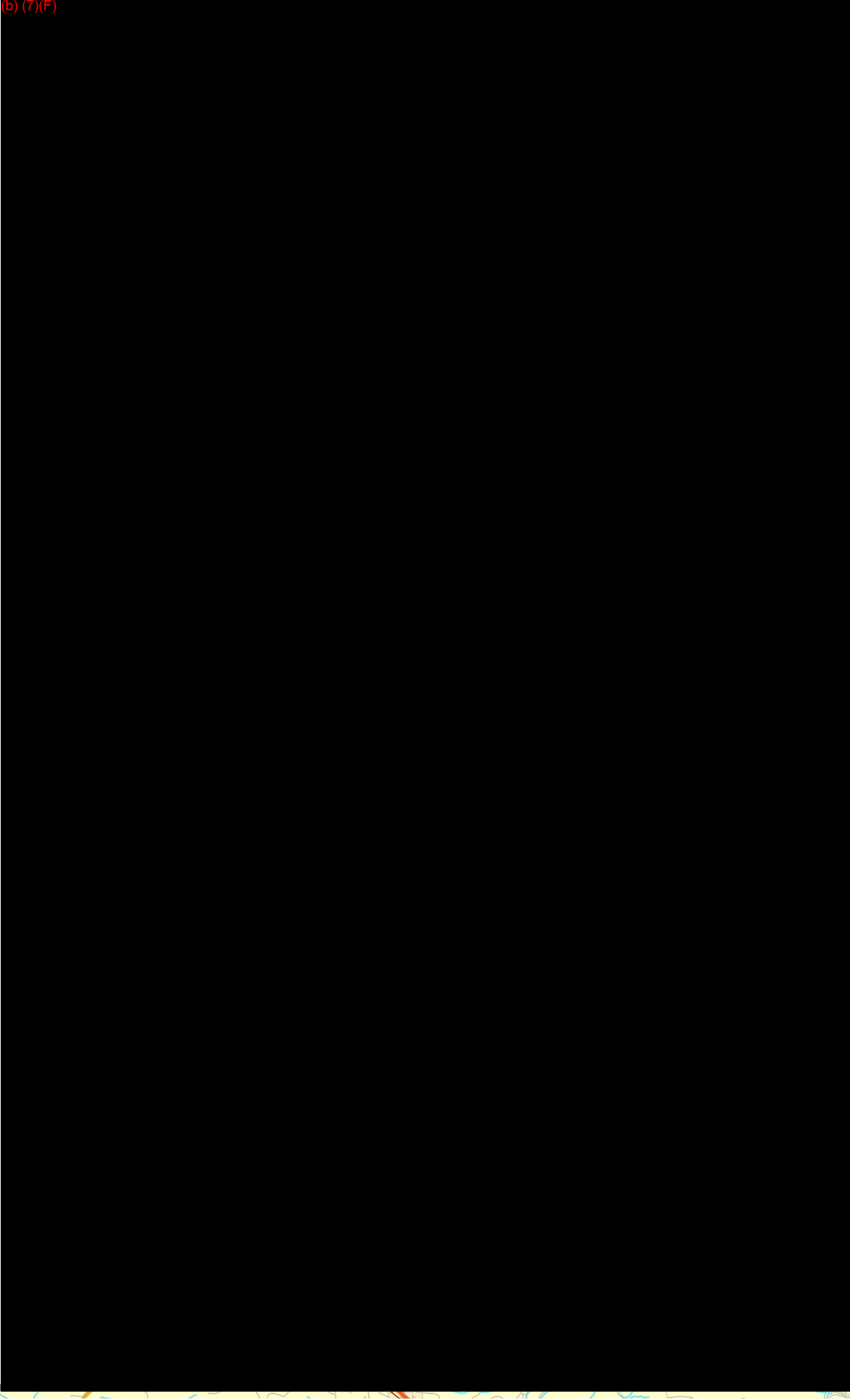
Name	Size	Oil Transported	Location	Length (mi.)
Crude Pipeline	12"	Crude oil	West Seneca, NY to Warren, PA	78.3
#2 Farm Line	6"	ULSD	Warren, PA	3.5
#3 Farm Line	6"	FCC Charge or LCO	Warren, PA	3.5

Material Safety Data Sheets are included in Appendix H and maintained at the following locations:

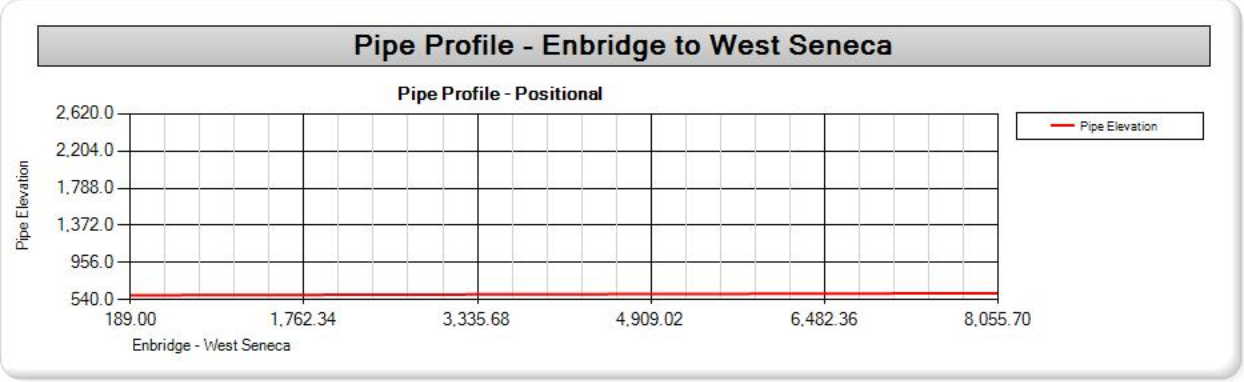
- United Refining Company Fire and Safety Dept. - Warren, PA
- West Seneca Terminal - West Seneca, NY
- Kiantone Booster Station - Persia, NY
- Laboratory Control Room - Warren, PA

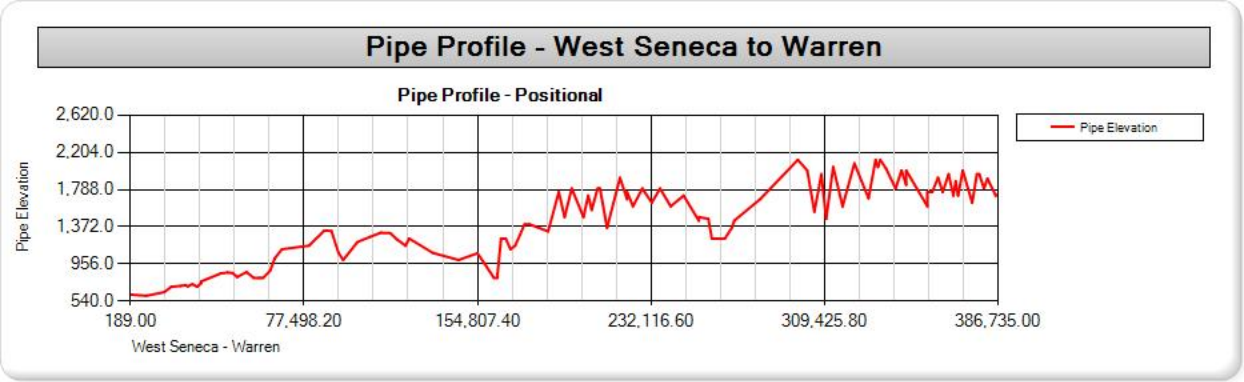
APPENDIX A
Location Maps & Pipe Profile

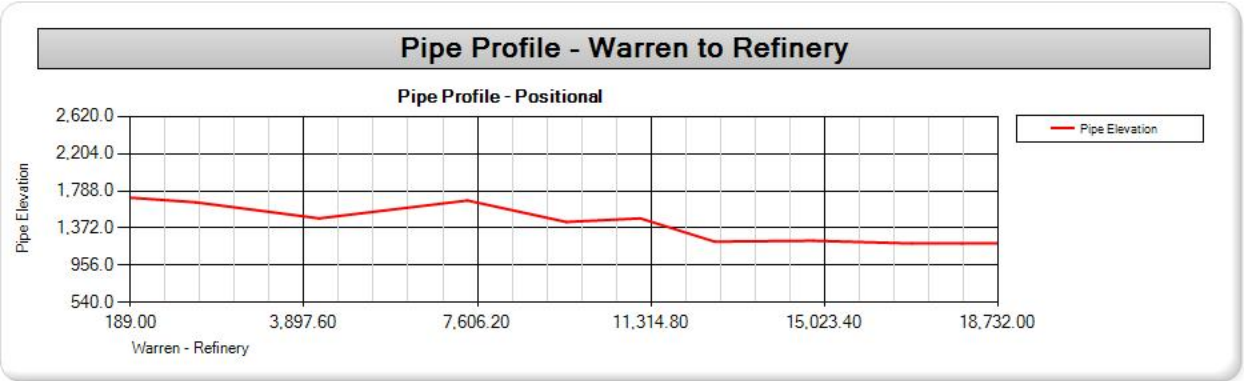
(b) (7)(F)


(b) (7)(F)

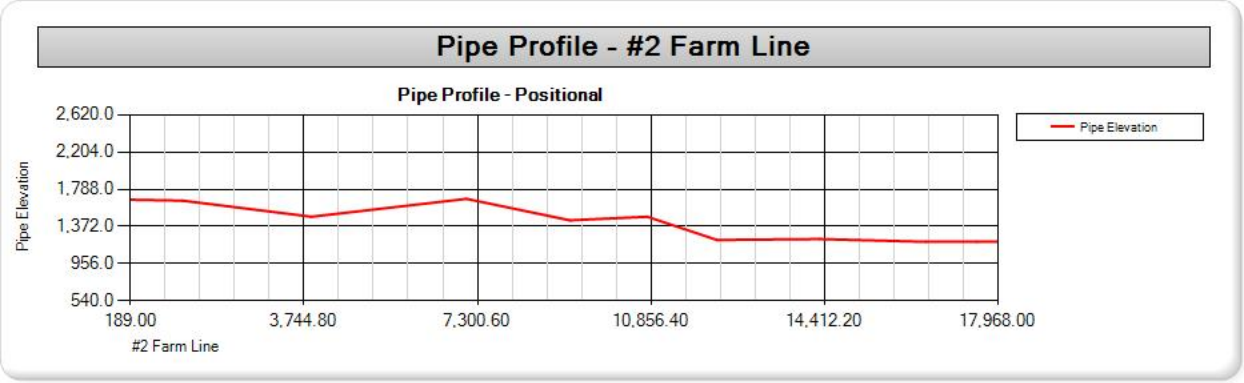
12” Crude Pipeline



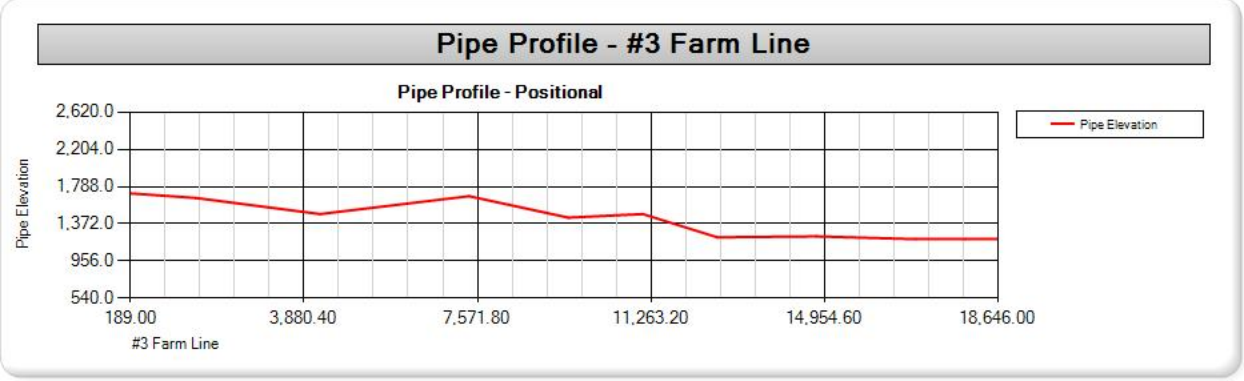




6” Diesel Fuel Pipeline



6” FCC Charge/LCO Pipeline



APPENDIX B
Sensitive Areas

(b) (7)(E)

(b) (7)(F)

(b) (7)(F)

(b) (7)(F)

(b) (7)(F)

[redacted]

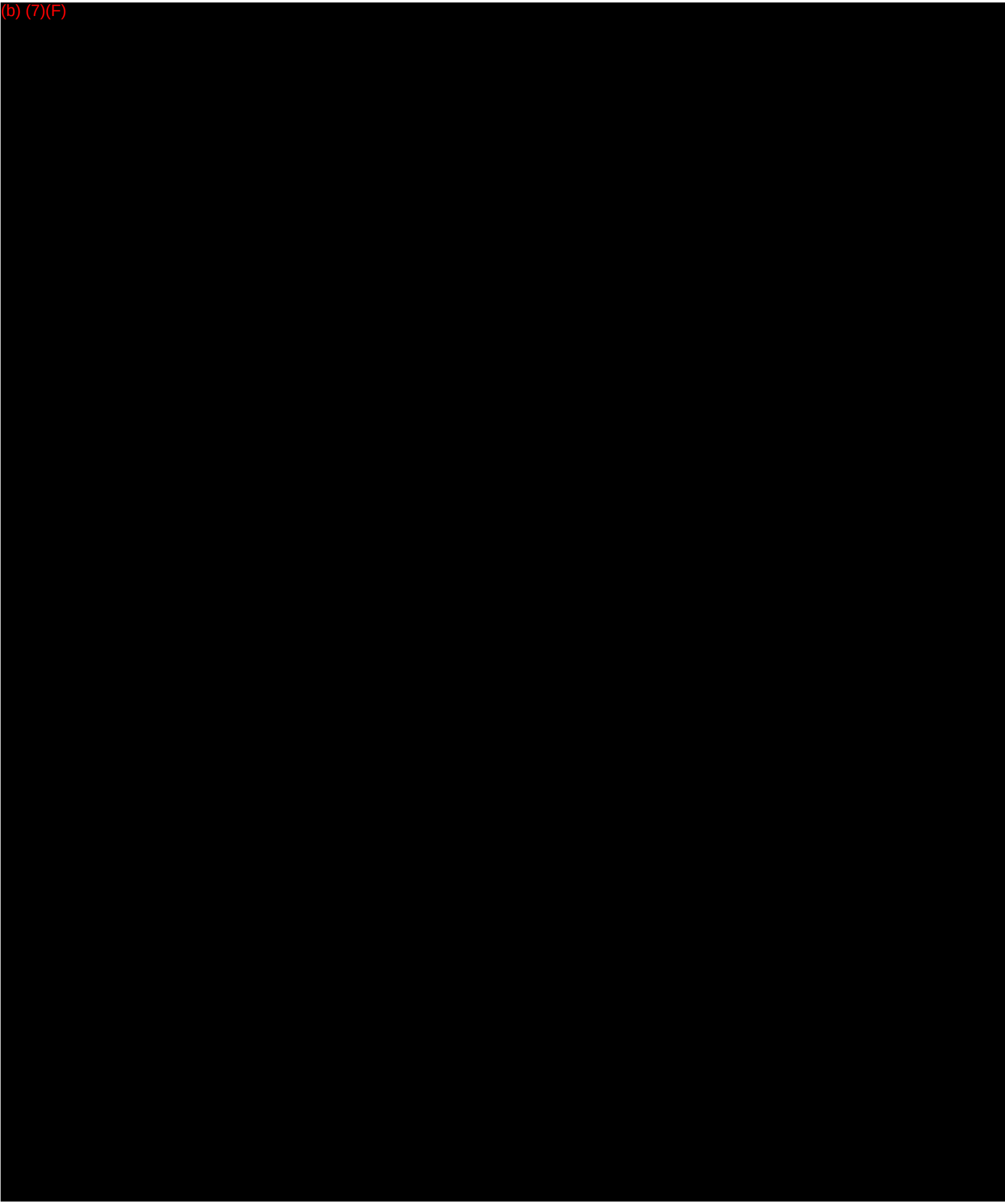
(b) (7)(F)

[redacted]

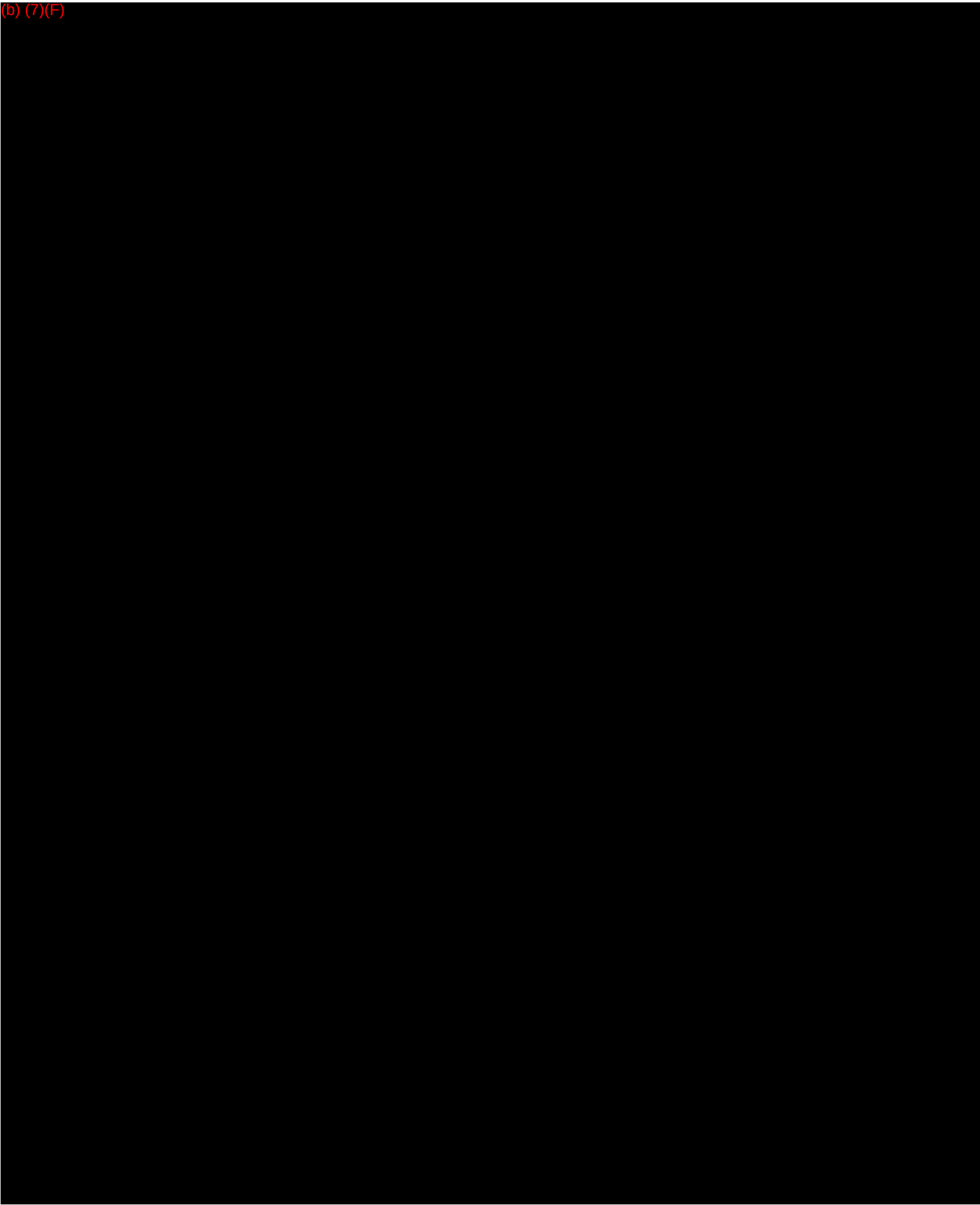
(b) (7)(F)

[redacted]

(b) (7)(F)



(b) (7)(F)




(b) (7)(F)

APPENDIX C
Response Resources

APPENDIX C: FACILITY EQUIPMENT

A. KPL West Seneca Terminal – West Seneca, NY

The following response equipment is maintained at the West Seneca Terminal:

1. Portable Electric Generator
2. Shovels
3. 150 Gallon Foam Trailer
4. 250 Gallon Foam Trailer
5. Fire Extinguishers
6. First Aid Kits
7. Ladders
8. Non-Sparking Tools
9. Pipeline Repair Kit
10. Barricade Fence
11. Absorbent Pads
12. Absorbent Booms

The equipment listed above is stored in the storage shed east of the control room. In addition, 500 feet of river boom and other spill response equipment is stored on spill response trailers at United's Tonawanda Terminal within a 20 minute response time.

Several local industries have formed a mutual aid organization, The Buffalo Emergency Response Group (BERG), to make available equipment to member companies who have a release. A list of equipment is not available for inclusion in this plan. The Qualified Individual maintains this list of member industries and locations of available equipment and materials (note: more than 1000 ft. of boom is maintained among BERG member companies.)

B. URC Refinery – Warren, PA

Response Teams maintained at the refinery in Warren, PA includes a Spill Response Team, HAZMAT Team, Fire Brigade, and a Rescue Team. The complete list of team member is maintained on file at URC in Warren. Available equipment is listed on the following pages.

URC RESPONSE EQUIPMENT INVENTORY

SPILL

1 – 2001 G3-1860 DLX 16'boat, w/trailer. With 2005 90/65 Yamaha jet drive outboard motor, center steering console, 20gal fuel tank. Equipped with Hummingbird depth/fish finder, electric anchor and 2 console spot lights.

ON BOARD EQUIPMENT:
2 – Orange color river buoys (large diameter)
2 – Buoy river anchors
2 – Oars/paddles
1 – Orange color commercial Ring Buoy Type IV
1 – Extendable gaff poll
- Various lengths of assorted ropes and webbing and attachment caribeaners in storage bags
- Equipment Storage Chest with: bull horn, straps, disposable gloves, knives, pulleys, flashlights, batteries and air horn
-Tool Box with standard tools and extra spark plugs, grease gun etc.

SHOP STORAGE CABINET:
10 – Insulated Floatation Jackets in various sizes
10 – Yellow colored boating helmets
10 – Orange , zipper style personal flotation life jackets
1 – Bag of rope

SPILL EQUIPMENT
1 – CARMATE boom trailer w/500' of 6" river boom equipped with booms, shovels etc. (2' ball hitch)
1 – Storage shed located in Starbrick Twp. along river equipped with 650' of 6"river boom, sorbent booms and pads (5 each), shovels, rakes, sorbent pads, road cones and flashers.
- Access to and storage of 50 sorbent booms and pads (100/bundle), booms (50'/bag)
1- Ph Strip/Tester Kit (100 strips)
2 – Portable Cascade Breathing Air trailers equipped w/Scott air system mask and hose
1 – Storage shed located on Flare island w/1500' of 8" river boom

RESCUE

1 – 1998 CARMATE RESCUE trailer w/ outside electrical hook up (2" ball hitch)
2 – Backboards (full adult)
6 – Rope (1/2"x 200') 1200'
4 – Rope (1/2"x 300') 1200'
1 - Burn blanket
2 – Stokes Baskets (metal)
1 – O2 Kit
1 – Tripod w/winch
1 – Confined Space Communications System (Scott Air Compatible)
1 – Sked Stretcher
- Extra 2-3-4" pulleys

- Extra single & double pulleys
- Extra webbing 1" & 2"

3 – Piggy back haul kits
1 – Hot gun
1 – Bull horn

TEAM MEMBER KIT
20 – Kits with:
1pr. PMI rappel gloves
1ea. Bullard Advent Helmet
8yd. 1" nylon webbing
14ft. PMI accessory cord (2x7')
6ea. SMC Lg. Lock D carabiners
1ea. Roco seat/chest rappel harness
3ea. Roco adj. Utility belt
1ea. Roco personal escape belt
1ea. Roco personal gear bag
1ea. Rappel rack w/alum bars
6ea. Extra Lg. Locking D carabiners
1ea. Tri screw link

STRUCTURAL RESCUE KIT
3 – Kits with:
3- SMC 4" pully, 5/8" sealed ball bearing
2 –RA/SMC 4" double pulley, 5/8" oilite bronze bearing
6 – SMC large steel locking D carabiners
6 – SMC extra large steel locking carabiners
2 – Gibbs ascenders ½"S/L, SS
3 – Petzl tri-screw link
4 – ROCO adjustable utility belts
2 – SMC/RA figure 8 with ears
1 – Rappel rack with aluminum bars
2 – Roco shock absorbers
2 – ROCO wristlets
3 – PMI rope pad
1 – Raven rope guard 24"
1 – Raven rope guard 36"
4 – Webbing harness
1 – Short haul kit
4 – Prusick cords

HAZMAT

1 – 1993 CARMATE HAZMAT trailer w/outside electrical hook up (2" ball hitch)
5 – Long handle DECON scrub brush & 1 broom
1 – 3'x3' freezer w/cold packs and cool vest
1 - Pressure test kit for Level A HAZMAT suits

3- Poly tarps
2 – Motorola communication voice systems
1 – Garden hoe
1 – Brass tools kit
1 – Binoculars
1 - Command officer vest
3 – 50' joints of 1 ¾" (1 ½ coupling) NH fire hose
3 – 50' joints of 3" (2 ½" coupling) NH fire hose
150' of ¾" garden hose on reel
1 – Fan
1 – Heavy duty industrial sprayer
1 – DECON collapsible pool w/PVC portable shower and spray wand
- Various cleaning soaps
2 – 20lb. ABC fire extinguishers
1 – Step stool
1 – Portable hand pump
1 – 95gal over pack drum
1 - Each sorbent boom (5-10'pc) & sorbent pads (1-100 sheets)
- Various rubber drain plugs (2"-4")
- Orange traffic cones
- Dry erase board/markers
- Plastic sheeting
- Variety of barricade tape
1 – Box of hand tools (wrenches, screw drivers etc.)
1 – Igloo 5 gal water cooler
1 – Pelican rechargeable flash light
1 – 2004 Emergency Response Guide Book
6 – TrellChem Gas & Chemical suits
10 - Lakeland level A HAZMAT suits
1 – Anhydrous Ammonia Cylinder Leak Kit
1 – Leak Control Kit for Pipes & Internal plugs KIT C-1
1 – Leak Control Kit for Pipes & External patches KIT C-2
1 – Leak Control Kit for Pipes & External patches KIT C-3
1 – leak Control Kit for General purpose leaks KIT AE
1 – Hazardous Materials KIT Series F

STORAGE TRAYS

TRAY #0 – Safety glasses, cloths line, spanner wrench's
TRAY #1 – Teflon tape, garden water nozzle, cotton gloves, soap, string, duct tape rubber straps, Drager kit
TRAY #2 – Electrical pig tale, garbage bags, bungee straps, skin cream, wire
TRAY #3 – Cleaning and stoage supplies for resprirators
TRAY #4 – Pig putty, gated Y (2 1/2" x 21/2") hose fittings & adaptors

PPE

Tyvek Coveralls (LG, XLG, 2XLG)
TyChem suits (XXLG)
- Chemical resistant rubber boots (size 8-15) 2 each size

4 – Face shields
4 – Chemical goggles
6 – Full Face Neg. Pressure APR resprirators (North/3M) w/cartridges
- Chemical resistant gloves (Neoprene, Trellchem, Rubber, Kevlar, Latex under gloves)
1 – Blood borne kit
2 – Blood pressure cuff & thermometer
1 – First Aid kit

FIRE

2- Portable air bottle carts (2 bottles ea. w/200'of hose)
1 – Portable Hale 350 gpm / 18HP, water pump, 2 ½" fittings
1 – Portable Hale 250 gpm / 9HP, water pump, 2 ½" fittings
1 – Honda EN5000 generator
1 – Honda EU1000 (hand carry) generator
1 – Portable light stand
1 – Bauer Air Compressor for SCBA refill (grade D breathing air)
31 – Interspiro 60 min. SCBA's
33 – Interspiro 60 min. spare bottles
30 – Scott 60 min. SCBA's
15 – Scott 60 min. spares bottles
2 – Radiation meters (Mike Roudybush certified operator)
1 – Hose washer
1 – Hose dryer
2 – High Temperature fire suits (2700 degree) w/gloves & hood
2 – Heavy duty explosion proof flashlights
9 – Portable fire band radios
- Inventory of fire gloves, hoods, liners, bunker gear, helmets & boots
- 1400' of 2 ½"coupling (3" hose)
- 1500" of 1 ½" coupling (1 ¾" hose)
- ABC & BC cartridge style dry chemical fire extinguishers (10-20-150-350# units)
- Hard Suction hose-20' of 6" & 40' of 3"

MOBIL EQUIPMENT
1 – 2000gpm TERMINATOR (foam/water nozzle) supported by:
1 – Foam Tanker w/2000 gal of National Foam AR-AFFF 1-3%. 8HP -60gpm @75psi , 200'of 3"hose
1 – National Foam Trailer w/200gal of XL-3% foam (equipped with hose, nozzles and 2" ball hitch)
1- National Foam Tote Trailer w/500gal of (2-275 gal tote) of AR-AFFF 1-3% foam
1 – Ward LaFrance (E-3) 1500gpm pumper w / 1200' of 5" hose, 300' of 3" hose (2 ½" coupling), 300'
of 1¾" cross lay hose (1 ½" coupling) and equipped with hose, nozzles and adaptors)
1 – National Foam fire truck w/1000gal of National Foam AR-AFFF 1-3% foam, 1000gpm Hale pump & 75 gpm foam pump (equipped with deck gun, 2 portable monitors, nozzles (foam & water) 1150' of 3"(2 ½" coupling), 400' of 1 ¾" hose (1 ½"coupling) 1300' of 5" LDH (Large Diameter Hose) and misc. equipment, hose, nozzles and adapters at the fire garage.

MULTI-USE

2 – Portable Cascade Air Trailers equipped with Scott breathing air mask & hose
1 – Bauer Air Compressor for SCBA refill, adjustable bottle fill capacity (30min to 60min) supply and capable of large (cascade bottle, 2500psi) refill.
5 – Industrial Scientific, portable multi gas (H2S, LEL, O2, CO) meters w/pump.
1 – Industrial Scientific, portable Hydrogen meter w/pump
5 – Industrial Scientific PERSONAL monitor (CO, H2S)
2 – Heat Suits w/gloves & hood, 2700 degree
- Gloves (nitril, neoprene, rubber)
1 – Tripod and winch (F&S)
1 – Portable light stand
9 – Portable fire band radios
31 – Interspiro 60 min SCBA
33 – Interspiro 60 min spare bottles
– Scott SCBA spare bottles (60 min.)
-- APR Full & Half mask (3M, North) respirators and cartridges (organic/multi gas, hepa/dust, acid gas)
1 – AED (Automated External Defibrillator)
1 – Honda 5000 Watt generator
1 – Honda 1000 Watt generator (hand carry)
2 – Radiation meters (Bob Hunter & Tony Gigliotti certified operators)
- Fire Extinguishers (various sizes & types)

INDUSTRIAL EQUIPMENT
Industrial light plants (gasoline powered)
Backhoes (diesel)
Cranes (diesel)
Vac. Trucks (diesel / gasoline)
Mobil welding / cutting torch
Dump Truck
Forklift
Flatbed Truck
Emergency Fuel (diesel/gasoline)
High pressure water washer
Bucket Truck
Barricade material (wooden / tape)
Trenching / shoring box

C. Oil Spill Response Organizations (OSROs)

The equipment list for the contracted Oil Spill Response Organization (OSRO), NYETECH is detailed on the following pages. Also attached are equipment lists for EP&S of Vermont, Op-Tech, National Vacuum, Weavertown Environmental Group, and McCutcheon Enterprises, Inc.

NYETECH

230 McKee Road
Rochester, NY 14611

800-807-7455

7.0 Partial Equipment List

NEW YORK ENVIRONMENTAL TECHNOLOGIES, INC.

This equipment is stored in Rochester, NY and does not include equipment that falls under letters of intent.

Recovery Equipment	Qty	Recovery Rate (Nominal) Gallons Per Minute	Estimated Daily Recovery Capacity (Per Day)
Pump, Pneumatic 1"	1	42 GPM	288 BPD
Pump, Pneumatic 2"	1	135 GPM	926 BPD
Pump, Transfer Electric 3/4 HP	1	86 GPM	590 BPD
Pump, Trash 3"	1	298 GPM	2043 BPD
Vacuum Truck (3500 Gal)	1	150 GPM	3500 BPD
Vacuum Truck (900 Gal)	1	150 GPM	1000 BPD
Vacuum Truck (3000 Gal)	2	150 GPM	3000 BPD
3" Manta Ray Vacuum Skimmer	1	150 GPM	5023 BPD
Storage Equipment	**Qty**	**Capacity (Name Plate) [Gallons]**	**Total Capacity [Barrels]**
Recovery Tank	2	500 Gal	11 BBLS
Recovery Tank	3	1000 Gal	24 BBLS
Recovery Tank	1	2000 Gal	46 BBLS
Boom		**Quantity**	**Contracted/ Owned**
Boom, 24" Acme		700 feet	Owned
Boom, 18" Acme		600 feet	Owned
Boats		**Quantity**	**Contracted/ Owned**
Boat, 12' work (without motor)		1	Owned
Boat, 20' Pontoon (with motor)		1	Owned
Boat, 14' work (with motor)		1	Owned
Other		**Quantity**	**Contracted/ Owned**
Trailer, Emergency Response 16' fully outfitted		1	Owned

nyetech
New York Environmental Technologies, Inc.

PO Box 24398, Rochester, NY 14624 (585) 436.5660 Fax: (585) 436.6139

TIME AND MATERIAL RATES

TABLE OF CONTENTS

nyetech
New York Environmental Technologies, Inc.

PO Box 24398, Rochester, NY 14624 (585) 436.5660 Fax: (585) 436.6139

TIME AND MATERIAL RATES

(Confidential. For use by New York Environmental Technologies, Inc. employees and approved customers only. Any other use must be approved by the Legal Department.)

(Complete Price List includes 18 pages)

LABOR	PRICE / UNIT

All New York Environmental Technologies, Inc. personnel have received special 40-hour health and safety training and annual refresher courses as required by OSHA to work with hazardous waste.

Environmental Sampling Technician	55.00 / hour
Environmental Coordinator	58.00 / hour
Equipment Operator	57.00 / hour
Field Technician	50.00 / hour
Foreman	59.00 / hour
Geologist / Engineer / Environmental Scientist	79.00 / hour
Geoscience Technician	58.00 / hour
Professional Engineer	110.00 / hour
Health and Safety Coordinator	75.00 / hour
Incident Commander	86.00 / hour
Spill Coordinator (Off-Site)	71.00 / hour
Operations Supervisor	73.00 / hour
Project Manager	75.00 / hour

Prevailing Wage, if applicable (Environmental Technician)	81.00 / hour
Prevailing Wage, if applicable (Vacuum Truck Operator)	91.00 / hour
Prevailing Wage, if applicable (Plumber)	85.00 / hour
Prevailing Wage, if applicable (Mechanical Technician) (inc. truck & tools)	119.00 / hour

TRUCKS / TRANSPORT / STORAGE VEHICLES ..... PRICE / UNIT

[*] *Mobilization/demobilization will be charged in addition to rental.*

[H] *Vacuum Trucks are outfitted with 100' of hose. See the Pumps, Compressors, Generators, and Hoses Section for additional hose charges.*

Forklift (2,000 lb.) (transportation extra) [*] ..... 245.00 / shift
Frac Tank (22,000 gal) [*] ..... Quoted
Trailer, Spill Response Equipped (tow behind) ..... 36.00 / hour
Trailer, Spill Response Equipped (tow behind) ..... 225.00 / shift
Vacuum Truck, Industrial (2,800 gal) ..... 86.00 / hour
Vacuum Truck, Low Profile (1,000 gal) ..... 86.00 / hour
Vacuum Truck Cleaning (light oil and water) [H] ..... 200.00 / minimum
(heavy oil and disposal is extra)
Vehicle, Light Duty (Pick-up, Jeep, Van) ..... 28.00 / hour
Vehicle, Light Duty (Pick-up, Jeep, Van) ..... 160.00 / shift
Vehicle, Medium Duty (Cube Vans, Econovan) with no liftgate ..... 37.00 / hour
Vehicle, Medium Duty (Cube Vans, Econovan) with no liftgate ..... 220.00 / shift
Vehicle, Medium Duty Van (< 18') with power liftgate ..... 47.00 / hour
Vehicle, Heavy Duty Van (>18') with power liftgate ..... 53.00 / hour

HEAVY EQUIPMENT *	**PRICE / UNIT**

* *Mobilization/demobilization will be charged in addition to rental.*

Excavator (Komatsu PC200 or equivalent) (8-hour minimum)	Quoted
Bull Dozer (Komatsu D37E or equivalent)	Quoted
Backhoe (JCB 1400 or equivalent)	65.00 / hour
Skid Steer Loader (Bobcat or equivalent)	53.00 / hour
Dump Truck (10-wheel, permitted)	65.00 / hour
Heavy Equipment Trailer (20 ton – truck or tractor is extra)	29.00 / hour
Heavy Equipment Trailer (20 ton – truck or tractor is extra)	163.00 / shift
Heavy Equipment Trailer (7 ton - truck or tractor is extra)	28.00 / hour
Heavy Equipment Trailer (truck or tractor is extra)	155.00 / shift
Rolloff Box (delivery extra)	Quoted
Rolloff Box (delivery extra)	Quoted
Drill Rig (CT 150 or equivalent)	Quoted
Drill Rig (CT 250 or equivalent)	Quoted

WATER BORNE EQUIPMENT	**PRICE / UNIT**
Boom, Harbor Containment (rental) per foot	6.75 / week
Boat, Power (16' - 18') with motor	59.00 / hour
Boat, Power (pontoon) with motor	79.00 / hour
Boat, Power (<16')	47.00 / hour
Boat, Without Motor	121.00 / shift

PUMPS, COMPRESSORS, GENERATORS, AND HOSES	**PRICE / UNIT**
Air Compressor (<50 cfm with 100' Hose)	95.00 / shift
Air Compressor (50 to 150 cfm with 100' Hose)	131.00 / shift
Air Compressor (>150 cfm with 100' Hose)	163.00 / shift
Generator (<2,500 watt)	82.00 / shift
Generator (2,500 to 5,000 watt)	131.00 / shift
Hose, Air Compressor per 50' length	13.50 / shift
Hose, Chemical Transfer (1") up to 25’	53.00 / shift
Hose, Chemical Transfer – per foot – after 25’	10.00 / foot
Hose, Transfer (2") per 10' length	12.00 / shift
Hose, Transfer (3") per 10' length	15.00 / shift
Hose, Transfer (4") per 10' length	20.00 / shift
Hose, Transfer (6") per 10' length	22.00 / shift
Hose, Fire per 50' length	35.00 / shift
(Additional Hoses in Section F of Supplies and Materials)	
Pump, Basement Sump	35.00 / shift
Pump, Centrifugal (1")	55.00 / shift
Pump, Centrifugal (2")	85.00 / shift
Pump, Manual Transfer	40.00 / shift
Pump, Pneumatic Chemical (up To 1")	145.00 / shift
Pump, Pneumatic (1")	85.00 / shift
Pump, Pneumatic (2")	Quoted
Pump, Pneumatic (3")	Quoted

Pump, Submersible (1")	85.00 / shift
Pump, Submersible (2")	Quoted
Pump, Submersible (3")	Quoted
Pump, Utility Trash (2")	90.00 / shift
Pump, Utility Trash (3")	110.00 / shift

REMEDIATION AND RECOVERY EQUIPMENT	**PRICE / UNIT**
Anemometer	50.00 / shift
Carbon Treatment Units, Liquid Phase (>10 gpm)	Quoted, Job Specific
Carbon Treatment Units, Gas Phase (>100 cfm)	Quoted, Job Specific
(carbon refills and smaller systems - see Section B of Supplies and Materials)	
Oil/Water Interface Probe	75.00 / shift
Pump, Peristaltic	62.00 / shift
Recovery Tank (300 gal) (one-week minimum)	50.00 / week
Recovery Tank (500 gal) (one-week minimum)	75.00 / week
Recovery Tank (1,000 gal) (one-week minimum)	100.00 / week
Recovery Tank (1,500 gal) (one-week minimum)	150.00 / week
Water Level Indicator	35.00 / shift

MISCELLANEOUS TOOLS AND EQUIPMENT	**PRICE / UNIT**

* *Mobilization/demobilization will be charged in addition to rental.*

Acetylene Torch System	150.00 / shift
Air Hammer / Impact Wrench	40.00 / shift
Drum Cart	40.00 / shift
Exhaust Fan, Explosion Proof (<24")	75.00 / shift
Exhaust Fan, Explosion Proof (>24")	80.00 / shift
Hand Tool Kit	28.00 / shift
Heater, Salamander or Propane Heater	60.00 / shift
Jackhammer with 50' hose	60.00 / shift
Jackhammer Bits	20.00 / shift
Ladder (<12')	17.00 / shift
Ladder, Extension	28.00 / shift
Lamp, Explosion-Proof	40.00 / shift
Lighting System, Portable	67.00 / shift
Plate Tamper or Jumping Jack	115.00 / shift
Pressure Washer, Hot and Cold with generator (5,000 psi)	280.00 / shift
Pressure Washer, Hot Water (5,000 psi)	200.00 / shift
Pressure Washer, Hot Water/Steam (up To 1,500 psi)	200.00 / shift
Pressure Washer, Cold Water (up To 2,000 psi)	95.00 / shift
Pressure Washer, Cold Water (2,000 - 3,000 psi)	155.00 / shift
Saw, Chain	62.00 / shift
Saw, Cut Off, with blade (14" walk-behind, diamond tip blades extra)	115.00 / shift
Saw, Cut Off, with blade (hand-held)	95.00 / shift
Saw, Reciprocating with blade	50.00 / shift
(Replacement Blades - see Section F of Supplies and Materials)	
Vacuum Cleaner, HEPA (filters extra)	295.00 / shift
Vacuum Cleaner, Wet/Dry	55.00 / shift

Vacuum Drum Header (used with vacuum truck) ..... 30.00 / shift
Vacuum Drum Header (used with air compressor) ..... 95.00 / shift
Weed Cutter ..... 50.00 / shift

SAMPLING EQUIPMENT **PRICE / UNIT**

Bailers, Stainless Steel ..... 40.00 / shift
Bailers, Teflon ..... 40.00 / shift
Bailers, Clear PVC ..... 12.00 / shift
(Additional Bailers are in Section B of Supplies and Materials)
Personal Sampling Pump, Low Flow (two-shift minimum) ..... 50.00 / shift
Personal Sampling Pump, High Flow (two-shift minimum) ..... 45.00 / shift
Personal Sampling Pump Calibration Unit ..... 62.00 / shift
Sampler, Kemmerer ..... 35.00 / shift
Sampler, Bacon Bomb ..... 45.00 / shift
Sludge Judge ..... 35.00 / shift
Soil Corer ..... 50.00 / shift
Soil Auger ..... 50.00 / shift

Environmental Site Assessments & Audits ..... Quoted, Job Specific

---

INSTRUMENTATION AND MONITORING EQUIPMENT **PRICE / UNIT**

Aim Multigas Detector ..... 130.00 / shift
Dräger HAZMAT Kit ..... 62.00 / shift
(Dräger Detection Tubes extra - see Section C of Supplies and Materials)
Ecolyzer Oxygen Monitor ..... 115.00 / shift
Explosion Meter/O_2 Meter ..... 67.50 / shift
Field Screening Kit (some tests extra) ..... 140.00 / shift
Metal Detector ..... 45.00 / shift
Multigas Meter (O_2, LEL, CO, H_2S) ..... 180.00 / shift
Photoionization Detector ..... 135.00 / shift
Tank Testing, Cathodic ..... Quoted, Job Specific
Tank Testing, Tightness ..... Quoted, Job Specific
Tank Wall Thickness Testing, Ultrasonic ..... 150.00 / shift
Underground Utility Detector ..... 100.00 / shift

HEALTH AND SAFETY / PERSONAL PROTECTIVE EQUIPMENT **PRICE / UNIT**

Personal Protective Clothing, Level A, per Person ..... 785.00 / shift
(Includes SCBA or in-line air with fully encapsulated vapor protective Level A suit)
Personal Protective Clothing, High Level B, per Person ..... 415.00 / shift
(Includes SCBA or in-line air with high level chemical resistant suit)
Personal Protective Clothing, Low Level B, per Person ..... 285.00 / shift
(Includes SCBA or in-line air with standard chemical resistant suit)
Personal Protective Clothing, High Level C, per Person ..... 100.00 / shift
(Includes air purifying respirator with chemical resistant suit)
Personal Protective Clothing, Low Level C, per Person ..... 85.00 / shift
(Includes air purifying respirator with optional polycoated Tyvek or white Tyvek suit)

Personal Protective Clothing, Level D, per Person ..... 45.00 / shift
(Includes basic safety equipment with polycoated Tyvek or white Tyvek suit)

Levels A and B include one personal protective suit, one pair of inner and outer gloves, one bottle of air, air purifier and escape pack. If an air compressor is required, add the compressor rental cost. Level C includes one personal protective suit, one pair of inner and outer gloves, and one respirator cartridge set. If double suits are required, add the cost of the inner suit. Special use suits, gloves, or other personal protective equipment may change the above prices. All personal protective equipment charges are per person.

Air-Purifying Respirator with one cartridge set ..... 55.00 / shift
Cascade System ..... 160.00 / shift
Self-Contained Breathing Apparatus Standby Unit ..... 170.00 / shift
Eye Wash Station (Portable) ..... 35.00 / shift
Chest Waders ..... 40.00 / shift
Decontamination, Personnel Unit ..... 40.00 / shift
Decontamination, Personnel Shower ..... 170.00 / shift
Decontamination System, Full (wet/heavy contamination) ..... 280.00 / shift
Decontamination System, Limited (wet/minor contamination) ..... 225.00 / shift
Decontamination System, Full (dry for water insolubles or reactives) ..... 175.00 / shift
Fire Extinguisher (ABC, 20 LB) ..... 20.00 / shift
Fire Extinguisher Refill (ABC, 20 LB) ..... 25.00 / shift
Fire Extinguisher (Class D, Metal Fires) (refills are extra) ..... 55.00 / shift
Safety Harness with Life Line ..... 28.00 / shift
Safety Fence, per 100 ft (one-week minimum) ..... 25.00 / day
Traffic Control (DOT approved road signs with stands, set of 2) ..... 75.00 / shift
Tripod Retrieval System, Confined Space Entry ..... 85.00 / shift

---

COMMUNICATIONS EQUIPMENT **PRICE / UNIT**

Camera, Digital (includes up 10 processed pictures) ..... 40.00 / shift
2-Way Radio Communication (per set) ..... 28.00 / shift

SUPPLIES AND MATERIALS

A. Drums and Containers

	Price / Unit
Drum, 1A1, 16 gauge, 55 gal (Steel, Closed top 17C)	62.00 / each
Drum, 1A2, 16 gauge, 55 gal (Steel, Open top 17C)	62.00 / each
Drum, 1A1, 20/18 gauge, 55 gal (Steel, Closed top 17E)	52.00 / each
Drum, 1A1, 20 gauge, 30 gal (Steel, Closed top 17E)	52.00 / each
Drum, 1A2, 18/16 gauge, 55 gal (Steel, Open top 17H)	50.00 / each
Drum, 1A2, 18 gauge, 30 gal (Steel, Open top 17H)	48.00 / each
Drum, 1H1, 55 gal (Poly, Closed top, DOT 34)	52.00 / each
Drum, 1H2, 55 gal (Poly, Open top, DOT 34)	65.00 / each
Drum, 1H1, 30 gal (Poly, Closed top, DOT 34)	43.00 / each
Drum, 1H2, 30 gal (Poly, Open top)	48.00 / each
Drum, 1H2, 15 gal (Poly, Open top)	34.00 / each
Drum 1A1, 15 gal (Steel, Open top)	34.00 / each
Drum, 1A2, Overpack, 110 gal (Steel)	365.00 / each
Drum, 1A2, Overpack, 85 gal (Steel)	157.00 / each
Drum, 1H2, Overpack, 95 gal (Poly)	220.00 / each
Drum, 1G2, 30 gal (Fiber, Open top)	40.00 / each
Drum Lids (17H/17C)	17.50 / each
HAZMAT Box, 4G, 36" x 36" x 36"	160.00 / each
Liners, Drum, 85 gal	17.50 / each
Liners, Drum, 55 gal	12.50 / each
Liners, Rolloff 22'	79.00 / each
Pail, 1H2, 5 gal (Plastic)	17.00 / each
Pail, 1A2, 5 gal (Steel)	17.00 / each
Poly Bags, HD, 85 gal	1.89 / each
Shipping Labels	2.00 / each

B. Geoscience Supplies

	Price / Unit
Bailer, Clear PVC, 1.66" x 15"	70.00 / each
Bailer, Disposable Polyethylene, 1.5" x 36"	15.00 / each
Carbon, Activated, for Gas Treatment Units	4.89 / pound
Carbon, Activated, for Water Treatment Units	3.75 / pound
Carbon Treatment Units, Liquid Phase (up to 10 gpm, includes carbon)	760.00 / unit
Carbon Treatment Units, Gas Phase (up to 100 cfm, includes carbon)	945.00 / unit
Carbon Drum Lids (55 gal)	50.00 / each

C. Health and Safety Equipment

	Price / Unit
Boots, Pullover	25.00 / pair
Boots, PVC, with steel toe	30.00 / pair
Boot Covers, HAZMAT	15.00 / pair
Bottle Refill, SCBA	28.50 / bottle
Bottle Refill, Egress	22.50 / bottle
Bottle Refill, In-line Air	50.00 / bottle
Glove Liners	2.85 / pair
Gloves, Butyl	56.00 / pair
Gloves, Leather Palm, Work	3.75 / pair

Gloves, Neoprene	17.50 / pair
Gloves, Nitrile	3.25 / pair
Gloves, PVC	3.50 / pair
Gloves, Sampling (Standard)	2.85 / pair
Gloves, Silver Shield	10.50 / pair
Gloves, Viton	168.75 / pair
Gloves, Winter Work	12.50 / pair
Hard Hat with Face Shield	28.00 / each
Hip Waders	95.00 / each
Respirator Cartridges (OV, AG, or HEPA)	15.00 / set
Respirator Cartridges (HEPA/Combination)	25.00 / set
Safety Glasses/Goggles	6.75 / each
Suit Liners	5.00 / each
Suit, Barricade Coverall and Welded Seams	85.00 / each
Suit, Level A, Fully-Encapsulated	730.00 / each
Suit, Level B, Barricade, Fully-Encapsulated	185.00 / each
Suit, Polycoated Tyvek	16.00 / each
Suit, PVC Rain Suit (three-piece)	28.00 / each
Suit, Saranex	28.00 / each
Suit, White Tyvek	11.50 / each

D. Sorbent Materials **Price / Unit**

Oil Only

Boom, 410S, 4" x 10" (4/bale)	126.00 / bale
Boom, 810, 8" x 10" (4/bale)	226.00 / bale
Boom, 410, Double 4" x 10" (4/bale)	247.00 / bale
Pads, Anti Static, 3/8" x 17" x 19" (100/bale)	77.00 / bale
Pads, Anti Static, 3/8" x 38" x 34" (25/bale)	97.00 / bale
Pads, Anti Static, 3/16" x 17" x 19" (50/bale)	27.00 / bale
Pads, 3/8" x 38" x 34" (50/bale)	165.00 / bale
Pads, 3/8" x 17" x 19" (100/bale)	92.00 / bale
Pads, 3/16" x 17" x 19" (200/bale)	95.00 / bale
Pads, Smart, 100 Grade (100/bale)	77.00 / bale
Pillows, Oil, 8" x 18" (10/bale)	116.00 / bale
Pom-Poms, Heavy Oil (30/box)	65.00 / box
Roll, Anti Static, A144, 3/8" x 19" x 144'	176.00 / roll
Roll, 3/16" x 38" x 288'	153.00 / each
Roll, 3/8" x 19" x 144' (2/bale)	153.00 / each
Roll, Smart Oil, 38" x 144'	123.00 / each
Roll, 38" x 144'	153.00 / each
Socks, Poly, Oil 3" x 46" (12/case)	116.00 / case
Sorbent, Loose, Polypropylene Particulate (25 lbs).	116.00 / bag
Sweep, 3/8" x 19" x 100'	110.00 / each

Universal

Industrial Rug, Universal, 18" x 300' (2 rolls/bale)	265.00 / bale
Industrial Rug, Universal, 36" x 300'	265.00 / each
Loose, Clay (50 lbs)	11.75 / bag
HAZMAT Pillow, 14" x 16" x 1 1/2" (14/bale)	155.00 / bale
Industrial Square, 18" x 18" (100/bale)	89.00 / bale

Socks, Clay, 3" x 38" (8/case)	38.00 / case
Socks, Lite, 3" x 46" (40/case)	89.00 / case
Socks, General, 2.6" x 42" (40/case)	74.00 / case

E. Decontamination Chemicals **Price / Unit**

Alconox (decontamination powder)	11.25 / pound
Capsur (PCB Solvent System)	79.00 / gallon
Citrus Degreaser (Jansolve or equivalent)	25.00 / gallon
Distilled Water	5.50 / gallon
General Degreaser	17.00 / gallon
Hexane	35.00 / gallon
Penetone (PCB decontamination)	28.00 / gallon
Phosphate-free Decontamination Solution (Liquinox or equivalent)	50.00 / gallon
Trisodium Phosphate (5 LB pail)	11.25 / pail

F. Miscellaneous	Price / Unit
Brooms, Industrial	35.00 / each
Concrete Mix (80 lbs)	11.25 / bag
Dry Ice (60 lbs)	55.00 / box
Fuel Oil #2 (subject to change)	5.50 / gallon
Grass Seed, Commercial	8.00 / pound
Hose, ABS Corrugated, 3 - 4"	1.25 / foot
Hose, Corrugated, 6"	3.70 / foot
Hose, Clear, Flexible Polyethylene, 1"	2.70 / foot
Hose, Black Polyethylene, 1"	0.45 / foot
Lime (20 kg bag)	12.25 / bag
Nitrogen Cylinder	40.00 / each
Paper, pH (100/vial)	11.25 / each
Pigs, Poly (line cleaning), 2 - 4"	13.50 / each
Pigs, Poly (line cleaning), 6"	24.75 / each
Pigs, Poly (line cleaning), 8"	36.00 / each
Pigs, Poly (line cleaning), 10 - 12"	54.00 / each
Pigs, Poly (line cleaning), 15"	79.00 / each
Pigs, Poly (line cleaning), 16"	107.00 / each
Pigs, Poly (line cleaning), 18"	140.00 / each
Pigs, Poly (line cleaning), 30"	535.00 / each
Plug & Dike (1.5 LB tub)	35.00 / tub
Polyethylene Sheeting, 6 mil 20' x 100'	95.00 / roll
Propane Cylinder Refill (20 LB)	48.00 / each
Rags, 50 lbs	1.00 / pound
Rope, 1/4" Nylon	0.35 / foot
Rope, 1/8" Poly	0.18 / foot
Sample Jars, Glass (over 1 liter)	5.50 / each
Sample Jars, Glass, (1 liter or less)	4.00 / each
Sample Jars, Plastic, (1 liter or less)	3.50 / each
Sample Vials, Glass, (125 ml or less)	2.85 / each
Sample Tubes, Glass	4.50 / each
Sampler, Glass Drum Thiefs	4.50 / each
Sand (50 lbs)	9.00 / bag
Sand (100 lbs)	15.75 / bag
Saw, Cut Off, Replacement Blade (14" walk-behind)	29.00 / each
Saw, Cut Off, Replacement Blade (hand-held)	16.00 / each
Saw, Reciprocating, Replacement Blade	11.25 / each
Soda Ash (50 lbs)	29.00 / bag
Sodium Hypochlorite	3.15 / gallon
Spill Kit, Mercury	165.00 / each
Squeegees, Industrial	45.00 / each
Straw	9.00 / bale
Tape, Caution, 3" x 1000'	28.00 / roll
Tape, Duct Tape	5.00 / roll
Tape, Surveyors Flagging, 1" x 100'	5.00 / roll
Test Kit, Dexsil Field Test (oil, soil, water)	40.00 / each
Vermiculite (6 cu ft)	35.00 / bag

nyetech
New York Environmental Technologies, Inc.

PO Box 24398, Rochester, NY 14624 (585) 436.5660 Fax: (585) 436.6139

ADDENDUM TO TIME AND MATERIAL RATES JANUARY 2014

Asbestos Abatement

LABOR

	Price/Unit
Asbestos Supervisor	65.00 / hour
Asbestos Field Technician	60.00 / hour
Asbestos Supervisor (Prevailing Wage, if applicable)	80.00 / hour
Asbestos Field Technician (Prevailing Wage, if applicable)	75.00 / hour

*Time and one half charges apply to any work performed before 7:30 a.m. and after 4:30 p.m. and on Saturdays. Double time charges apply to all worked performed on Sundays and major holidays.

EQUIPMENT

	Price/Unit
Remote Decontamination Trailer	225.00 / shift
Generator	80.00 / shift
Airless Sprayer	40.00 / shift
Elec 3-1 Splitter	5.75 / shift
Extension Cords	5.75 / shift
GFI Whips	5.75 / shift
HEPA Vac	85.00 / shift
Heap Vac Filter	405.00 / each
Hose, Garden	5.75 / shift
Hot Water Heater	35.00 / shift
Hudson Sprayer	11.25 / shift
Micro Trap (Negative Air Machine)	56.00 / shift
PAPR's	22.50 / shift
Panel Box	56.25 / shift
Personal Pumps (Air Samples)	35.00 / shift
Racal PAPR Filters	18.35 / each
Respirator 1/2 Face	6.00 / shift
Respirator Full Face	11.25 / shift
Single Decontamination Shower	56.00 / shift
Water/Filtration Unit	35.00 / shift

MATERIALS

	Price/Unit
Air Sample Cassettes	1.60 / each
Barrels, Fiber 15-30 gallon	30.00 / each
Danger Labels 500/roll	78.00 / roll
Danger Signs	8.00 / each
Danger Tape	20.00 / roll
Disposable Towels	60.00 / case
Disposal (“A”) Bags (33x50) or (30x40)	79.00 / roll
Double Sided Tape	25.00 / roll
Duct Tape 24/case	190.00 / case
Encapsulate Foster	25.00 / gallon
Foam Sealant	10.50 / can
Gloves, Leather Palm	3.75 / pair
Gloves, Rubber - 21 mil	20.00 / pair
Glovebags - Regular (44x60)	9.00 / each
HEPA-Filter (24 x 24 x 11) (negative air machine)	265.00 / each
Mastic Remover, 5 gallon	169.00 / each
North Respirator Cartridges	5.50 / each
Poly 6 Mil F.R. (20 x 100)	110.00 / roll
Poly Duct 12 x 500	76.50 / roll
Poly Duct Rigid 12" (25' roll)	40.50 / roll
Poly Reinforced (20 x 100)	210.00 / roll
Polypropylene Suits (3x) 25/case	88.00 / case
Pre-Filters (negative air machine)	1.35 / each
Rags 50 lbs	45.00 / case
Respirator, Half Face (Large)	35.00 / each
Respirator Wipes 100/box	25.00 / box
Secondary Filters (2") (negative air machine)	5.65 / each
Spray Glue/Adhesive (12/case)	5.85 / each
Staples	5.75 / box
Tyvek	210.00 / case
Utility Knife Blades 100/box	15.00 / box
Vacuum Bags	8.00 / each
Water Filters (All Sizes)	6.75 / each
Wet Wrap 80/case	585.00 / case
Wetting Agent	18.50 / gallon

OTHER

All Notification and Variance Fees will be invoiced at cost + 30%, payable in advance.

Personal OSHA Air Monitoring Samples: 14.00 / each

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
U.S. Coast Guard
National Strike Force
Coordination Center

1461 North Road Street
Elizabeth City, NC 27909
Staff Symbol:
Phone: 252-331-6000
FAX: 252-331-6012

16465

DEC - 3 2009

New York Environmental Technologies, Inc
Attn: Steven Rinker
230 McKee Road
Rochester, NY 14611

Dear Mr. Rinker:

Your application for classification as an Oil Spill Removal Organization (OSRO) has been reviewed and processed as outlined in the Coast Guard OSRO Classification Guidelines dated 27 April 2001. You have been assigned OSRO classification number 196; please use this number in all future correspondence to this office. Your company has met several classifications which are listed in enclosure (1).

Our files will be updated to reflect your current status. You are responsible for informing your clients of any changes to your status. If there are changes to your equipment or sites, please make those changes in the Response Resource Inventory (RRI) database, which can be accessed at https://cgrri.uscg.mil. Your classifications will be listed on the OSRO Classification Matrix available at https://cgrri.uscg.mil/rriadmin/reports/webclassificationreport.aspx.

If you have any questions or would like more information regarding your classifications, please contact the NSFCC using the contact information found in enclosure (2).

Thank you for your participation in the OSRO Classification program.

Sincerely,

R. E. Walker
Captain, U.S. Coast Guard

Enclosures: (1) NYET Classifications
(2) NSFCC Contact List

Copy: COMDT (CG-5332, CG-5431)
CGD Ninth (dr)
SECTOR Buffalo
DOG (DG-33)
EPA Regions 2
PHMSA (HQ, Eastern)

United States Coast Guard Response Resource Inventory Administration Site

Main Menu Log Off Help

Skip Navigation

CLASSIFICATION DATA

New York Environmental Technologies, Inc. - OSRO Number: 196

Mechanical Classifications:

COTP Zone	Operating Environment	Facility MMPD	Facility WCD1	Facility WCD2	Facility WCD3	Vessel MMPD	Vessel WCD1	Vessel WCD2	Vessel WCD3
Buffalo - DISTRICT 9	River or Canal	✓				✓			
Buffalo(Oswego, NY) - DISTRICT 9	River or Canal	✓				✓			

Go Back

EP&S of Vermont

2775 Broadway, Suite 250
Cheektowaga, NY 14227

866-597-0001

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 BRANCH RESPONSE EQUIPMENT MINIMUM ON HAND INVENTORY

	BUFFALO	PITTSBURGH	SYRACUSE	WILLIAMSPORT
WATER BORNE EQUIPMENT				
BOOM, HARBOR CONTAINMENT	1000 FT.	200 FT.	1000 FT.	200 FT.
BALES OF SORBENT PADS	72	43	92	72
PUMPS, COMPRESSORS, GENERATORS & HOSES				
GENERATORS < 2,500 WATT TO 5,000	2	1	3	2
HOSE, AIR COMPRESSOR (200 FT)	1	1	3	1
HOSE, CHEMICAL TRANSFER - 1" (100 FT)	1	--	1	1
HOSE, TRANSFER - 2"	300 FT.	200 FT.	500 FT.	200 FT.
HOSE, TRANSFER - 3"	300 FT.	150 FT.	500 FT.	250 FT.
HOSE, FIRE (600 FT)	1	1	1	1
PUMP, BASEMENT SUMP	2	1	3	1
PUMP, CENTRIFUGAL - 1", 2"	1	--	2	1
PUMP, MANUAL TRANSFER	4	2	4	3
PUMP, PNEUMATIC - 1", 2"	1	--	2	1
PUMP, SUBMERSIBLE - 1", 2"	1	1	1	1
PUMP, UTILITY TRASH - 2", 3"	1	1	3	1
WATER TABLE DEPRESSION PUMP	2	--	1	--
REMEDIATION & RECOVERY EQUIPMENT				
ACID WASH SYSTEM (PUMPS, HOSES, TANK)	1	--	1	--
ANEMOMETER	2	--	2	--
BAG FILTER HOUSING (80 GPM)	1	--	1	1
BIO-REMEDIATION APPLICATOR	1	1	2	1
DEWATERING SYSTEM MANIFOLD	1	--	1	--
DEWATERING SYSTEM	1	--	1	--
FIELD SAMPLING KIT	1	1	2	1
FILTER SCAVENGER	1	--	1	--
FLOWMETER - 1", 2" BRASS MECHANICAL TOTALIZER	1	--	2	1
MAGNAHELIC GAUGES	1	1	2	1
MULTIMETER, ELECTRIC	1	1	1	1
OIL/WATER SEPARATOR (20 GPM)	2	1	2	1
OIL/WATER INTERFACE PROBE	1	1	1	1
PUMP, PERISTALTIC	1	--	1	--
RECOVERY TANKS (500 GAL, 1000 GAL, 1500 GAL)	1 EACH	1 EACH	2 EACH	1 EACH
LIQUID GAC (55 GAL) DRUMS-BUILT & READY FOR USE	4	--	4	2
PORTABLE HVE REMEDIATION SYSTEM	1	--	--	--
REDI-FLOW 2 PUMP & CONTROLLER	1	--	--	--
REGENERATIVE BLOWER (ROTON 1 HP) IN A PORTABLE REMEDIATION SHED WITH KNOCKOUT	1	--	1	--
ROTARY VANE AIR SPARGING UNIT (15PSI-18 CFM)	1	--	1	--
SKIMMER, DUCK BILL -2"	1	--	--	--
SOIL VAPOR EXTRACTION PILOT TEST SYSTEM (BLOWER, GAUGES, HOSES)	1	--	--	--

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 BRANCH RESPONSE EQUIPMENT MINIMUM ON HAND INVENTORY

WATER LEVEL INDICATORS	1	1	1	1
MISCELLANEOUS TOOLS AND EQUIPMENT				
ACETYLENE TORCH SYSTEM	1	1	1	1
AIR CLEANER, CARBON (100-1,000 CFM)	2	--	2	1
AIR HAMMER/IMPACT WRENCH	1	1	1	1
DRILLING KIT, MC306 ALUMINUM TANKER ROLLOVER	1	--	1	--
DRUM CART	2	2	2	2
EXHAUST FANS, EXPLOSION PROOF - 24"	1	1	2	1
HAND TOOL KITS	1	1	1	1
HEATERS - KEROSENE	1	--	1	--
JACKHAMMER WITH 50' HOSE (AIR)	1	--	2	--
JACKHAMMER WITH 50' HOSE (ELECTRIC)	1	--	2	--
JACKHAMMER BITS	ASSORTED	--	ASSORTED	--
LADDER (<12') LADDER, EXTENSION	1	1	1	1
LAMP, EXPLOSION-PROOF	1	1	2	1
LIGHTING SYSTEM, PORTABLE	2	1	2	1
LINE JETTER	1	--	1	--
LINE SNAKE	1	1	1	1
PLATE TAMPER OR JUMPING JACK	1	--	1	--
PRESSURE WASHER, HOT WATER (5,000 PSI)	1	--	1	--
PRESSURE WASHER, HOT WATER/STEAM (UP TO 1,500 PSI)	1	1	1	1
PRESSURE WASHER, COLD WATER (UP TO 2,000 PSI)	2	1	2	1
PRESSURE WASHER, COLD WATER (2,000-3,000 PSI)	1	--	1	1
SAW, CHAIN	1	1	1	1
SAW, CUT OFF, WITH BLADE (14" WALK-BEHIND)	1	--	1	--
SAW, CUT OFF, WITH BLADE (HAND-HELD)	1	1	1	1
SAW, RECIPROCATING WITH BLADE	1	1	2	1
VACUUM CLEANER, WET/DRY	2	2	1	2
VACUUM DRUM HEADER (USED WITH VAC TRUCK)	1	1	1	1
VACUUM DRUM HEADER (USED WITH AIR COMPRESSOR)	1	--	1	--
WEED CUTTER	1	--	1	1
WELDER, ARC	1	--	1	--
SAMPLING EQUIPMENT				
PERSONAL SAMPLING PUMP, LOW FLOW	1	1	1	1
PERSONAL SAMPLING PUMP, HIGH FLOW	1	1	1	1
PERSONAL SAMPLING PUMP CALIBRATION UNIT	1	1	1	1
SAMPLER, KEMMERER	1	--	--	--
SAMPLER, WEIGHTED BOTTLE	1	1	1	1
SLUDGE JUDGE	1	1	1	1
SOIL CORER	1	1	1	1
SOIL HAND AUGER	1	1	1	1

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 BRANCH RESPONSE EQUIPMENT MINIMUM ON HAND INVENTORY

SOIL BORING SYSTEM (KVA Hefty system)	1	--	1	--
WATER SAMPLING KIT FOR KVA	1	--	1	--
INSTRUMENTATION AND MONITORING EQUIPMENT				
AIR MONITORING PUMP, CALIBRATION UNIT	1	1	1	1
DISSOLVED OXYGEN METER	1	--	1	--
OXYGEN MONITOR	1	1	1	1
FIELD SCREENING KIT (SOME TESTS EXTRA)	1	1	1	1
MERCURY SPILL KIT	1	1	2	2
INDOOR AIR QUALITY MONITOR (DRAEGER MULTIWARN OR EQUIVALENT)	1	1	2	1
LEAD-IN-AIR TEST	1	--	1	--
METAL DETECTOR	1	--	1	--
MULTIGAS METER (O_2, LEL, CO, H_2S)	2	1	2	4
pH,TEMPERATURE	1	1	2	1
pH,SENSOR (HAND-HELD INSTRUMENT)	1	1	1	1
PHOTOIONIZATION DETECTOR	2	1	3	1
SURVEY FLAGS	10	10	10	10
SURVEY TRANSIT AND ROD	1	1	1	1
TEMPERATURE SENSOR WITH PROBE (HANNA INSTRUMENTS)	1	1	1	1
HEALTH AND SAFETY/PERSONAL PROTECTIVE EQUIPMENT				
PERSONAL PROTECTIVE CLOTHING, HIGH LEVEL B *(Includes SCBA or in-line air with high level chemical resistant suit)*	✓	✓	✓	✓
PERSONAL PROTECTIVE CLOTHING, LOW LEVEL B *(Includes SCBA or in-line air with high level chemical resistant suit)*	✓	✓	✓	✓
PERSONAL PROTECTIVE CLOTHING, HIGH LEVEL C *(Includes SCBA or in-line air with high level chemical resistant suit)*	✓	✓	✓	✓
PERSONAL PROTECTIVE CLOTHING, LOW LEVEL C	✓	✓	✓	✓
PERSONAL PROTECTIVE CLOTHING, LEVEL D	✓	✓	✓	✓
AIR-PURIFYING RESPIRATOR WITH CARTRIDGE SETS	✓	✓	✓	✓
CASCADE SYSTEM	✓	✓	✓	✓
SELF-CONTAINED BREATHING APPARATUS STANDBY UNITS	✓	✓	✓	✓
EYE WASH STATION (PORTABLE)	✓	✓	✓	✓
CHEST WADERS	✓	✓	✓	✓
DECONTAMINATION, PERSONNEL UNIT	✓	✓	✓	✓
DECONTAMINATION SYSTEM, FULL (WET/HEAVY CONTAMINATION)	✓	✓	✓	✓

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 BRANCH RESPONSE EQUIPMENT MINIMUM ON HAND INVENTORY

DECONTAMINATION SYSTEM, FULL (DRY FOR WATER INSOLUBLES OR REACTIVES)	✓	✓	✓	✓
FIRE EXTINGUISHERS (ABC, 20#)	✓	✓	✓	✓
FIRE EXTINGUISHERS (CLASS D, METAL FIRES)	✓	✓	✓	✓
HIP WADERS	✓	✓	✓	✓
LOCKOUT/TAGOUT SYSTEM	✓	✓	✓	✓
SAFETY HARNESS WITH LIFE LINE	✓	✓	✓	✓
SAFETY FENCE	✓	✓	✓	✓
TRAFFIC CONTROL (CONES, FLAGS, CAUTION TAPE)	✓	✓	✓	✓
TRIPOD RETRIEVAL SYSTEM, CONFINED SPACE ENTRY	✓	✓	✓	✓

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 VEHICLE EQUIPMENT LIST

Branch	Vehicle #	Equipment Description
BUFFALO	357	1991 Mack 15 yard Dump Truck
BUFFALO	404	2005 Dodge Sprinter
BUFFALO	440	2013 Nissan Cargo Van
BUFFALO	461	2006 Dodge Sprinter
BUFFALO	575	2014 Freightliner 20' Box Truck
BUFFALO	593	2009 Ford F550 12' Box Van
BUFFALO	632	2013 Chevy Silverado 2500 Pickup
BUFFALO	762	2007 Ford F550//Cusco 900 g - Mini Vac
BUFFALO	776	2008 Kenworth / 3150 g Vac Truck
BUFFALO	805	1989 Load King Backhoe Trailer
BUFFALO	839	2012 Forest River Sunshine Trailer - Spill Trailer
BUFFALO	855	2003 Cargo Utility Trailer (spill)
BUFFALO	862	2003 Cargo Express - GEO SYSTEM
BUFFALO	899	Butterworth 10K psi Water Blaster
BUFFALO	908	1993 Caterpillar Backhoe (805) (357)
PITTSBURGH	331	2001 Kenworth Roll-off Truck
PITTSBURGH	523	2012 Ford F550-Super 12' Box Van
PITTSBURGH	572	2007 Freightliner 20' Box Truck
PITTSBURGH	623	2011 Chevy 1500 Ext Cab 4X4 Pickup
PITTSBURGH	691	2009 Ford F -150 4X4 Pickup
PITTSBURGH	719	2001 Freightliner Vac Truck
PITTSBURGH	720	2009 Mack Vac Truck - 4,000 Gallon
PITTSBURGH	721	2009 Mack Vac Truck - 4,000 Gallon
PITTSBURGH	722	2012 Peterbilt Vac Truck - 4,000 Gallon
PITTSBURGH	723	2012 Peterbilt Vac Truck - 4,000 Gallon
PITTSBURGH	831	2000 Townmaster Tandem Utility Trailer
PITTSBURGH	914	2000 Kubota L35 Backhoe (826)
PITTSBURGH	1122	Roll-off Box 20 cy
PITTSBURGH	1126	Roll-off Box 20cy
PITTSBURGH	1134	Roll-off Box 20cy
PITTSBURGH	1700	Presvac 3000 Gal Roll-off Vac Tank
SYRACUSE	10	2001 Stingray 20cc Motor Boat w/ merc 210hp
SYRACUSE	82	Jon 10' fiberglass boat w/ oars & 3.5hp merc motor
SYRACUSE	83	Jon 10' aluminum boat
SYRACUSE	130	2013 Ford Explorer
SYRACUSE	134	2012 Ford Expedition
SYRACUSE	180	2008 Chevy HHR Van
SYRACUSE	212	2012 Freightliner Tractor
SYRACUSE	214	2012 Freightliner Tractor
SYRACUSE	226	1985 International Tractor
SYRACUSE	280	2009 Freightliner Tractor
SYRACUSE	332	2005 Mack Granite Dump Truck
SYRACUSE	483	2008 Dodge Sprinter - 6 wheels -

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 VEHICLE EQUIPMENT LIST

SYRACUSE	522	2012 Ford F550-Super 12' Box Van
SYRACUSE	573	2007 Freightliner 20' Box Truck
SYRACUSE	590	2000 Ford F450 12' Box Van
SYRACUSE	591	2009 Ford F550 12' Box Van
SYRACUSE	607	2010 Ford F 150 pickup truck
SYRACUSE	611	2011 Chevy 2500 Ext Cab 4X4 Pickup
SYRACUSE	630	2013 Chevy Silverado 1500 Pickup
SYRACUSE	700	2010 Intl 3250G SS Baghouse Turbo
SYRACUSE	707	2001 Sterling LT9500 - 3700 g Vac Truck
SYRACUSE	725	2000 Freight 3500g Vac Truck
SYRACUSE	760	2007 Ford F550//Cusco 900 g - Mini Vac
SYRACUSE	778	2008 Kenworth / 3500 g SS Turbo Vac
SYRACUSE	803	2014 Car-Mate enclosed utility trailer
SYRACUSE	809	1991 Cusco 5500 g SS Vac Trailer
SYRACUSE	810	1996 Accurate Roll-Off Trailer
SYRACUSE	813	2014 Car-Mate enclosed utility trailer
SYRACUSE	814	1981 Custom 8901 Gal Tank trailer
SYRACUSE	815	1995 Haulmark Trailer / spill trailer
SYRACUSE	833	2010 Ventu Boat Trailer
SYRACUSE	841	1999 Carmate Trailer
SYRACUSE	842	1999 Carmate Trailer (GEO Probe)
SYRACUSE	843	2011 Summit Dump Trailer
SYRACUSE	844	2012 Mac rear bucket loading trailer
SYRACUSE	849	2010 Travis Trailer
SYRACUSE	851	1998 Raven Dump Trailer
SYRACUSE	852	1986 Stoughton/ 48' Box Trailer
SYRACUSE	854	2003 Bri-Mar Tilt Trailer
SYRACUSE	860	1990 Barbe 6,000 g SS Tank Trailer
SYRACUSE	888	2000 Strick Box Trailer
SYRACUSE	894	2009 Pres Vac Baghouse Trailer
SYRACUSE	900	GEO PROBE - Model 54DT
SYRACUSE	901	2001 JCB Series III Wheel loader Backhoe 4X4 drive
SYRACUSE	906	Case 760 Vibratory plow & backhoe
SYRACUSE	924	Ingersoll Rand 175 - air compressor
SYRACUSE	927	Ingersoll Rand Model P185WJD - air compressor
SYRACUSE	952	2008 Hyster 7700lb Forklift
SYRACUSE	955	2005 Toyota Forklift Model 7FG020
SYRACUSE	990	Case 680G Backhoe
SYRACUSE	993	2002 Geoprobe - Model 6610DT
SYRACUSE	1101	Roll-off Box - 20cy
SYRACUSE	1105	Roll-off Box - 20cy
SYRACUSE	1106	Roll-off Box - 20cy
SYRACUSE	1107	Roll-off Box - 20cy
SYRACUSE	1114	Roll-off Box - 40cy
WILLIAMSPORT	131	1995 GMC Suburban emergency unit
WILLIAMSPORT	215	2013 Freightliner Tractor

ENVIRONMENTAL PRODUCTS SERVICES OF VERMONT, INC.
2014 VEHICLE EQUIPMENT LIST

WILLIAMSPORT	311	2005 Volvo VHD Dump Truck
WILLIAMSPORT	330	2001 Mack Roll-off Truck
WILLIAMSPORT	334	2005 Sterling Roll-off Truck
WILLIAMSPORT	473	2008 Dodge Sprinter - 6 wheels -
WILLIAMSPORT	524	2012 Ford F550-Super 12' Box Van
WILLIAMSPORT	529	2012 Freightline 26' Box Van
WILLIAMSPORT	612	2011 Chevy 2500 Ext Cab 4X4 Pickup
WILLIAMSPORT	624	2012 Chevy 2500 Crew Cab 4X4 Pickup
WILLIAMSPORT	625	2011 Ford F250 Ext Cab 4X4 Pickup
WILLIAMSPORT	701	2002 Peterbilt 3200 Gal Vac Truck
WILLIAMSPORT	713	2012 Freightliner Vac Truck
WILLIAMSPORT	715	1999 International XR62 Guzzler Vac Truck
WILLIAMSPORT	716	2005 Peterbilt Vac Truck - 5000 gal
WILLIAMSPORT	717	2005 Peterbilt Vac Truck - 5000 gal
WILLIAMSPORT	718	2005 Peterbilt Vac Truck
WILLIAMSPORT	781	2008 Ford F550 //Cusco 900 g - Mini Vac
WILLIAMSPORT	790	2007 Intl / 2600 g Vac Truck
WILLIAMSPORT	857	2013 Benlee Supermini Trailer
WILLIAMSPORT	868	1988 48' Wabash Spill Tariler
WILLIAMSPORT	883	1993 Featherlite enclosed Spill Trailer
WILLIAMSPORT	884	1999 Hudson 9 ton 26' trailer
WILLIAMSPORT	885	1995 Custom 5 ton 16' trailer
WILLIAMSPORT	897	2009 Lark Trailer - HVE support trailer
WILLIAMSPORT	904	2002 Cat 902 Wheel Loader
WILLIAMSPORT	962	1992 Bobcat 853 Skid Steer Loader
WILLIAMSPORT	964	1998 Case 580 Super L Backhoe
WILLIAMSPORT	1111	Roll-off Box - 40cy
WILLIAMSPORT	1116	Roll-off Box - 30cy
WILLIAMSPORT	1117	Roll-off Box - 25cy
WILLIAMSPORT	1121	Roll-off Box - 20cy
WILLIAMSPORT	1123	Roll-off Box 20cy
WILLIAMSPORT	1124	Roll-off Box 20cy
WILLIAMSPORT	1125	Roll-off Box 20cy
WILLIAMSPORT	1127	Roll-off Box 20cy
WILLIAMSPORT	1128	Roll-off Box 20cy
WILLIAMSPORT	1129	Roll-off Box 20cy
WILLIAMSPORT	1130	Roll-off Box 20cy
WILLIAMSPORT	1131	Roll-off Box 20cy
WILLIAMSPORT	1133	Roll-off Box 20cy
WILLIAMSPORT	1136	Roll-off Box 20cy
WILLIAMSPORT	1138	Roll-off Box 20cy
WILLIAMSPORT	1139	Roll-off Box 20cy
WILLIAMSPORT	1140	Roll-off Vac Box 25-yd
WILLIAMSPORT	1142	Roll-off Vac Box 25-yd
WILLIAMSPORT	1143	Roll-off Vac Box 25-yd
WILLIAMSPORT	1144	Roll-off Vac Box 25-yd
WILLIAMSPORT	1500	Frac Tank - 20,000 GAL

U.S. Department of Homeland Security
United States Coast Guard

Commander
National Strike Force Coordination Ctr.

1461 North Road Street
Elizabeth City, NC 27909
Phone: 252-331-6000
FAX: 252-331-6012

16465

MAY 3 2007

Environmental Products and Services of Vermont
Attn: Don Melander
P.O. Box 4620
Burlington, VT 05406

RECEIVED
MAY 09 2007
BY:

Dear Mr. Melander,

Your resource information for re-classification as an Oil Spill Removal Organization (OSRO) has been reviewed and processed as outlined in the Coast Guard OSRO Classification Guidelines dated 27 April 2001. You have been reassigned OSRO number 0054; please reference this number in your future correspondence. You have received the following classifications listed in enclosure (1).

A CD containing your classification information is enclosed as enclosure (2). On the CD, you will find a summary of your classifications by environment and COTP zone and a summary of the resource totals for boom, Temporary Storage Capacity (TSC), and Effective Daily Recovery Capacity (EDRC) used to determine these classifications. Our files will be updated to reflect your current status; please inform your clients of the same. Your classifications will also be listed on the OSRO Classification Matrix available on the internet at:

http://www.uscg.mil/hq/nsfweb/nsfcc/ops/ResponseSupport/RRAB/informationonclassifiedosros.html

At the time of your original classification, your company used assets from several other companies. At this time, no documentation has been provided indicating your company still has agreements with companies other than Lewis Environmental and Marine Pollution Control (MPC). If you provide documentation of current agreements with the companies used previously, your classification levels in the River/Canal operating area will increase. Once any additional information is received, your data will be re-processed and your classification levels will be updated as warranted.

The Coast Guard is transitioning to a Sector organization which consolidates field operational and marine safety functions; enclosure (3) is a consolidated table that explains the changes affected by this transition.

If you have any questions or would like more information regarding your classifications, please contact the NSFCC. Our contact information can be found in enclosure (4).

Thank you for your participation in the OSRO program; your efforts to strengthen our national response capabilities are greatly appreciated.

Sincerely,

R.T. GORE
Chief, Response Support Division
U.S. Coast Guard
By direction

4 Enclosures

Copy: Commandant, U. S. Coast Guard (CG-3RPP-2) w/o enclosure (2)
Commandant, U. S. Coast Guard (CG-3PCV-1) w/o enclosure (2)
Commander, Ninth Coast Guard District (dr) w/o enclosure (2)
Commander, Coast Guard Sector Buffalo w/o enclosure (2)
EPA Region 5 w/o enclosure (2)
Pipeline and Hazardous Materials Safety Administration (PHMSA) w/o enclosure (2)

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: BUFFALO
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	22,600	0	22,600	11,400	**11,400**	25,200	0	25,200	14,000	**14,000**
Available Containment Boom (ft)	22,600	0	22,600	11,200	**11,200**	25,200	0	25,200	11,200	**11,200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	29,966	**19,352**	29,966	0	29,966	29,966	**19,519**
TSC (bbls)	38,704	0	38,704	38,704	**38,704**	39,038	0	39,038	39,038	**39,038**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	22,600	0	22,600	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	-2,350	**-2,350**	29,966	0	29,966	0	**0**
TSC (bbls)	38,704	0	38,704	38,704	**38,704**	39,038	0	39,038	39,038	**39,038**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,680	0	76,680	76,680	**76,680**	76,680	0	76,680	76,680	**76,680**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,680	0	76,680	76,680	**76,680**	76,680	0	76,680	76,680	**76,680**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: BUFFALO(OSWEGO, NY)
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	20,600	0	20,600	9,400	**9,400**	25,200	0	25,200	14,000	**14,000**
Available Containment Boom (ft)	20,600	0	20,600	11,200	**11,200**	25,200	0	25,200	11,200	**11,200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	29,966	**19,352**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	38,704	0	38,704	38,704	**38,704**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD1

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	20,600	0	20,600	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	-2,350	**-2,350**	29,966	0	29,966	0	**0**
TSC (bbls)	38,704	0	38,704	38,704	**38,704**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD2

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,680	0	76,680	76,680	**76,680**

Classification Level: WCD3

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,680	0	76,680	76,680	**76,680**	76,680	0	76,680	76,680	**76,680**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: LONG ISLAND SOUND
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	8,600	0	8,600	7,300	**7,300**	25,200	0	25,200	14,000	**14,000**
Available Containment Boom (ft)	8,600	0	8,600	1,300	**1,300**	25,200	0	25,200	11,200	**11,200**
Required Containment Boom (ft)			**1,300**					**11,200**		
EDRC (bbls)	231	0	231	231	**231**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,646	0	1,646	1,646	**1,646**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	8,600	0	8,600	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**1,300**					**11,200**		
EDRC (bbls)	231	0	231	-616	**-616**	29,966	0	29,966	0	**0**
TSC (bbls)	1,646	0	1,646	1,646	**1,646**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: NEW YORK
Operating Area: River Canal

Classification Level: MMPD

	Facility					Vessel				
	Own	COAM	Actual	Adjust #1	Totals Final	Own	COAM	Actual	Adjust #1	Totals Final
Available Protective Boom (ft)	7,350	0	7,350	7,350	**7,350**	8,600	0	8,600	7,300	**7,300**
Available Containment Boom (ft)	7,350	0	7,350	0	**0**	8,600	0	8,600	1,300	**1,300**
Required Containment Boom (ft)			**0**					**1,300**		
EDRC (bbls)	0	0	0	0	**0**	231	0	231	231	**231**
TSC (bbls)	1,552	0	1,552	1,552	**1,552**	1,646	0	1,646	1,646	**1,646**

Classification Level: WCD1

	Facility					Vessel				
	Own	COAM	Actual	Adjust #1	Totals Final	Own	COAM	Actual	Adjust #1	Totals Final
Available Protective Boom (ft)	8,600	0	8,600	8,600	**8,600**	8,600	0	8,600	8,600	**8,600**
Available Containment Boom (ft)	7,350	0	7,350	0	**0**	8,600	0	8,600	0	**0**
Required Containment Boom (ft)			**0**					**1,300**		
EDRC (bbls)	0	0	0	0	**0**	231	0	231	231	**231**
TSC (bbls)	1,552	0	1,552	1,552	**1,552**	1,646	0	1,646	1,646	**1,646**

Classification Level: WCD2

	Facility					Vessel				
	Own	COAM	Actual	Adjust #1	Totals Final	Own	COAM	Actual	Adjust #1	Totals Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,600**					**16,900**		
EDRC (bbls)	44,782	0	44,782	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

	Facility					Vessel				
	Own	COAM	Actual	Adjust #1	Totals Final	Own	COAM	Actual	Adjust #1	Totals Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: BOSTON
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	700	0	700	700	**700**	7,350	0	7,350	7,350	**7,350**
Available Containment Boom (ft)	700	0	700	0	**0**	7,350	0	7,350	0	**0**
Required Containment Boom (ft)			**0**					**0**		
EDRC (bbls)	0	0	0	0	**0**	0	0	0	0	**0**
TSC (bbls)	288	0	288	288	**288**	1,552	0	1,552	1,552	**1,552**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	7,350	0	7,350	7,350	**7,350**	7,350	0	7,350	7,350	**7,350**
Available Containment Boom (ft)	700	0	700	0	**0**	7,350	0	7,350	0	**0**
Required Containment Boom (ft)			**0**					**0**		
EDRC (bbls)	0	0	0	0	**0**	0	0	0	0	**0**
TSC (bbls)	288	0	288	288	**288**	1,552	0	1,552	1,552	**1,552**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,600**					**16,900**		
EDRC (bbls)	44,782	0	44,782	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: CLEVELAND
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	19,950	0	19,950	8,750	**8,750**	25,200	0	25,200	14,000	**14,000**
Available Containment Boom (ft)	19,950	0	19,950	11,200	**11,200**	25,200	0	25,200	11,200	**11,200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	29,966	**18,793**	29,966	0	29,966	29,966	**19,519**
TSC (bbls)	37,586	0	37,586	37,586	**37,586**	39,038	0	39,038	39,038	**39,038**

Classification Level: WCD1

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	19,950	0	19,950	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**11,200**					**11,200**		
EDRC (bbls)	29,966	0	29,966	-2,350	**-2,350**	29,966	0	29,966	0	**0**
TSC (bbls)	37,586	0	37,586	37,586	**37,586**	39,038	0	39,038	39,038	**39,038**

Classification Level: WCD2

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,680	0	76,680	76,680	**76,680**	76,680	0	76,680	76,680	**76,680**

Classification Level: WCD3

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,680	0	76,680	76,680	**76,680**	76,680	0	76,680	76,680	**76,680**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: DELAWARE BAY
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	6,650	0	6,650	6,650	**6,650**	19,200	0	19,200	8,000	**8,000**
Available Containment Boom (ft)	6,650	0	6,650	0	**0**	19,200	0	19,200	11,200	**11,200**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,264	0	1,264	1,264	**1,264**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	19,200	0	19,200	19,200	**19,200**	19,200	0	19,200	19,200	**19,200**
Available Containment Boom (ft)	6,650	0	6,650	0	**0**	19,200	0	19,200	0	**0**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,264	0	1,264	1,264	**1,264**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: PORTLAND, ME
Operating Area: River Canal

Classification Level: MMPD

	Facility				Totals	Vessel				Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	6,350	0	6,350	6,350	**6,350**	24,200	0	24,200	13,000	**13,000**
Available Containment Boom (ft)	6,350	0	6,350	0	**0**	24,200	0	24,200	11,200	**11,200**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,445	0	1,445	1,445	**1,445**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	24,200	0	24,200	24,200	**24,200**	24,200	0	24,200	24,200	**24,200**
Available Containment Boom (ft)	6,350	0	6,350	0	**0**	24,200	0	24,200	0	**0**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,445	0	1,445	1,445	**1,445**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,600**					**16,900**		
EDRC (bbls)	44,782	0	44,782	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

Printed: May 03, 07 at 11:18:50

OSRO 0054 - Environmental Products & Services of Vermont (Burl
Environmental Area Classification Detailed Amounts Per Rating Category

COTP/ACC Name: SOUTHERN NEW ENGLAND
Operating Area: River Canal

Classification Level: MMPD

	Facility					Vessel				
	Own	COAM	Actual	Adjust #1	Totals Final	Own	COAM	Actual	Adjust #1	Totals Final
Available Protective Boom (ft)	7,350	0	7,350	7,350	**7,350**	23,200	0	23,200	12,000	**12,000**
Available Containment Boom (ft)	7,350	0	7,350	0	**0**	23,200	0	23,200	11,200	**11,200**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,552	0	1,552	1,552	**1,552**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD1

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	23,200	0	23,200	23,200	**23,200**	23,200	0	23,200	23,200	**23,200**
Available Containment Boom (ft)	7,350	0	7,350	0	**0**	23,200	0	23,200	0	**0**
Required Containment Boom (ft)			**0**					**11,200**		
EDRC (bbls)	0	0	0	0	**0**	29,966	0	29,966	29,966	**19,513**
TSC (bbls)	1,552	0	1,552	1,552	**1,552**	39,026	0	39,026	39,026	**39,026**

Classification Level: WCD2

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

Classification Level: WCD3

					Totals					Totals
	Own	COAM	Actual	Adjust #1	Final	Own	COAM	Actual	Adjust #1	Final
Available Protective Boom (ft)	25,200	0	25,200	25,000	**25,000**	25,200	0	25,200	25,000	**25,000**
Available Containment Boom (ft)	25,200	0	25,200	200	**200**	25,200	0	25,200	200	**200**
Required Containment Boom (ft)			**16,900**					**16,900**		
EDRC (bbls)	55,068	0	55,068	0	**0**	55,068	0	55,068	0	**0**
TSC (bbls)	76,668	0	76,668	76,668	**76,668**	76,668	0	76,668	76,668	**76,668**

The amounts displayed under Actual Totals for Containment Boom represents the calculated amount required based on the number of skimming systems used + 1000 feet
The adjusted Containment Boom Amount can be limited based on available Boom - The adjusted EDRC may be based on a Containment Boom Limit or TSC amount
Protective Boom + Containment Boom cannot be less than the Available Boom Total

COAST GUARD SECTOR TRANSITION		
Original Unit	**New Unit**	**COTP Title**
District 1		
MSO Boston	Sector Boston	COTP Boston
Group/MSO Long Island Sound	Sector Long Island Sound	COTP Long Island Sound
Activities New York	Sector New York	COTP New York
MSO Portland, ME	Sector Northern New England	COTP Northern New England
MSO Providence	Sector Southeastern New England (both buildings are one command, COTP is CO of both, has offices in each)	COTP Southeastern New England
Group Woods Hole		
District 5		
Activities Baltimore	Sector Baltimore	COTP Baltimore
Group/MSO Philadelphia	Sector Delaware Bay	COTP Delaware Bay
MSO Hampton Roads	Sector Hampton Roads	COTP Hampton Roads
Group Fort Macon	Sector North Carolina	COTP North Carolina
MSO Willmington	MSU Wilmington (reports to Sector North Carolina)	COTP Cape Fear River
District 7		
MSO Charleston	Sector Charleston	COTP Charleston
MSO Savannah	MSU Savannah (reports to Sector Charleston)	COTP Savannah
MSO Jacksonville	Sector Jacksonville	COTP Jacksonville
MSD Marathon	Sector Key West	COTP Key West
MSO Miami	Sector Miami	COTP Miami
MSO San Juan	Sector San Juan	COTP San Juan
MSO Tampa	Sector St. Petersburg	COTP St. Petersburg
District 8		
MSO Corpus Christi	Sector Corpus Christi	COTP Corpus Christi
MSO Houston/Galveston	Sector Houston-Galveston	COTP Houston-Galveston
MSU Galveston	MSU Galveston (reports to Sector Houston-Galveston)	No COTP authority
MSO Port Arthur	MSU Port Arthur (reports to Sector Houston-Galveston)	COTP Port Arthur
MSU Lake Charles	MSU Lake Charles (reports to MSU Port Arthur)	No COTP authority
MSO Memphis	Sector Lower Mississippi River	COTP Lower Mississippi River
MSO Mobile	Sector Mobile	COTP Mobile
MSO New Orleans	Sector New Orleans	COTP New Orleans
MSO Morgan City	MSU Morgan City (reports to Sector New Orleans)	COTP Morgan City
MSU Baton Rouge	MSU Baton Rouge (reports to Sector New Orleans)	No COTP authority
MSU Houma	MSU Houma (reports to Sector New Orleans)	No COTP authority
MSO Louisville	Sector Ohio Valley	COTP Ohio Valley
MSO Pittsburgh	MSU Pittsburgh (reports to Sector Ohio Valley)	COTP Pittsburgh
MSO Paducah	MSU Paducah (reports to Sector Ohio Valley)	No COTP authority
MSO Huntington	MSU Huntington (reports to Sector Ohio Valley)	No COTP authority
MSO St. Louis	Sector Upper Mississippi	COTP Upper Mississippi River
District 9		
MSO Buffalo	Sector Buffalo	COTP Buffalo
MSO Cleveland	MSU Cleveland (reports to Sector Buffalo)	No COTP authority
MSO Detroit	Sector Detroit	COTP Detroit
MSO Toledo	MSU Toledo (reports to Sector Detroit)	No COTP authority
MSO Milwaukee	Sector Lake Michigan	COTP Lake Michigan
MSO Chicago	MSU Chicago (reports to Sector Lake Michigan)	No COTP authority
Group/MSO Sault Ste. Marie	Sector Sault Ste. Marie	COTP Sault Ste. Marie
MSO Duluth	MSU Duluth (reports to Sector Sault Ste. Marie)	COTP Duluth
District 11		
MSO Los Angeles-Long Beach	Sector Los Angeles-Long Beach (LA-LB)	COTP LA-LB
MSO San Diego	Sector San Diego	COTP San Diego
MSO San Francisco	Sector San Francisco	COTP San Francisco
District 13		
Group/MSO Portland, OR	Sector Portland	COTP Portland
MSO Puget Sound	Sector Seattle	COTP Puget Sound
District 14		
MSO Guam	Sector Guam	COTP Guam
MSO Honolulu	Sector Honolulu	COTP Honolulu
District 17		
MSO Anchorage	Sector Anchorage	COTP Western Alaska
MSO Valdez	MSU Valdez (reports to Sector Anchorage)	COTP Prince William Sound
MSO Juneau	Sector Juneau	COTP Southeast Alaska

ENCL (3)

National Strike Force Coordination Center (NSFCC)

Response Resource Assessment (RRA) Branch and
Response Resource Inventory (RRI) Branch Staff

Phone: (252) 331-6000

Chief, Response Support Division:		
LT Robert Gore	**X3034**	Robert.T.Gore@uscg.mil
Chief, RRA Branch:		
LT Tom Warren	**X3004**	Thomas.P.Warren@uscg.mil
RRA Program Staff:		
MKC Jeff Penninger	**X3033**	Jeffery.W.Penninger@uscg.mil
MST1 Todd Legutki	**X3057**	Todd.A.Legutki@uscg.mil
MST1 Tammy Fury	**X3059**	Tammy.D.Fury@uscg.mil
RRI Database Manager:		
Ms. Jorice Williams	**X3036**	Jorice.C.Williams@uscg.mil

ENCL(3)

OP-TECH

108 Sawyer Ave.
Tonawanda, NY 14150

800-225-6750
716-873-7680

Equipment and Supplies Inventory by Branch

WAVERLY, NY BRANCH OFFICE

3 – Utility Vehicles
2003 International Box Van 24'
1999 Interstate Spill Trailer
1998 Freightliner 3,000 Gal Carbon Steel Vac Unit (Keith Huber)
Clark Fork Truck
MVP – 3000 PSI Hot Water Pressure Washer

Absorbent Pads	47 bales
Absorbent Rolls 16.5"x150'	15 bales
Absorbent Rolls 33"x150'	8 bales
Poly Backed 36"x100'	1 bale
Absorbent Rolls 16.5"x50' 3/cs	19 cs
Skimming Pulp	5 lb
Lite Zorb Cellulose 25 bs	20 bg
Tadpole Socks	50 cs
Double Skin Boom 5"x10'	7
Double Skin Boom 8" x10'	8
Spill Curb	4 ea
Min-Sorb Granular	46
Super-Sorb Powder	59
Vermiculite (bag)	150
Crush Stone (bag)	50

BUFFALO, NY BRANCH OFFICE

3-Utility Vehicles
2000 International Box Van 20'
1999 Interstate Spill Trailer
2003 Cam-20'Flat Deck Beavertail Trailer
2000 International 3,000 Gal.Stainless Steel Vac Unit (Keith Huber)
2001 Kenworth Tri-Axle Dump Truck
1995 Aluminum Boat 14"
1998 Case 4WD Backhoe/Loader
Hotsy 3000 PSI Trailer Mounted

Absorbent Pads	32 bales
Sorbent Sheets	66 bales
5x10 Boom	29 bales
8x10 Boom	20 bales
Oil Sweep folded 19x100'	17
Blanket Oil Spill 38wx144l roll	20
Octasorb 15 lbs	10
Oil Sorb 50 lb bag	36
Soda Ash	40
Vermiculite	72
Crush Stone	12

ROCHESTER, NY BRANCH OFFICE

2-Uility Vehicles
2003 Continental Spill Trailer
1999 Interstate Spill Trailer
1998 Case 4WD Backhoe/Loader
Wheelhouse Generator
MULTI QUIP 2" Gas Trash Pump

Absorbent Pads	76 Bales
Sorbent Sheets	40 Bales
5x10 Boom	11 Bales
8x10 Boom	19 Bales
Oil Sweep Folded 19"x100'	12
Blanket Oil Spill 38wx144l	7 Rolls
Octasorb 15 lbs	10
Oil Sorb 50 b bag	50
Vermiculite	15 Bags
Crush Stone	2 Bags

Equipment and Supplies Inventory by Branch

SYRACUSE, NY BRANCH OFFICE

12-Utility Vehicles
2000 International Box Van 24'
1999 Freightliner King Vac 3000 Gal Stainless Steel Vac Unit
2000 International 2,000 Gal Carbon Steel Vac Unit (Keith Huber)
1999 Interstate Spill Trailer
1995 Clark Fork Truck
1999 International Tractor
1982 Presvac Trailer 5,000 Gal Carbon Steel Vac Unit
1999 Trailmobile 48'Dry Van Trailer
2001 Kenworth Tri-Axle Dump Truck
2003 Cam-20" Flat Deck Beavertail Trailer
Pontoon Barge 12x24 w/50 hp Motor
1972 Feather Craft Boat w/25 hp Motor w/ trailer
1990 Tag-A-Long Trailer
1995 JCB Backhoe
Caterpiller 307 Hydraulic Excavator
1995 GEHL SKDSTR 4625
4-Generators
Hosty 15000 PSI
2-EPPS High Pressure 3000 PSI Hot Water Pressure Washer
1992 Sulair Compress
Soda Blaster
Flatbed with DURCO Plate & Frame Filter Press

Absorbent Pads	53 Bales
Sorbent Sheets	30 Bales
5x10 Boom	14 Bales
8x10 Boom	12 Bales
Oil Sweep Folded 19"x100'	10 Ea
Blanket Oil Spill 38wx144l	3 Roll
Octasorb 15 lbs	15
Oil Sorb 50 b bag	62
Vermiculite	20 Bags
Crush Stone	15 Bags
Harbor Boom	100 Feet

MASSENA, NY BRANCH OFFICE

11-Utility Vehicles
2001 Kenworth Tri-Axle Dump Truck
2003 Cam-20' Flat Deck Beavertail Trailer
2000 International Box Van (White) 22'
1999 Interstate Spill Trailer
2000 International 2,000 Gal Carbon Steel Vac Unit (Keith Huber)
1994 3,000 Gal Stainless Steel Ford Powervac Wet/Dry Vac Unit
1999 3,900 Gal Carbon Steel Ford Power Vac Wet/Dry Vac Unit
1970 City Dump Trailer
1982 Raven Dump Trailer
1998 International Truck Mounted High Pressure Water Jet Rodder
1977 Trailmobile 5,000 Gal Tank Trailer
1970 Heil Aluminum 5,000 Gal Tank Trailer
HOTSY 1500 psi – 3 Units
HOTSY 3000 psi – 4 Units
1995 CAT Backhoe Loader
Trash 3" Gas Pump – 2 Units
Homelite 2" Gas Pump – 2 Units
Generator/Welder – 3 Units
Kobelco SK200, 45,000 b. Excavator
Sewer Televising Pan & Tilt Camera w/ trailer
Camera Tractor
Honda Presser Washer – 1 Unit 3000 psi
1991 Vec Loader (Vector)(Maroon)
1997 Skid Steer 4625
1999 International Tractor (Prime Mover)
Mobil Water Treatment System 30' Trailer
15' Boat & Trailer

Absorbent Pads	35 Bales
Absorbent Sheets	15 Bales
5x10 Boom	20 Bales
8x10 Boom	20 Bales
Oil Sweep Folded 19"x100' ea	10
Blanket Oil Spill 38wx144l	5 Rolls
Oil Sorb 50 bs	11 Bags
Harbor Boom	1000 Feet

Equipment and Supplies Inventory by Branch

ALBANY, NY BRANCH OFFICE

8 – Utility Vehicles
2001 International Box Van 24'
2 -1999 Interstate Spill Trailers
2000 International 2,000 Gal Carbon Steel Vac Unit (Keith Huber)
1994 Ford 3,000 Gal carbon Steel Vac Unit - Presvac
2001 Kenworth Tri-Axle Dump Truck
JCB Sitemaster Backhoe/Loader w/20 Ton Trailer
Gehl SKDSTR 5635
2 - MVP – 3000 PSI hot water Pressure Washers
18'Alum Outboard Motor Boat w/trailer

Absorbent Pads	40 Bales
Absorbent Rolls 16.5"x150'	15 Bales
Absorbent Rolls 33"x150'	10 Bales
Poly Backed 36"x100'	1 Bale
Absorbent Rolls 16.5"x50' 3/cs	10 cs
Skimming Pulp	5 lb
Lite Zorb Cellulose 25 bs	20 Bags
Double Skin Boom 5"x10'	15
Double Skin Boom 8" x10'	15
Spill Curb	4 ea
Min-Sorb Granular	25
Super-Sorb Powder	15
Vermiculite (bag)	150

PLATTSBURGH, NY BRANCH OFFICE

2004 GMC Pickuyp
1999 Interstate Spill Trailer
1992 CUSCO 3000 Gal Carbon Steel Vac Unit
1985 Ford Dump Truck
12' Boat & Trailer
2" Trash Pump
YAHAMA 660 Generator

Absorbent Pads	25 Bales
Sorbent Sheets	15 Bales
5x10 Boom	10 Bales
8x10 Boom	10 Bales
Oil Sweep Folded 19"x100'	8
Blanket Oil Spill 38wx144l	5 Rolls
Octasorb 15 lbs	10
Oil Sorb 50 b bag	25
Vermiculite	10 Bags

EDISON, NJ BRANCH OFFICE

1999 Keith Huber 3200 Fal Vacuum Truck
1999 Ford F250 Cargo Van
2004 GMC Pickup 2- units
2000 Interstate Spill Trailer
3000 psi pressure Washer hot/cold

Absorbent Pads	70 Bales
Sorbent Sheets	40 Bales
5x10 Boom	15 Bales
8x10 Boom	25 Bales
Oil Sweep Folded 19"x100'	12
Blanket Oil Spill 38wx144l	7 Rolls
Octasorb 15 lbs	10
Oil Sorb 50 lb bag	50
Vermiculite	15 Bags
P.I.D. Meter	
4 Gas/LEL Meter	1 Pallet
Poly 6 mil	1 Pallet

National Vacuum Corp.

408 47th St.
Niagara Falls, NY 14304

716-773-1167

ARTICLE IV: Time and Material Rates

		RATE	UNIT
VACUUM TRUCK/VACUUM EQUIPMENT & TRAILERS			
Vacuum Truck, Industrial Wet/Dry	$	69.00	hour
Liquid Vacuum Truck	$	59.00	hour
HEPA Vacuum Loader	$	69.00	hour
Equipment Truck	$	10.00	hour
Trailer, Spill Response	$	250.00	shift
Trailer, Storage	$	99.00	shift
Vehicle, Heavy Duty Van (>18,000 lbs.) w/power lift gate	$	39.00	hour
SEWER EQUIPMENT			
Mechanical Bucket Machine & Accessories	$	35.00	hour
Combination Vacuum/Sewer Flusher Unit	$	125.00	hour
Portable Mobile Reel (Easement Machine)	$	45.00	hour
Internal Video Inspection Equipment	$	125.00	hour
Sewer Test Ball 6"-18"	$	75.00	shift
Sewer Test Ball 19"-24"	$	125.00	shift
Sewer Test Ball 25"-48"	$	195.00	shift
PUMPS/AIR COMPRESSORS/GENERATORS			
Air Compressor (<50 cfm w/100'hose)	$	95.00	shift
Air Compressor (50 to 150 cfm w/100'hose)	$	115.00	shift
Generator (<2500 watt)	$	70.00	shift
Generator (2500 to 5000 watt)	$	110.00	shift
Hose, Chemical Transfer per 10' length (2"-4")	$	12.00	shift
Pump, Utility Trash (2")	$	105.00	shift
Pump, Utility Trash (3")	$	155.00	shift
Pump, Utility Trash (4")	$	195.00	shift
Pump, Self Priming (6" and up) w/accessories		Cost plus 20%	shift
Pump hose, 50', lay flat 2" – 3"	$	9.00	shift
Pump hose, 50', lay flat 4"	$	10.00	shift
SKIMMER/BOOM & RECOVERY EQUIPMENT			
Skimmer, Auto	$	550.00	shift
Harbor Boom (per lineal foot)	$	6.00	per day
WATER BLASTING & STEAM CLEANING EQUIP.			
Pressure Water Blaster (10,000 psi)	$	55.00	hour
Pressure Water Blaster (20,000 psi)	$	99.00	hour
Pressure Water Blaster (40,000 psi)	$	149.00	hour
Hot Water Pressure Washer (< 5000 psi)	$	170.00	shift
Abrasive Cutting System	$	49.00	hour
Soda Blasting Unit & Equipment	$	69.00	hour
20K & 40K Tooling	$	29.00	hour
2D Cleaning Head	$	29.00	hour
3D Cleaning Head	$	39.00	hour
HP Stack Cleaning System	$	36.00	hour
Stoneage Rotaries	$	15.00	hour
Dry Ice (CO_2) Blasting Machine	$	55.00	hour
Dry Ice (CO_2)	$	0.75	lb
Armex Baking Soda	$	0.75	lb

Customer Initial

		RATE	UNIT
CONFINED SPACE ENTRY EQUIPMENT			
LEL/O2/CO2/ Meter	$	95.00	shift
Breathing Air – Bottle Refill	$	35.00	each
Lamp, Explosion Proof	$	85.00	shift
Exhaust Fan, Explosion Proof (<24")	$	85.00	shift
Confined Space Equipment (Masks, Hoses, Gauges, meter, etc.)	$	35.00	hour
HEALTH & SAFETY – PERSONAL PROTECTIVE			
EQUIPMENT			
Rubber Gloves	$	3.50	pair
Cloth Gloves	$	1.50	pair
Tyvek Suit	$	5.50	each
Poly Coated Tyvek Suit	$	9.50	each
Saranex Suit	$	40.00	each
Rain suit	$	15.00	each
Rubber Boots	$	15.00	pair
Face Shield	$	5.50	each
HEPA Respirator Cartridges	$	5.75	each
OV Respirator Cartridges	$	9.00	each
Combo OV/HEPA Respirator Cartridges	$	12.00	each
PPE – Level "A" (per person)	$	950.00	shift
PPE – High Level "B" (per person)	$	650.00	shift
PPE – Low Level "B" (per person)	$	450.00	shift
PPE – High Level "C" (per person)	$	150.00	shift
PPE – Low Level "C" (per person)	$	99.00	shift
PPE – Level "D" (per person)	$	40.00	shift
SCBA Stand-by Unit	$	260.00	shift
Eye Wash Station (portable)	$	52.00	shift
Lockout/Tagout System (LO/TO) – each	$	9.00	shift
Safety Harness w/Lifeline	$	22.00	shift
Cool Vest	$	52.00	shift
Breathing Air Bottle – Bottle Refill	$	39.00	shift
[illegible]			
Hose, Flex, 6" (100' roll)	$	135.00	roll
Hose, Flex, 3-4" (100' roll)	$	115.00	ft
Tape, Duct	$	5.50	roll
Polyethylene Sheeting (6 mil. 20' x 100')	$	99.00	roll
Small Tools	$	6.00	hour
[illegible]			
Boom, 4' x 3"	$	4.50	each
Boom, 5" x 10'	$	29.00	each
Boom, 8" x 10'	$	39.00	each
Pads, 16" x 18" Single Weight	$	0.50	each
Pads, 17" x 19" Petroleum	$	1.50	each
Oil Sorbent Roll 32" x 150'	$	126.00	roll
Sweep, Oil Only 16" x 100'	$	105.00	each
Pillows, oil, 8" x 18" 10/bale	$	198.00	bale
Boom, Containment 6" skirt 100/ft	$	360.00	day
Floor Absorbent, 50lb Bag	$	9.50	bag
Drum, 55 Gallon DOT Open Top	$	59.00	each
Gator Absorbent	$	35.00	bag
Peat Sorb	$	45.00	bag

Customer Initial

ARTICLE IV: Time and Material Rates, cont.

EXCAVATORS/BACKHOES

	RATE	UNIT
John Deere – 4WD Rubber Tire Backhoe	$ 69.00	hour
John Deere – 200 Track Mounted Excavator	$ 99.50	hour
John Deere – 230 Track Mounted Excavator	$ 129.00	hour

Mobilization and demobilization for excavators will be billed at $100.00 per hour, portal to portal

Standard Hourly Rates, Monday thru Friday 8:00am - 4:30pm	RATE	UNIT
Supervisor	$ 42.00	hour
Equipment Operator	$ 34.00	hour
Technician	$ 32.00	hour
Video Technician	$ 34.00	hour
Grit Blasting Supervisor	$ 45.00	hour
Grit Blasting Technician	$ 39.00	hour
Health & Safety Coordinator	$ 65.00	hour
Environmental Coordinator/Manager	$ 55.00	hour

Per Diem Rate:

Per Diem will be billed out at Current GSA Rates.

Travel Rates:

Equipment and Personnel travel will be billed at the standard hourly rate only.

General Information:

Four (4) Hour Minimum Charge.
Variable Fuel Surcharge will apply for all Fuel Consuming Equipment.
Specialized Tools and Equipment available upon request at cost plus 15%.
Equipment or supplies not listed at cost plus 15%
Time and 1/2 after eight (8) hours, Monday thru Friday and all day Saturday & Sunday.
Double Time on Holidays only.
Equipment is billed out at hourly straight time rates only.
Payment Savings Terms: 1.5% 15 net 30
Two (2) Hour Emergency Response Time

24 HOUR EMERGENCY PHONE NUMBER: (

Customer
(initial)

Weavertown Environmental Group

201 South Johnson Road
Houston, PA 15342

800-746-4850

South Carolina	PAD980707442
Tennessee	PAD980707442
Texas	41959
Vermont	(Vehicle Report Form)
Virginia	PAD980707442
West Virginia	IMW-99-92 UPW0207532OH
Wisconsin	15105

WEG also maintains a staff of professionals who are certified to conduct storage tank activities, mine-site operations, watercraft operations and construction activities in the states of Pennsylvania, Ohio, Virginia, Kentucky, and West Virginia. Individual certification numbers can be provided upon request.

Equipment

WEG owns and utilizes the most modern, state-of-the-art, waste handling and transportation equipment available. WEG's specialized fleet and inventory is unparalleled in the Mid-Atlantic region and is fully insured and permitted for our client's protection. A brief listing of WEG's specialized equipment is listed below:

Pumps

3000 PGM H & H Submersible Hydraulic Pump	6" Hydraulic Powered
260 GPM Wilden Air Diaphragm Pumps	2" Air Powered
15 GPM Wilden Air Diaphragm Pumps	1" Air Powered
250 GPM Gorman Rupp Fire Pumps	2.5" Gasoline Powered
350 GPM Gorman Rupp Fire Pumps	3" Diesel Powered
250 GPM Honda Trash Pumps	2.5" Gasoline Powered
350 GPM Gorman Rupp Trash Pump	3" Gasoline Powered
300 GPM Rope Skimmer	Gasoline Powered
100 GPM Corken Vane Pump (Liquefied gases)	Hydraulic Powered
230 GPM Drum Skimmers	Hydraulic Powered

Vacuum Units

1- 1978 J&B 500 CFM International Dry Vacuum Truck with 2,800-gallon capacity

1- 1987 Cusco 3,500 CFM Mack Vacuum Truck with 3,000-gallon capacity

1- 1987 King 4,500 CFM Freightliner Vacuum Truck with 3,300-gallon capacity

1- 1989 King 4,500 CFM Freightliner Vacuum Truck with 3,000-gallon capacity

1- 1992 Cusco 3,500 CFM Freightliner Vacuum Truck with 3,000-gallon capacity

2- 2000 Cusco 3,500 CFM Freightliner Vacuum Trucks with 3,000-gallon capacity
1- 1990 Cusco 4,500 CFM Ford Vacuum Truck with 3,300-gallon capacity
1- 1991 Cusco 2,300 CFM Ford Vacuum Truck with 3,300-gallon capacity
1- 1994 Cusco 2,300 CFM Ford Vacuum Truck with 3,300-gallon capacity
1- 1995 Cusco 2,300 CFM Ford Vacuum Truck with 1,000-gallon capacity
1- 1996 Cusco 2,300 CFM Ford Vacuum Truck with 1,000-gallon capacity
1- 1996 Cusco 2,300 CFM Ford Vacuum Truck with 1,000-gallon capacity
1- 1991 Guzzler 5,400 CFM Wet/Dry Vacuum Truck with 3,000-gallon capacity
1- 1992 Cusco 4,500 CFM Freightliner Vacuum Truck with 3,100-gallon capacity with a high-pressure washer
1- 1989 Keith Hubert 1,500 CFM Skid Vacuum Unit with 3,300-gallon capacity
1- 1989 Comptank 1,000 CFM Fiberglass Vacuum Trailer with 5,500-gallon capacity
1- 1991 Fruehauf 1,000 CFM Stainless Steel Vacuum Trailer with 6,000-gallon capacity
2- 1999 Presvac 4,500 CFM Freightliner Vacuum Trucks with 3,000-gallon capacity
2- 2001 Keith Hubert 1,500 CFM Vacuum Truck 3,000-gallon capacity

Tank Trailers

Tanker Trailer Capacity 145,500 gallons/3,465 barrels

21- Total Tank Trailers
19- Stainless Steel Tank Trailers-Insulated
1- Carbon Steel Tank Trailer-Insulated
1- Aluminum Compartment Tank Trailers

1972 Penco	1-	7,000 gallon
1977 Fruehauf	1-	7,000 gallon
1978 Fruehauf	1-	7,000 gallon
1979 Trailmobile	2-	7,000 gallon
1980 Fruehauf	1-	7,000 gallon
1985 Fruehauf	1-	6,500 gallon
1988 Fruehauf	2-	7,000 gallon
1990 Fruehauf	1-	7,000 gallon
1991 Fruehauf	2-	6,500 gallon
1994 Brenner	3-	7,000 gallon

1995 Brenner 6- 7,000 gallon

Training Tank Trailer

"Bottoms Up" four-compartment, carbon steel, equipped with self-contained hydraulic system

Refrigerated Units

2- Straight Trucks with Lift-gate

Other Trailers

2- Flatbeds (43' & 48') with Side Kit and Tarp
2- Box Vans
1- Lowboy Tri-axle Trailer
1- Lowboy Equipment Trailer
2- Utility Trailers 16'

Power Units

15- Tractor Power Units/Equipped with Roper Pumps

Dump Units

4- Aluminum Dump Trailers
2- Tri-axle Dump Trucks
1 Ton Dump 2 x 2
1 Ton Dump 2 x 2

Roll-Off Units

6- Tri-axle Roll-off Trailers
8- Tri-axle Roll-off Trucks
300- Roll-off Containers (Various Sizes-Sealed and Unsealed Gates)

Heavy Equipment

2- Trackhoes

4- Backhoes with Extended-A-Hoe

2- Bulldozers

2- Track Highlift Loaders

1- Rubber Tire Front End Loader

1- Roller Compactor

1- Construction Lift

3- Forklifts

4- Skidloaders

Response/Work/Utility Trucks

1- 24' Box Truck with PA Required Hazardous Materials Response, Personal Protective Equipment, Tools, and Supplies

1- 16' Van with PA Required Hazardous Materials Response, Personal Protective Equipment, Tools, and Supplies

1- Utility Truck with Level B, C, and D Personal Protective Equipment, Miscellaneous Tools, and Supplies

5- 1-Ton Pickup 4 x 4s with Electric Winch and Spot Lights

12- ¾ Ton Pickup 4 x 4s with Electric Winch and Spot Lights

1- ½ Ton Pickup 4 x 4 with Spot Lights

2- ½ Ton Pickup 2 x 2

3- Stake bed Trucks with Tarp and Lift-gate

1- 24' Box Truck with Lift-gate

1- Decontamination trailer with showers, running hot water, and wash basins

Other Trucks

2- Flatbeds (43' & 48') with Side Kit and Tarp

2- Box Vans

1- Lowboy Tri-axle Trailer

1- Lowboy Equipment Trailer

2- Utility Trailers 16'

Water Craft

1- 24' Pontoon with 115 hp motor

1- 24' Pontoon with 150 hp motor

1- 23' Sea Ark 1999 with cabin and twin 150 hp motors
2- 28' Checkmate 1993 with twin 200 hp motors
1- 21' Starcraft 1986 with 115 hp motor
1- 18' Grumman 1988 with 120 hp motor
4- 16' Workboats, Jon Boat
1- 15' Workboat, Jon Boat
10- 14' Workboats, Jon Boat
1- 12' Workboat, Jon Boat
2- 30 hp Johnson Outboard Motor
1- 25 hp Johnson Outboard Motor
2- 15 hp Johnson Outboard Motors
2- 15 hp Mercury Outboard Motors
11- 9.9 hp Mercury & Evinrude Outboard Motors

Fixed Facilities

Cecil Storage Tanks

4- 71,000 gallon
1- 200,000 gallon
3- 20,000 gallon
2- 10,000 gallon
2- 10,000 gallon

Towing Units

1- 45 Ton Mack Tow
2- 25 Ton Freightliner Tows
1- 10 Ton Dodge Tow
1- 10 Ton Roolback

Containment Boom/Mobile Response Units

48' box van trailers equipped with 4,000 feet of containment boom
16' box trailers equipped with 1,000 feet of containment boom

Sorbent Material/Mobile Response Units

22' box trailers equipped with specialized PPE, tools, and supplies

16' utility trailers equipped with specialized PPE, tools, and supplies

16' utility trailers equipped with sorbent materials, 55-gallon steel drums, and drum overpacks

Miscellaneous Equipment and Materials

Portable communications equipment
Photoionization detectors (10.2 eV and 10.6 eV probes)
Flame Ionization detectors
Colorimetric tube monitoring apparatus
Combination combustible gas and oxygen indicators
Toxic gas monitoring and detection instruments
Radiation meters and personal dosimeters
Haz-Mat and PCB detection kits
Traffic control devices
Portable generators, light plants and welders
Skimmer systems
Portable high pressure water blasters and steam cleaning units
Portable activated carbon filtration systems
Various submersible hydraulic, diaphragm, acid, fire and trash pumps
Pneumatic pipe wrap/container plug and patch system
Air powered spark resistance hand tools
A, B, and C chlorine kits
Portable weather stations
Portable computers with modem, cellular phones, and faxes
Purple K and Class D fire extinguishing agents
Tripods and winch systems for confined space entry
Cascade breathing air systems
Personnel and equipment decontamination units
Miscellaneous hand tools and supplies
Miscellaneous field sampling and monitoring equipment
MSHA approved personal lighting units

Miscellaneous Entry

DOT Coded 17C, 17E, and 17H Drums (1A1 & 1A2)
DOT Coded 55-gallon plastic drums
DOT Coded steel and plastic 85-gallon overpack drums
Specialized and miscellaneous safety equipment and PPE
Specialized chemical emulsifiers, neutralizers, and stabilizers

Specialized and miscellaneous sorbent, containment materials, and booms

McCutcheon Enterprises, Inc.

250 Park Road
Apollo, PA 15613-8730

724-568-3623

McCutcheon Enterprises, Inc.
250 Park Road
Apollo, PA 15613-8730

EMERGENCY CONTACTS (724) 568-3623 (24 hours)

		Display Beepers
Calvin McCutcheon	Keith Cessna	Tim Dobrosky
Bob Carter	Ted McCutcheon	Jack Miller

PERSONNEL AVAILABLE

70 - more or less depending on time of year

Personnel Training: 60 - 40 hour OSHA 29CFR 1910.120 (HazWoper)
10 - General Safety (Non-HazWoper)

CONTAINMENT BOOM

ACME OK Corral Containment Boom: All boom with Quick Latch Couplers

900 Ft - Mini and Super Mini Boom (2" and 2-1/2" Freeboard x 4" Draft)
250 Ft - 4" x 6" Boom
2,000 Ft - 6" x 6" Boom
3,675 Ft - 6" x 12" Boom
1,500 Ft - 8" x 12" Harbor Boom
2,000 Ft - 12" x 24" Harbor Boom
10,325 Ft Total

Appropriate and proven anchoring system for boom listed above for all depths and conditions by MEI trained personnel.

MEI is a distributor for all ACME boom and skimmer products.

TEMPORARY STORAGE CAPACITY

8,210 bbls
Source: 13 Storage Trailers, 2 Rolloff Tank Units, 32 Vacuum Boxes, 5 Frac Tanks

Numerous pumps, 1" through 10", capable of pumping and transferring many different products powered by electric, gasoline, diesel and air.

RECOVERY CAPACITY

VACUUM TRUCKS

	Capacity	Effective Daily Recovery Capacity
Mack 1985 Transway	83 bbls	1,600 bbls/day
Mack 1985 Pres Vac	86	1,600
Mack 1981 Petrosteel	86	1,600
Polar 1983 Stainless Steel	124	1,621
Heil 1991 Aluminum	155	1,651
Ag-Gator 1980 2004	52	718
STE 1992 Stainless Steel(2)	131	1,630
Mack 1995 Ibex	76	1,463
Nova 1999 Stainless Steel	131	1,630
GAP 1995 Vax High Flow(2)	79	
		15,143

SKIMMERS:

Acme V39T	549
Slickbar Products Manta Ray 1992	617
Elastec TDS-118 Drum Skimmer 1993	240
Megator Vacuum Skimmer	377
	1,783 bbls/day

SORBENTS

SPC 100 pads	200 bales	100 pads/bale
SPC 200 pads	100 bales	200 pads/bale
SPC 50 pads	50 bales	50 pads/bale
SPC 150 blanket	50 rolls	150'/roll
SPC 510 boom	225 bales	4 - 10' booms/bale
SPC 810 boom	125 bales	4 - 10' booms/bale
SPC 1900 sweep	100 bales	100'/bale
SPC 27 particulate	10 bales	27 lbs/bale
SPC 10 pillows	10 bales	10 pillows/bale

MEI is a distributor for all SPC sorbent products.

EMERGENCY RESPONSE TRUCKS/TRAILERS

One 24' Emergency Response Truck fully stocked w/ specialized Hazardous Material Response Equipment
One 24' Emergency Response Truck fully stocked with sorbents, containment boom and equipment
Three 45' Emergency Response Trailer fully stocked with sorbents, containment boom and equipment
One 45' Drop Deck Trailers fully stocked with sorbents

WATERBORNE EQUIPMENT

One	31' Monarch w/2-150 hp Mariner Outboard Motor
One	24' Pontoon Boat w/90 hp Outboard Motor
One	22' Outrage Boston Whaler w/175 hp Johnson Outboard Motor
One	20' Monarch w/150 hp Mariner W150 Outboard Motor
One	20' Monarch w/140 hp Mariner Outboard Motor
One	18' Lowe 1982 Jon Workboat w/48 hp Johnson 1990 Outboard Motor
One	16' Sylvan V hual w/40 hp Outboard Motor
Five	16' Alumaweld 1990 Flat Bottom Boats
	35 hp Mercury Outboard Motor
	28 hp Evinrude Outboard Motor (2)
	24 hp Mariner Outboard Motor
	9.9 hp Mercury Outboard Motor
Two	12' Alumaweld Flat Bottom Boats 1990

One 40' Dredge VMI MDE 615 HS-HD 1988

Note: Boats capable of operating in shallow waters (<6 ft)

HEAVY EQUIPMENT

Komatsu Hydraulic Excavator Model PC200LC-5 1990
w/Komatsu Diesel Engine Model S6D95L-1
Komatsu Hydraulic Excavator Model PC300LC-5 1991
w/Komatsu Diesel Engine Model 11538
John Deere 850B Dozer w/Winch 1991
John Deere 755B Highlift Track Loader 1991
John Deere 410C Backhoe 4WD Loader Extend-a-hoe 1990
John Deere 410 Backhoe 1978
Toyota Skid Steer Loader 1990
w/sweepster 1991 and drum turning attachment 1994
Toyota Forklift 1989

TRANSPORTATION EQUIPMENT

TRUCKS:

Twelve Tandem Tractors

Five	Mack CH613 1991
Five	Freightliner 1994
One	Mack 1986
One	Mack 1981

Seven Triaxle Rolloff Trucks

One	Mack 1996	One	Freightliner 1993
One	Mack 1995	One	Mack 1992
One	Mack 1994	Two	Mack 1991

Six Vacuum Trucks

Two	Mack 1995 Gap-Vax(High Flows)
One	Mack 1995 Ibex 79 bbls
One	Mack 1985 Transway 83 bbls
One	Mack 1985 PresVac 86 bbls
One	Mack 1981 Petrosteel 86 bbls

One	Off Road All Terrain Ag-Gator 52 bbls
Two	GMC 20' Vans w/liftgates 1987
Two	Dump Trucks- Mack 1984, Ford 1991

Eleven Utility Service Vehicles

Four	Ford F8000 Service Vehicles
One	Ford F450 Stake Bed Unit
Three	Ford F8000 Crew Cabs
One Ton	Ford F450 1989 w/1 1/2 ton crane
3/4 Ton	Ford F250 1990 w/liftgate
1/2 Ton	Toyota 1989 4x4

Sixteen 4x4 Pick up Trucks

Five	One Ton Ford F350 Crew Cabs w/liftgates
Three	3/4 Ton Pickups w/liftgate
Two	1/2 Ton Chevy Blazers
Six	1/2 Ton Pickups

TRAILERS:

Six Dump Trailers	One	Ti-Brook 1989
	Two	Freuhauf 1988
	One	Ti-Brook 1982
	One	Liberty 1978
	One	East 1976
Five Hypalon Lined Trailers	Three	Fruehauf 1988
	Two	Polars 1982
Six Van Trailers	Fruehauf 42' 1983 w/liftgate	
	Trailmobiles(2) 48' 1991 w/spillpans	
	Great Dane(3) 48' 1990, 1991, 1992	
Three Drop Deck Trailers	Two	Great Danes 48' 1984
	One	Fontaine 40' 1975
Three Lowboy Trailers	One	Muvall 35 Ton 1986
	Two	Talberts 50 Ton 1991
Six Rolloff Trailers	Three	Galbreath 1996
	One	318 Galbreath 1988
	Two	416 Galbreath 1992
Five Vacuum Trailers	Two	STE 1992 Stainless Steel 131 bbls
	One	Polar 1983 Stainless Steel 124 bbls
	One	Heil 1991 Aluminum 155 bbls
	One	Nova 1999 Stainless Steel 131 bbls

Thirteen Aluminum Transport Trailers

Two Hundred plus Sealed Rolloff Boxes (Various sizes and styles)
Ten Security Storage Rolloff Containers 8'W x 8'6"H x 20'L
Thirty two Vacuum Rolloff Boxes

MISCELLANEOUS EQUIPMENT

All Terrain Vehicles
- Suzuki 4x4 Quad
- Polaris 6 Wheel Vehicle

Generators

Four	Honda 650 Watt
Two	Honda 5000 Watt
One	3500 Watt
One	Winco 15,000 Watt (Three Phase)

Light Plant
- Two Maxilight Units

Two Way Portable Radios
- Eighteen Hand Held Motorolas
- All Vehicles equipped with Motorola Units

North SCBA Systems
Cascade Breathing Air Systems
MSA Half Face Comfo - II Respirators (Air purifying)
Full Face Ultratwin Respirators (Air purifying)
Confined Entry Equipment
Two Negative Pressure Hepa Filter Fans
Super Vac Exhaust Fan
Two Portable Backpack Blowers
Washdown Pumps- Acme, Kustom Env. double discharge
Decontamination Rooms
Miscellaneous Aerators and Compressors
In-House Laboratory
Four Hotsy Pressure Washers
Portable Hobart Welders
Ground Compaction Equipment
- Vibratory Plate Compactor Arrowmaster P5000K
- Tamper Wacker BFR45Y

Concrete Mixer - Stone 65 cm
Portable Heaters

MISCELLANEOUS MATERIALS

22 Pallets	Upright Anti-slip Absorbents
Four Pallets	Oil Dry Absorbents

200	DOT 17H Open Top 55 Gallon Drums (Metal)
100	DOT 17E Closed Top 55 Gallon Drums (Metal)
50	DOT 17H Open Top 85 Gallon Salvage Drums (Metal)
10	DOT Open Top 85 Gallon Polyethylene Overpack Drums
15	DOT 34 Open Top 55 Gallon Drums (Plastic)
10	DOT 34 Closed Top 55 Gallon Drums (Plastic)

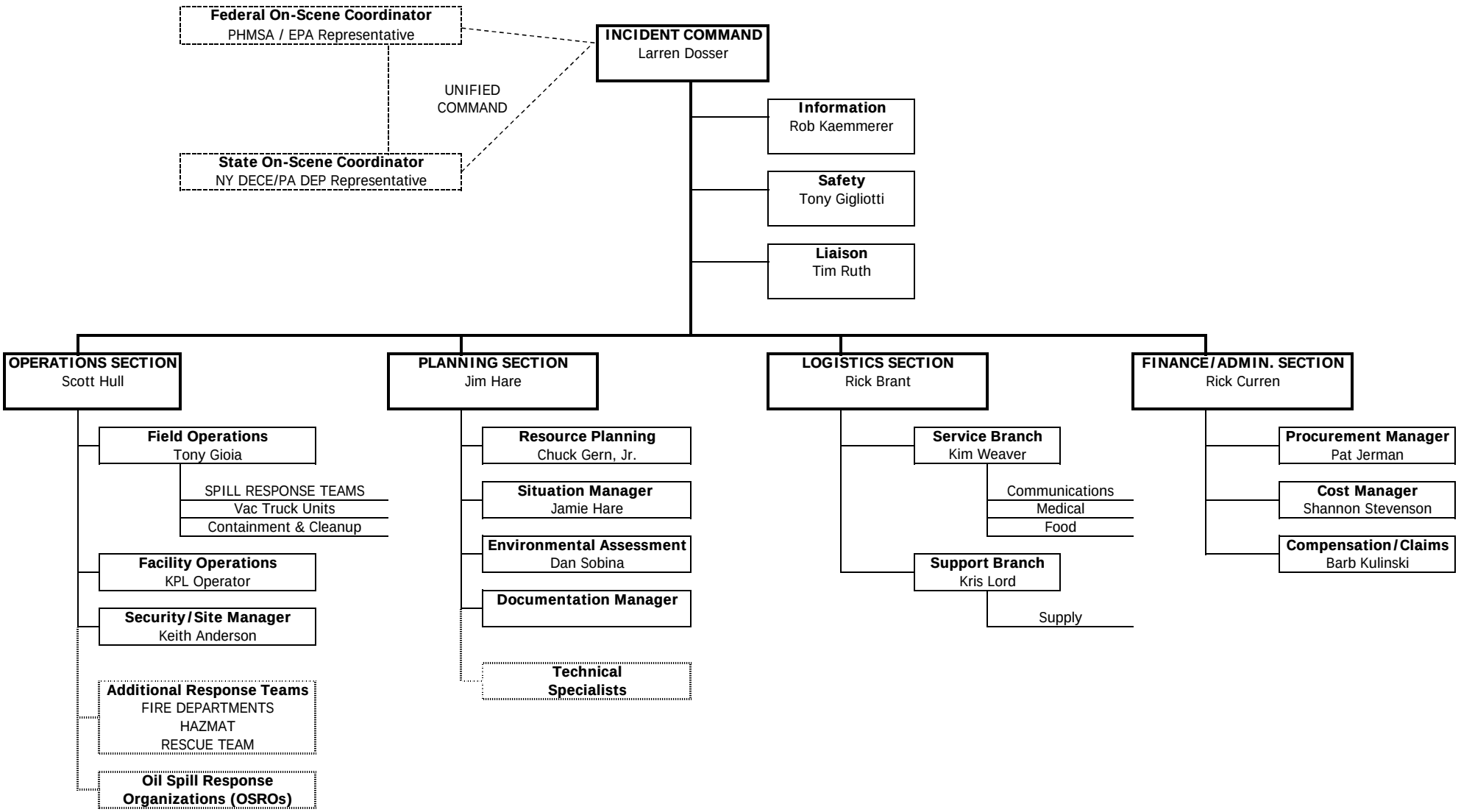
Polyethylene Spill Bags 36" x 40" - 10,000
Polypropylene Rope (1/4", 3/8", 1/2")
Sandbags (Burlap)

MEI also has a supply of various enzymes, polymers, chemicals and reagents used in various treatment situations.

APPENDIX D
Incident Command System

INCIDENT COMMAND SYSTEM

Kiantone Pipeline Corp.



I. UNIFIED COMMAND:

This plan anticipates establishment of a Unified Command comprised of the Responsible Party Incident Commander (RPIC), the Federal On-scene Coordinator (FOSC), and the State On-scene Coordinator (SOSC). The RPIC is designated as Kiantone's Qualified Individual/Incident Commander. Additional Kiantone personnel shall be assigned to the organization as dictated by needs of the response.

A. RESPONSIBILITIES - The Unified Command is responsible for the following actions:

(1) Mobilize, implement and manage the Unified Command organization structure as necessary to accomplish response requirements.
(2) Assess incident priorities.
(3) Determine strategic priorities.
(4) Develop or approve the Incident Action Plan and ensure each party implements and accomplishes those actions for which they are responsible.
(5) Anticipate response needs and authorize the ordering, deploying and demobilization of response resources.
(6) Serve as overall safety authority, approve site safety plan, and ensure a minimum level of worker health and safety is maintained.
(7) Authorize the release of information to the media and other concerned parties.

B. COMMAND STAFF MEMBERS – Kiantone members including personnel from United Refining Company, will be assigned to specialized positions in the Unified Command Staff (see example on the previous page.)

C. SAFETY OFFICER – The Safety Officer is responsible for assessing hazardous conditions, unsafe practices and developing measures for assuring personnel safety for both response workers and the public. The Safety Officer will correct unsafe acts or conditions through the regular line of authority. However, the Safety Officer may exercise emergency authority to stop or prevent unsafe acts when immediate action is necessary to mitigate serious threats to the health and welfare of personnel. The Safety Officer shall:

(1) Identify and evaluate safety and health hazards that may impact both response workers and the public, designate exclusion zone boundaries, and determine levels of personnel protective equipment required.
(2) Write and update a Site Safety Plan
(3) Implement and manage the safety staff needed to continuously monitor and evaluate safety and health conditions and to prevent unsafe conditions.
(4) Ensure that all responders have adequate skills to safely perform assigned tasks.
(5) If necessary, provide and coordinate regular safety briefings required to perform response activities.
(6) Coordinate with public, government, and industry health and safety officials regarding public health concerns, including evacuations, limiting access to public areas, beach closures, marina closures, and fisheries restrictions.
(7) Resolve and identify to the Unified Command significant safety and health issues.

D. PUBLIC AFFAIRS OFFICER – The public affairs officer is responsible for compiling accurate and complete information regarding original incident, size, current situation, resources committed and other matters of interest. The Public Affairs Officer will normally be the point of contact for the media and other agencies desiring information directly from the incident. The Public Affairs Officer shall:

(1) Serve as the central clearing point for the dissemination of official information representing the UCS to the media.
(2) Implement and manage the Joint Information Center (JIC) as the central location for disseminating official information.
(3) Schedule, organize, and conduct UCS media briefings, interviews, and tours.
(4) Develop presentation documentation such as charts, maps and graphics to support both response operations and media briefings.
(5) Resolve conflicting information and identify media concerns to the Unified Command
(6) Implement and manage the public affairs staff needed to accomplish public affairs tasking. Coordinate public information activities.
(7) Escort media personnel and VIPs.

E. LIAISON OFFICER – The Liaison Officer is the point of contact for the exchange of information between the Unified Command and assisting/cooperating agencies. The Liaison Officer interacts with agencies that are independent of the Unified Command. The Liaison Officer shall:

(1) Serve as the initial point of contact for participating response agencies and groups and identify assignments to appropriate UCS sections
(2) Receive and coordinate all calls from public and private entities offering assistance or requesting information.
(3) Resolve and identify to the Unified Command public and private concerns related to the status and effectiveness of the response

F. LEGAL OFFICER – The Legal Officer is responsible for advising the Unified Command on matters of law regarding the response effort, environmental issues, and violations.

II. OPERATIONS SECTION:

The operations section is responsible for the management of all tactical activities during the response effort

A. OPERATIONS SECTION CHIEF – A Kiantone Pipeline or United Refining Company individual shall be assigned to the operations section as the Section Chief and shall:

(1) Implement and manage the operations section branches and units needed to accomplish operations section actions
(2) Assist the planning section in defining strategic response goals and tactical operational objectives
(3) Develop detailed mission assignments, schedules, duty lists and operational assignments to accomplish the strategic response goals and tactical operational objectives
(4) Identify additional response resources required or recommend the release of resources to the Unified Command
(5) Evaluate and report on response countermeasure efficiency

B. PROTECTION & RECOVERY BRANCH – This branch is responsible for ensuring the effect of a discharge of oil or release of hazardous substance is mitigated in an assigned geographic area of responsibility. This may involve supervising the actions of a contractor or third party or actual direction of the response personnel. The Branch Chief shall:

Protection Unit

(1) Deploy and maintain booms, dikes or other protection devices as directed to accomplish protection, diversion or containment strategies and modify planned strategies as required by actual field conditions.
(2) Provide estimates of protection completion times.
(3) Report on the effectiveness of booming to the Operations Section Chief.
(4) Maintain booms and mooring systems and ensure that product which has been contained, diverted or captured is recovered.
(5) Identify protection resource and logistics needs, including boom types, lengths, mooring systems and vessel support requirements.
(6) Propose alternative protection strategies based on field results and environmental conditions.

Recovery Unit

(1) Direct the delivery, deployment and operation of recovery equipment.
(2) Manage the personnel and equipment necessary to accomplish shoreside recovery and cleanup objectives established in the action plan.
(3) Provide a field status of recovery operations to be the Operations Section Chief.
(4) Maintain estimates of product recovered.
(5) Identify field conditions related to the effectiveness of recovery operations.
(6) Ensure recovery and holding containers operate efficiently.

(7) Supervise response contractors. A continuous Kiantone Pipeline or United Refining Company presence will be maintained on the scene to supervise the response/cleanup to ensure the actions of the contractor are in accordance with the incident action plan and that resources used are appropriate. Kiantone/United Refining personnel shall:

(a) Record time on scene of all contract personnel.
(b) Record the types and numbers of boats, vehicles and other assets (skimmers, vacuum trucks, etc.) employed on scene and the nature of their work.
(c) Record the type and amount of expendable items used (e.g. sorbent materials).
(d) At the end of each shift, meet with the foreman or other person in charge to verify information recorded. This information shall be forwarded to the finance section via the operations section.

(8) Project cleanup completion dates.
(9) Direct the collection, temporary storage, transportation, recycling and disposal of recovered wastes.
(10) Estimate the volume of waste that may be recovered and ensure adequate resources and logistics support are provided.
(11) Manage temporary storage sites and prevent secondary discharges or cross contamination.
(12) Confirm the laboratory results characterizing the wastes as hazardous or non-hazardous and prepare RCRA manifests as required.
(13) Confirm the capacities of recycling or disposal sites.
(14) Identify decontamination needs and provide resources to accomplish required cleaning and decontamination of personnel and equipment.
(15) Identify resource and logistics needs.

C. SITE MANAGEMENT BRANCH

(1) Identify staging sites need to the Operations Section Chief.
(2) Prepare designated staging sites and facilitate the movement of response resources into operation.
(3) Report on status of equipment ready for operations.
(4) Coordinate and conduct physical security for staging sites.
(5) Identify additional resources and logistics needs.

D. EMERGENCY RESPONSE BRANCH

Law Enforcement Unit

State and local law enforcement officials will be assigned to the law enforcement unit and shall:

(1) Develop safety zones, security zones, and traffic management alternatives for affected public traffic ways
(2) Coordinate and implement enforcement of safety, security, and traffic zones
(3) Identify additional resources and logistics needs

Fire/HazmatUnit

In the event of a fire, the Fire Chief will temporarily assume the role of Incident Commander until the fire has been extinguished. Once removed, command will resume as prescribed by this ICS. If Fire and Hazmat personnel remain on standby due to a potential for fire or chemical release, they will form the Fire/Hazmat Unit and shall:

(1) Assist in the development of safety zones to minimize the potential of fire or chemical exposure.
(2) Identify additional resources and logistics needs.

III. PLANNING SECTION

The planning section is responsible for the collection, evaluation and dissemination of tactical information on the incident.

A. PLANNING SECTION CHIEF – At least one Coast Guard officer shall be assigned to the planning section and shall:

(1) Implement and manage the Planning Section branches and units needed to proactively accomplish the Planning Section action.
(2) Anticipate the need for information describing the status of the response and manage the system required to collect and disseminate response information.
(3) Provide detailed incident action plans based on projected response needs to the Unified command.
(4) Support the Unified Command by evaluating alternative strategies and tactical operation plans that anticipate changing requirements.
(5) Recommend changes to the UCS organization that anticipate response requirements.

B. TECHNICAL BRANCH – The number and type of technical specialists will vary greatly depending on the needs of the incident. Technical specialists are advisors to the Unified Command who can assist by providing scientific and technical information and analysis to support response planning and operations, preparing the incident action plan, and forecasting environmental damage and pollutant migration. Technical specialists assigned to the Unified Command shall:

(1) Evaluate appropriate opportunities to effectively use alternative response technology (ART), including dispersants or other chemical countermeasures, in situ burning, bioremediation or other alternative response technologies.
(2) Conduct the planning and consultation required to apply a specific ART to the response.
(3) Identify environmental trade-offs associated with application of a specific ART.
(4) Provide detailed recommendations and plans regarding the applicability of a specific ART.
(5) Provide forecasts and analysis of natural resource damages to directly support strategic response planning and assist in prioritization of removal actions.
(6) Identify changes in protection priorities or response activities that could prevent, reduce or minimize impacts to natural resources.
(7) Assist in the development of the disposal plan that details the collection, temporary storage, transportation, recycling, and disposal of all anticipated response wastes.

C. STRATEGY BRANCH

(1) Develop and update strategic response goals and tactical objectives in anticipation of each phase of the response.
(2) Develop and modify detailed incident actions plans based on projected response needs.

(3) Prepare and update alternative response strategies and tactical operations plans that anticipate changing requirements.
(4) Develop natural resource protection priorities and protection strategies.
(5) Identify response agencies, groups, individuals, or resources that need to be incorporated into the UCS.
(6) Collect, analyze and disseminate information about the situation as it progresses.
(7) Collect, analyze, and disseminate information about the status of current and projected response resources including: personnel, equipment, vessels, aircraft, vehicles, facilities, materials and supplies.

D. DOCUMENTATION BRANCH – The documentation branch is responsible for maintaining accurate and complete incident files including: logs, incident reports, press releases and any historically significant material, etc.; providing duplication services to incident personnel; filing, maintaining and storing incident files for legal, analytical and historical purposes.

E. MOBILIZATION BRANCH – The mobilization branch is responsible for the transition of personnel into the unified command organization and back to their home unit. These duties are necessary when personnel are assigned TAD, or reserve personnel are activated.

IV. LOGISTICS SECTION:

The logistics section is responsible for all support needs to the incident.

A. LOGISTICS SECTION CHIEF – The Kiantone Pipeline or United Refining Company representative to the logistics section shall:

(1) Implement and manage the Logistics Section branches and units needed to proactively accomplish Logistics Section actions.
(2) Ensure the prompt delivery of resources to support response operations. Early emphasis on the delivery of heavy response equipment and personnel, providing communications resources, and the continuous need for support services are the highest priorities of the Logistics Section.
(3) Manage, document, support and anticipate the need for response resources, equipment, personnel and services.
(4) Anticipate, coordinate and proactively manage all requests for additional resources and logistics support.
(5) Develop logistics alternatives to support Planning and Operations Sections missions.
(6) Report on Logistics Section operations.

B. COMMUNICATION BRANCH – This branch is responsible for developing plans for the effective use of communication equipment and facilities. The Kiantone Pipeline/United Refining Company representative to the communication branch shall:

(1) Develop, implement and coordinate the communications plan.
(2) Deliver, issue, track, maintain, support and recover communication resources, telephones, radios, base stations, repeaters and other communication facilities.
(3) Identify additional communications resources or logistics needs.
(4) Report on the status of communications capabilities and operations.

C. SERVICE BRANCH

Medical Unit

This unit is responsible for the development of the medical emergency plan and preparation of reports. This unit must obtain medical assistance and transportation for injured personnel. Kiantone Pipeline/United Refining Company representative to the medical unit shall:

(1) Provide and coordinate emergency and routine medical services to response personnel.
(2) Manage dedicated Medical Unit resources and coordinate additional medical services.
(3) Identify resources and logistics support needs.
(4) Report the status of Medical Unit Services.

Food Unit

This unit is responsible for supporting personnel subsistence. This unit shall manage the food distribution, preparation and contracting to ensure a nutritious meal is served in a timely manner. The Kiantone Pipeline/United Refining representative to the food unit shall:

(1) Provide and coordinate meals and subsistence support to response personnel.
(2) Plan, document and account for the number and type of meals required.
(3) Establish kitchens, galleys, canteens and other food services support locations as necessary.
(4) Establish and manage sources of supply to support meal and subsistence requirements.
(5) Provide potable water, coolers, and other beverages required to support response operations.
(6) Identify additional resources and logistics support needs.
(7) Report on the status of food and subsistence services.

Berthing Unit

(1) Provide and coordinate berthing facilities assigned to the response personnel.
(2) Plan, document and account for the number and type of berthing facilities required.
(3) Maintain hotel contracts, berthing quarters and remote location camps as necessary to provide living, sleeping, hygiene, and restroom facilities for response personnel.
(4) Identify additional resources and logistics support needs.
(5) Report on the status of Berthing Unit services.

D. SUPPORT BRANCH

Facilities Unit

The facilities unit is responsible for establishing, maintaining and demobilizing all facilities used in support of response operations including, as necessary, the Command Post, Joint Information Center, staging areas, communication facilities, feeding and berthing locations and sanitation facilities. Also responsible for facility maintenance and security. The Kiantone Pipeline/United Refining Company representative to the facilities shall:

(1) Plan, document, and account for response facilities needed.
(2) Manage and support facility utility and maintenance services.
(3) Provide portable hygiene and restroom facilities to support remote operation locations.
(4) Identify additional facility resources and logistics support needs.
(5) Report on the status of response facilities.

Supply Unit

This unit is responsible for ordering, receiving, storing and processing of all incident-related resources and supplies. The Kiantone Pipeline/United Refining Company representative to the supply unit shall:

(1) Deliver and coordinate the delivery of response equipment, material and supplies.
(2) Maintain stocks or expendable supplies ready to be issued.
(3) Plan, document and account for response supplies and materials.
(4) Issue personal protective equipment and expendable personal supplies to response personnel.
(5) Coordinate the ordering and delivery of spare parts, supplies, materials and other resources to meet response needs.
(6) Report on response equipment delivery timetables, inventories of available supplies and the status of Supply Unit services.

Transportation Unit

This unit is responsible for the maintenance and repair of primary tactical equipment, fueling and incident traffic plan. The Kiantone Pipeline/United Refining Company representative to the transportation unit shall:

(1) Provide, prioritize, schedule and coordinate response transportation services.
(2) Plan, document and account for response transportation services.
(3) Manage and maintain dedicated transportation resources and coordinate transportation using resources of opportunity.
(4) Operate and manage the "Motor Pool" of dedicated ground transportation vehicles, including cars, vans, buses, and trucks.

E. PERSONNEL BRANCH – This branch is responsible for managing the personnel resource needs of the UCS. The Kiantone Pipeline/United Refining Company representative to the personnel branch shall:

(1) Coordinate and document the assignment of UCS personnel to meet response organization needs.
(2) Coordinate requests for additional response personnel.
(3) Coordinate the processing of arriving response personnel.
(4) Plan, document, and account for response assignments made to individuals, agencies, groups and commercial personnel.
(5) Identify additional resources and logistics support needed to support personnel processing and tracking.
(6) Report on the status of response personnel assignments and processing.

V. FINANCE SECTION

The importance of the finance section in pollution response cannot be over-emphasized. During the course of the response organic and contracted expenditures will be made. The finance section is responsible for the centralized tracking and accounting of these expenditures.

A. FINANCE SECTION CHIEF – Responsible for the management of the Finance Section units. The Kiantone Pipeline or United Refining Company representative to the finance section shall:

(1) Implement and manage the Finance Section branches and units needed to proactively accomplish Finance Section actions.
(2) Provide, manage, coordinate, document and account for access to response funding sources.
(3) Coordinate and ensure the proper completion of response cost accounting documentation.
(4) Coordinate and manage response ceilings, budgets and other cost estimates.
(5) Provide financial support for contracting services, purchases and payments.
(6) Identify additional financial services resources or logistics support needed.
(7) Report on the status of Finance Section services.

B. CONTRACT BRANCH – The contract branch administers financial matters pertaining to vendor contracts. The contract branch may also work with local jurisdictions to locate sources of equipment, prepare rental agreements, and administer the associated contractor paperwork. The Kiantone Pipeline/United Refining Company representative to the contract branch shall:

(1) Negotiate, coordinate, document, and manage all contracts needed to support response operations.
(2) Manage, coordinate, document, and account for all procurement orders needed to support response operations.
(3) Manage, coordinate, document, and account for all payments made to support response operations.
(4) Identify additional resources and logistics support needed to accomplish contracting and procurement services.
(5) Report on the status of contracting, procurement and payment services.

C. CLAIMS BRANCH – This unit is responsible for overseeing that all forms for claims by workers and third parties are completed. Many of this unit's duties may be accomplished in the medical unit. Tort claims involving property are also handled in this unit. The Kiantone Pipeline/United Refining Company representative to the claims unit shall:

(1) Receive, coordinate, document and process claims.
(2) Coordinate evaluation of personal property damage claims.
(3) Identify additional resources and logistics support needed to process claims.
(4) Report on the status of claims processing.

D. COST BRANCH – This cost branch is responsible for recording all cost data for the incident including ensuring daily personnel and equipment time recording documents are properly prepared and collected. The cost branch ensures vendors providing equipment or services are properly identified and proper paperwork is initiated. They prepare estimates of future incident costs and maintain accurate information on the actual use of resources. The Coast Guard representative to the cost branch shall:

(1) Manage, coordinate and perform cost documentation to account for response costs.
(2) Plan, coordinate, document and account for response costs based on the time personnel, equipment, and other resources are accountable to the response.
(3) Identify additional resources and logistics support needed to perform cost documentation and time keeping services.
(4) Report on documented response costs and projected response costs.

APPENDIX E
Statement by Owner of Commitment of Response Resources

Commitment of Response Resources

Kiantone Pipeline Corporation has a vested interest in managing and maintaining its pipelines and pipeline facilities in the safest and most effective manner possible. Kiantone's objective is to provide petroleum to United Refining Company in an efficient and reliable manner without adverse effects on employees, the public, or the environment.

As part of maintaining safety and protecting the environment, Kiantone regularly reviews, updates, and exercises this Facility Response Plan per the standards set forth in 49CFR194, Subpart B and will continue to commit the necessary resources to ensure it is implemented as required.

Frederick J. Martin, Jr.
Vice President, Supply & Transportation

APPENDIX F
Letters of Commitment from Oil Spill Response Organizations

EMERGENCY SPILL AGREEMENT

THIS AGREEMENT, for environmental spill services, is made the 11th day of March, 2014, by and between United Refining Co./Kiantone Pipeline hereinafter referred to as the "Company," with facilities located at _____ and New York Environmental Technologies, Inc., hereinafter referred to as the "Contractor," with the following terms and conditions incorporated herein.

Terms and Conditions

1. The Contractor shall respond to all emergency situations involving the release of oil and hazardous materials. The Company must call the Contractor's 24-hour response line 1-800-80-SPILL (1-800-807-7455), or 585-436-5660. The release of oil and hazardous materials may result from a fire, explosion, leak, spill, flood, and a natural or man-made disaster.

2. The Contractor shall be on call to respond with appropriate equipment and manpower, 24 hours a day.

3. The Contractor shall clean up, contain, mitigate, transport, arrange bulk storage at the incident site or within the Company's premises and dispose of released materials according to state and federal environmental regulations utilizing appropriate engineering technology.

4. The Contractor shall supply tools, equipment, materials, labor, and all necessary items needed to clean, contain, dispose of, or store materials released at the incident site or within the Company's premises.

5. The Company shall maintain inventory of any special neutralizing or treating agents recommended by the chemical manufacturer for chemicals stored at its facilities.

6. The Contractor shall supply at its current rates, additional equipment for support and maintenance of the Company's equipment or the decontamination of personnel and/or equipment.

7. The Contractor shall supply personnel trained in accordance with OSHA and other applicable safety regulations.

8. The Company shall supply an Emergency Coordinator or official knowledgeable of the chemical being handled and the physical location of the spill. The Company is responsible to supply material safety data sheets for the chemicals being handled.

9. The Company shall supply the Contractor with updated material inventory, material safety data sheets, Company contact names and telephone numbers, site drawings, and other appropriate information. Company shall update appropriate information with any change. At a minimum, this information must be reviewed annually.

10. The Contractor shall supply to the Emergency Coordinator or official, a 24-hour dispatch emergency telephone number.

11. The Contractor shall document all activities related to the sampling, cleanup, containment, storage or transportation of released materials.

12. The Contractor shall prepare daily activity reports or logs pertaining to activities associated with the services provided.

13. The Contractor shall have environmental liability insurance and workmen's compensation insurance.

14. The Contractor and its employees shall not make public information that may pertain to the emergency situation.

15. The Company shall supply to the Contractor, telephone and utilities, if not disrupted by the incident, and other support, as required and applicable.

16. The Company shall be responsible for providing secure storage space for drums, tanks, roll-off containers, vacuum trucks or box trucks/trailers for the storage of materials prior to disposal.

17. The Company shall have legal responsibility to report the spill to federal, state or local officials. The Company and Contractor shall be jointly responsible for communicating and working with federal, state or local officials.

18. If unsafe conditions occur while the Contractor is performing services, or if directed by federal, state or local officials, either the Contractor or the Emergency Coordinator or official shall stop work on the project.

19. The Company shall provide the Contractor with a written set of Company safety rules and regulations, if the incident is on Company property. The Contractor shall obey all the Company safety rules and regulations while on Company property.

20. The Company will issue an open Purchase Order upon the execution of this Agreement. The Company shall pay the Contractor, in accordance with its normal terms (net 10 days), on a time and material basis, for all work performed, including disposal costs. The Contractor shall supply an itemized invoice at the Time and Material price structure that is in effect at the time the services are rendered. The Company hereby acknowledges that it has received a current Time and Material price listing, which is attached.

    Prior to execution of this Agreement, and prior to a renewal term if any, the Company will provide credit information to the Contractor as required in the Contractor's credit application. The Contractor will establish a level of credit based upon the Company provided credit information and the Contractor's credit policies.

21. The attached Emergency Spill Information Sheet is incorporated into this Agreement.

22. The Company agrees to indemnify, exonerate, and hold the Contractor harmless against loss, damage, or expense, by reason of suits, claims, demands, judgments, and causes of action for personal injury, death, or property damage arising out of or in any way in consequence of the performance of all work undertaken by the Contractor except that in no instance shall the Company be held responsible for any liability claim demand or cause of action attributable solely to the negligence of the Contractor.

23. This Agreement shall be governed by the laws of the State of New York.

24. This Agreement can only be modified by a written agreement duly signed by persons authorized to sign agreements on behalf of the Company and of the Contractor.

25. This Agreement is in effect for one (1) year from the date listed above, and automatically renews for succeeding years. This Agreement may be terminated in writing by either party upon thirty (30) days notice.

The parties hereto have executed this Agreement this 11th day of March, 2014.

United Refining Company
Company Name

Authorized Signature

Timothy D. Ruth
Please Print Name

Environmental Compliance Officer
Title

March 11, 2014
Date

New York Environmental Technologies, Inc.
Company Name

Amy M. Hudak
Authorized Signature

Amy M. Hudak
Please Print Name

Environmental Coordinator
Title

3/14/2014
Date

WEG
Weavertown Environmental Group covers it all.

www.weavertown.com

24 365 7

EMERGENCY RESPONSE SERVICES AGREEMENT

This Agreement is made and entered into as of this 27th day of April, 2012 by and between *UNITED REFINING COMPANY*, of P.O. Box 780, Warren, PA 16365 and Weavertown Environmental Group (WEG), a division of Weavertown Transport Leasing, Inc. (WTL), with its principal offices at 2 Dorrington Road, Carnegie, Pennsylvania 15106, hereinafter referred to as WEG.

WHEREAS, *UNITED REFINING COMPANY's* business involves handling and storing petroleum products and/or other hazardous materials (hereinafter collectively referred to as "Oil and/or Hazardous Materials"), which may result in conditions necessitating emergency response when inadvertently released into the environment, and

WHEREAS, WEG is engaged in the business of providing emergency response services with respect to releases into the environment of Oil and/or Hazardous Materials.

NOW, THEREFORE, in consideration of these premises and the mutual covenants contained herein, the parties agree as follows:

1. Scope of Work

   A. WEG shall provide to *UNITED REFINING COMPANY* upon *UNITED REFINING COMPANY*'s request emergency response services that may include, but are not limited to: containment, removal, neutralization, decontamination, recovery, clean up, repackaging, and transportation of Oil and/or Hazardous Materials. WEG will render said emergency response services to any location within the *UNITED REFINING COMPANY*'s system.

   B. *UNITED REFINING COMPANY* shall be entitled to request WEG's emergency response services upon giving notice by telephone twenty-four (24) hours per day, seven (7) days per week by calling (800) 746-4850. At such time, the *UNITED REFINING COMPANY* representative making the call will furnish to WEG the name and title of the caller, the location of the site needing emergency response services (hereafter referred to as the "Site"), the Oil and/or Hazardous Materials involved, if known, and other relevant facts relating to the situation then known to the caller.

C. Upon receiving a request for emergency response services from *UNITED REFINING COMPANY*, WEG shall promptly confirm that it has the personnel and equipment available to respond. Promptly upon a request for services, *UNITED REFINING COMPANY* shall verbally designate its authorized representative hereunder. WEG shall promptly mobilize the necessary personnel and equipment and proceed to the Site as quickly as reasonably possible.

D. The parties recognize that at the commencement of emergency response services hereunder, the scope thereof may not be well defined. The parties agree that at the commencement of an emergency response services project, their respective representatives shall consult with each other to define the scope of the work to be performed and outline strategies and approaches to such work. If the parties later agree to modify materially the scope of the work or the strategies or approaches thereto, they shall within seven (7) days of such modification sign a written amendment to the purchase order described in Section 1 (E) hereof.

E. *UNITED REFINING COMPANY* shall promptly issue to WEG a purchase order describing the scope of the work to be performed (hereinafter referred to as the "Work") and designating *UNITED REFINING COMPANY*'s and WEG's representatives authorized to act with respect to the Work. In the event of a conflict between the terms of such purchase order and the terms of this Agreement, the terms of this Agreement shall prevail.

F. WEG will obtain and maintain any classification/certification required by applicable federal, state, and local laws, regulations, and ordinances and to give notice to *UNITED REFINING COMPANY* should such classification/certification terminate.

G. *UNITED REFINING COMPANY* understands that WEG shall use its best efforts to respond to an emergency in accordance with the terms of this agreement. However, emergencies are by their nature unpredictable with multiple variables. WEG will work with *UNITED REFINING COMPANY* to control or manage such variables and will be accountable for variables they can reasonably control.

2. <u>WEG's Responsibilities</u>

A. WEG shall provide trained, competent, and appropriate supervision, labor, materials, tools, equipment, personal protective equipment (PPE), and subcontracted items where necessary for the performance and completion of the Work in a safe, timely and efficient manner. WEG recognizes that time is of the essence in the performance of the Work.

B. WEG shall at all times keep the Site free from the accumulation of debris and rubbish that may result from its performance of the Work. At the completion of the Work, WEG shall promptly remove all of its tools, vehicles, equipment, machinery, surplus materials, debris, and rubbish from and around the Site.

C. WEG shall take necessary precautions for safety of its employees and *UNITED REFINING COMPANY*'s employees present on-site, and shall comply with all applicable provisions of federal, state, and local safety and health, laws, rules, and regulations. While on premises, WEG shall abide by all such *UNITED REFINING COMPANY* rules provided to WEG by *UNITED REFINING COMPANY*. WEG shall erect and properly maintain as required by the conditions and progress of the Work necessary safeguards for the protection of its employees and *UNITED REFINING COMPANY*'s employees. WEG shall require all subcontractors hired or supervised by it to implement such precautions and safeguards and to comply with all such laws, rules, and regulations.

D. WEG shall maintain full and detailed records concerning personnel, labor, materials, tools, equipment, and subcontractors provided by it under this Agreement and all audited by *UNITED REFINING COMPANY* upon request, and shall be available for inspection for a period of two (2) years after the Work has been completed, or longer where required by law.

E. WEG shall promptly pay for all labor and materials used by it in the performance of the Work and shall promptly discharge all liens or claims for labor, services, or materials for which, if established, *UNITED REFINING COMPANY* might become liable or which might attach to *UNITED REFINING COMPANY*'s property and which arise from WEG's activities under this Agreement or otherwise. *UNITED REFINING COMPANY* may withhold compensation under Section 4 hereof in an amount necessary to discharge any such liens or claims until WEG discharges same provides adequate evidence thereof to *UNITED REFINING COMPANY*.

F. If WEG removes Oil and/or Hazardous Materials or waste from the Site for disposal, recycling, or other disposition, WEG shall prepare any manifests or shipping papers in coordination with *UNITED REFINING COMPANY*. Manifest signature shall constitute *UNITED REFINING COMPANY*'s approval of any treatment, storage, disposal, or recycling facility to which such Oil and/or Hazardous Materials and/or wastes are to be sent. WEG will not assume generator status, at anytime.

G. If requested by *UNITED REFINING COMPANY*, WEG shall assist *UNITED REFINING COMPANY* in obtaining the proper and necessary permits for the Work. All required environmental clean up permits will be issued in *UNITED REFINING COMPANY*'s name.

3. *UNITED REFINING COMPANY*'s Responsibilities

A. If requested by WEG, *UNITED REFINING COMPANY* shall furnish to WEG information on the Site to the extent known and available to *UNITED REFINING COMPANY* concerning physical characteristics, soil reports, subsurface investigations, utility and easement locations, and other similar reports or documents reasonably needed by WEG to perform the Work. Where necessary, and to the extent known and available, *UNITED REFINING COMPANY* shall

furnish information on any body of water or shoreline affected, including charts and maps.

B. *UNITED REFINING COMPANY* will provide to WEG (or arrange to have provided to WEG where *UNITED REFINING COMPANY* does not own or operate the Site) its employees and subcontractors, and reasonable access to the Site necessary to carry out the work. If available, *UNITED REFINING COMPANY* may provide the following services at the Site for WEG's use upon mutually agreed terms and conditions as evidenced by *UNITED REFINING COMPANY*'s purchase order: electrical power, potable water, telephones, storage for equipment, and reasonable access to the Site for vehicles and equipment.

4. Compensation

A. *UNITED REFINING COMPANY* shall compensate WEG for the Work on a time and materials basis in accordance with the WEG/WTL Time and Material Rate Sheet in force at the time of the release, which is available upon request.

B. Invoices for all work shall be issued monthly to the facility that issued the purchase order under Section 1 (E) and shall include:

1) Purchase Order Number;
2) Copies of applicable subcontractors requisitions;
3) Description of personnel provided, their job titles, hours worked, and hourly rate;
4) Description of materials, equipment, and tools provided, the time they were used in the Work, and the rate therefore; and
5) Other supporting details reasonably requested by *UNITED REFINING COMPANY.*

C. *UNITED REFINING COMPANY* shall pay all WEG's invoices within thirty (30) days of receipt. The parties will endeavor to resolve any errors, discrepancies, or disputes promptly.

D. *UNITED REFINING COMPANY* may, upon its request, audit any and all records of WEG or any subcontractor relating to work performed and/or materials and/or services provided hereunder; provided, however, WEG and subcontractor shall have the right to exclude any trade secrets, formulas, or work processes from such inspection. WEG further agrees to maintain its books and records relating to work performed hereunder for a period of two (2) years from the date such work was completed or such materials and/or services were provided, or longer where required by law, and to make such books and records available to *UNITED REFINING COMPANY* at any time, or times within such period.

5. Term & Termination

A. The term of this Agreement shall begin on the date set forth above and unless terminated in accordance with the provisions set forth herein, shall continue for a

period of one year and shall be renewed monthly thereafter until terminated by no less than thirty (30) days prior written notice from either party to the other.

B. In addition to the termination rights provided in the preceding paragraph, either party hereto may terminate this Agreement upon the occurrence of any material breach, including any breach of obligations in Section 2, by the other party by giving written notice of such breach to the breaching party. This Agreement will terminate ten (10) calendar days after receipt of such notice unless the breaching party has cured such breach within such ten (10) calendar day periods and promptly notifies the non-breaching party thereof. Upon any termination, *UNITED REFINING COMPANY* shall compensate WEG for all Work performed in accordance with this Agreement prior to termination. All obligations arising prior to termination and all rights and obligations of the parties pursuant to Sections 10 and 11 shall survive any termination of this Agreement.

6. WEG's Warranties

A. WEG warrants and represents that it has the necessary equipment and the necessary trained, experienced, and skilled personnel to respond to a request and to perform the Work hereunder in a good and workmanlike manner consistent with the highest standards of performance in the hazardous materials emergency response business and that all Work will be performed using personnel, subcontractors, tools, materials, and equipment qualified and suitable to do the Work. Details of equipment capabilities and personnel are available upon request. This equipment will be available for inspection by *UNITED REFINING COMPANY*, the Environmental Protection Agency (EPA), and other governing regulatory authorities.

B. WEG warrants and represents that it will use its best professional judgment and use its best level of effort consistent with professional standards in performing the Work.

C. WEG warrants and represents that it shall perform the Work in accordance with all applicable federal, state, and local laws, regulations, and ordinances including, but not limited to, the following as appropriate:

1) The Oil Pollution Act of 1990 and regulations and applicable guidelines promulgated there under;
2) The National and Area Contingency Plans;
3) The hazardous waste requirements under the Resource Conservation and Recovery Act concerning the generation, transportation, and disposal of hazardous waste;
4) The Occupational Safety and Health Administration standards with respect to oil and hazardous operations and emergency response; and
5) The Comprehensive Environmental Response, Compensation and Liability Act as amended by the Superfund Amendments and Reauthorization Act and regulations promulgated there under.

D. WEG warrants and represents that while performing Work on *UNITED REFINING COMPANY*'s premises it will comply with *UNITED REFINING COMPANY*'s rules provided to WEG in the performance of the Work with respect to health, safety, environment, and security.

E. WEG warrants and represents that it shall immediately notify *UNITED REFINING COMPANY* of the following:

1) All government requests or demands to conduct and inspection at the Site;
2) All notices of violation of any law, regulations, permit, or license related to the Work;
3) Proceedings that are or have been commenced which could lead or have lead to revocation of permits or licenses which relate to the Work; and
4) Equipment, materials, tools, practices, or procedures used in the Work that are not in compliance with applicable laws, regulations, ordinances, permits, or licenses.

7. Site Discipline

While its employees and subcontractors are on the Site, WEG will maintain strict work discipline. Whenever *UNITED REFINING COMPANY* informs WEG that any of WEG's employees or subcontractors are disorderly, breach this Agreement, or are otherwise lacking in the skill, applicable training and certification or experience necessary for the safe and efficient completion of the Work, WEG shall permanently remove such employees and/or subcontractors from the site and performance of the Work.

8. Force Majeure

Neither party shall have any liability or obligation to the other party for failure in the performance of any duty or obligation under this Agreement if such failure is caused by events beyond the nonperforming party's reasonable control including, but not limited to, acts of God, acts of war, blockade, embargo, sabotage, riot, lightning, flood, earthquake, shortages of material or equipment, strikes, labor, stoppages or lockouts. Notices of a force majeure situation and cessation thereof shall be given by the party claiming same by telex or other writing promptly following the occurrence thereof. The party claiming such force majeure shall take all reasonable steps to overcome same and resume performance hereunder as soon as possible; provided, however, that neither party shall be required to settle any labor dispute against its own best judgment.

9. Insurance

A. WEG shall obtain, at a minimum, the below listed insurance coverages and upon *UNITED REFINING COMPANY*'s request, furnish certificates of insurance evidencing such coverage to *UNITED REFINING COMPANY*. Every certificate of insurance required herein shall be endorsed to provide *UNITED REFINING COMPANY* with thirty (30) day prior written notice of cancellation. WEG shall maintain said insurance in following amounts:

COVERAGE	LIMITS OF LIABILITY
Worker Compensation	Statutory
Employers Liability	$1,000,000
General Liability, including contractual liability claims made basis	
Bodily Injury	$ 1,000,000 per occurrence
	$ 2,000,000 aggregate
Property Damage	$ 1,000,000 per occurrence
	$ 2,000,000 per aggregate
Motor Vehicle Liability	
Bodily Injury and	$ 1,000,000 comb. Single limit

B. If the geographical area encompassed by Section 1 (A) includes state or United States bodies of water, the insurance to be provided by WEG in Section 9 (A) shall be suitably endorsed to include the following:

1) Workers compensation coverage covering the United States Longshoremen's and Harbor Workers' Compensation Act and as extended to Outer Continental Shelf operations, if applicable; and
2) Comprehensive general liability insurance including contractual liability to cover maritime operations with minimum limits of $1,000,000 for death or injuries and property damage arising out of one accident.

10. Indemnification

WEG agrees to and shall indemnify, hold harmless, and defend *UNITED REFINING COMPANY*, its officers, directors, agents, and employees from and against claims, losses, damages, causes of action, lawsuits, and liability (including strict liability and unseaworthiness of vessels), including all expenses of litigation, court costs, and attorney's fees, for injury to or death of a person or persons, including WEG employees, for loss of or damage to any property, including property of *UNITED REFINING COMPANY* arising out of or in connection with performance of the work by WEG, WEG's employees, subcontractors, or subcontractors' employees regardless of cause, negligence or otherwise, unless caused in part by the negligence or fault of *UNITED REFINING COMPANY*, in which event WEG shall not indemnify *UNITED REFINING COMPANY* to the extent the damages are determined to have been caused by *UNITED REFINING COMPANY*. *UNITED REFINING COMPANY* shall hold harmless, release, and indemnify WEG for such costs.

11. Patents and Confidentiality

A. WEG agrees to defend on behalf of *UNITED REFINING COMPANY*, but at WEG's expense, any action at law or suit in equity which may be brought against *UNITED REFINING COMPANY* at any time for infringement of any patent or patents allegedly relating to:

1) The design, composition, use, mode of fabrication, or other particulars of the apparatus or structures, or any one or more of the elements or parts thereof, furnished under this Agreement by WEG, its subcontractors or vendors; or
2) The use of any raw, unfabricated or unassembled materials, composition of matter, fabrication procedure, heat treatment, or other things entering into the manufacture of said apparatus or structures, or any one or more of the elements or parts thereof; or
3) The use of any construction methods, tools, machines, or other construction devices used in the execution of the Work;

provided *UNITED REFINING COMPANY* promptly notifies WEG in writing of the institution of such action or suit and permits WEG to control its defense. WEG shall pay all costs and expense of any such action or suit, including compensation and expenses of experts and counsel and selection, and WEG shall also pay and save *UNITED REFINING COMPANY* free and harmless from any damages or other sums awarded or assessed in any action or suit. *UNITED REFINING COMPANY* may be represented by counsel of its own selection at its own expense, and agrees to cooperate fully in the defense of any such action or suit.

B. In connection with the Work, WEG may receive confidential, proprietary information used in *UNITED REFINING COMPANY*'s operations. WEG agrees to maintain in confidence all such information received directly or indirectly from *UNITED REFINING COMPANY* not to disclose such information to any third party without *UNITED REFINING COMPANY*'s prior written consent, and to use such information only for performance of the Work as required under this Agreement. WEG shall restrict access to such information to those of its employees and subcontractors who have a reasonable need for such information in carrying out their respective duties on behalf of WEG pursuant to this Agreement and who have agreed in writing to maintain such information in confidence.

C. WEG may not make copies of any such confidential or proprietary information without *UNITED REFINING COMPANY*'s prior consent and shall return all confidential proprietary information reports, drawings, plans, and other documents including all copies thereof to *UNITED REFINING COMPANY* upon request.

12. Independent Contractor

WEG shall be an independent contractor in the performance of the Work and neither WEG nor its employees or subcontractors are employees, servants, or agents of *UNITED REFINING COMPANY*.

13. Delegation & Assignment

Neither party may assign any right or delegate any obligation hereunder without the prior consent of the other. Any such assignment or delegation shall not relieve the assigning or delegating party of its obligations hereunder. In the event of an assignment or delegation by WEG, WEG shall remain obligated to *UNITED REFINING COMPANY* for the complete performance of the Work, and WEG shall require its subcontractors, assignees, and other delegates to abide by this Agreement in all respects.

14. Inspections

WEG agrees that *UNITED REFINING COMPANY* may conduct periodic inspections of the Work, without obligation to do so, and that such inspections shall not constitute acceptance of the Work nor acceptance of WEG's responsibilities hereunder.

15. Notices and Designated Representatives

A. Unless otherwise specified herein, any notice, communication, or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or by first class mail, postage prepaid, to the address of the respective party below:

Weavertown Environmental Group
a Division of Weavertown Transport Leasing, Inc.
2 Dorrington Road
Carnegie, Pennsylvania 15106
ATTN: Robert L. Kidd

UNITED REFINING COMPANY
P.O.Box 780
Warren, PA 16365
Attn: Dan Sobina
Telephone: 814-726-4846

Either party may, by written notice to the other, change its address and person or department to whom such notices are to be given.

B. *UNITED REFINING COMPANY*'s and WEG's authorized representatives with respect to a particular site and job shall be designated in the purchase order which authorized the Work. Said representatives shall have the authority to agree to

modifications in the scope of work and designation of representatives, and each party shall coordinate the Work with the other's representatives.

16. Accident Reporting

WEG shall immediately report to *UNITED REFINING COMPANY* all injuries, illnesses, and property damage occasioned by WEG's performance of the Work. WEG shall furnish to *UNITED REFINING COMPANY* upon request its workers compensation first report of injury or illness forms for such injuries and illnesses and assist *UNITED REFINING COMPANY* in investigating any incident in which it is involved to the extent requested by *UNITED REFINING COMPANY*.

17. Waiver

No waiver by either party of any default by the other party in the performance of any provision of the Agreement, shall operate as or be construed or deemed to be a waiver of any future default, whether alike or different in character.

18. Governing Law

The validity, interpretation, and performance of this Agreement shall be governed and construed in accordance with the laws of the state, excluding choice of law rules which direct application of the laws of another jurisdiction.

19. Section Headings

All section headings herein are for convenience only and are in no way to be construed as part of this Agreement or as a limitation of the scope of the particular sections to which they refer.

20. Entire Agreement

This instrument contains the entire Agreement between the parties hereto as of the last date of execution by either party hereof, and the execution hereof has not been induced by either party by representations, promises, or understandings not expressed herein. This Agreement supersedes all previous contracts related to the subject matter hereof between WEG and *UNITED REFINING COMPANY* including subsidiaries of *UNITED REFINING COMPANY*.

21. Amendments

This Agreement may be amended or modified only by a written amendment signed by both parties; provided, however, that the scope of a particular job and the designation of representative may be defined, amended, and modified as set forth herein.

22. Separability

If any section, subsection, sentence, or clause of this Agreement shall be adjudged illegal, invalid, or unenforceable, such illegality, invalidity, or unenforceability shall not affect the legality, validity, or enforceability of the Agreement as a whole or of any section, subsection, sentence, or clause hereof not so adjudged.

23. Parties Bound

The covenants and agreements contained in this Agreement shall apply to, insure to the benefit of, and be binding upon the parties hereto and upon their respective subsidiaries, affiliates, successors, and assigns. This Agreement shall not be interpreted or deemed to confer rights or benefits on persons not a party hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

Weavertown Environmental Group
a Division of Weavertown Transport Leasing, Inc.

By: _____
Signature

Robert L. Kidd
Name (Please Print)

Emergency Response Administrator WEG
Title

06.01.12
Date

UNITED REFINING COMPANY

By: _____
Signature

Timothy D. Ruth
Name (Please Print).

Environmental Compliance Officer
Title

5/29/12
Date

APPENDIX G

Excerpts from Options for Minimizing Environmental Impacts of Freshwater Spill Response

3.2 OPEN WATER

Habitat Description

Open-water environments exist in large water bodies, such as the Great Lakes, Lake Champlain, and Lake Mead. These large water bodies have ocean-like wave and current conditions; however, lake currents are generally weak (less than one knot). Local weather conditions commonly cause sudden changes in sea state. Suspended sediment loads are highly variable, both spatially and over time. River mouths are particularly problematic areas, with high suspended sediment and debris loads, shallow zones, and manmade structures, which create complex water circulation patterns.

Thermal stratification with an upper, warm layer over cool, denser water is a common feature of large lakes during the warmer months. In most temperate lakes, stratification ends in the autumn when surface cooling combines with water mixing from high winds. Ice formation is a common characteristic of interior and northern lakes in winter months. Although all inland waters are surrounded by land, response operations for open-water environments are water-based; that is, protection and recovery equipment must be deployed from vessels.

Sensitivity

Open waters are considered to have low to medium sensitivity to oil spill impact because physical removal rates are high, water-column concentrations of oil can be rapidly diluted, and most organisms are mobile enough to move out of the area affected by the spill. Enclosed and protected areas of large lakes are more sensitive than offshore and nearshore waters because of slower dilution rates. Oil spills can affect fish in the water column, with the early life stages at greatest risk. Also, many birds (waterfowl, raptors, gulls, terns, and diving birds) feed and rest on the water, and therefore are highly vulnerable. Human use of affected areas may be restricted for a period of time, potentially limiting access for navigation, transportation, water intakes, or recreational activities during the spill.

Free-floating flora or mats can occur in sheltered bays of nutrient-rich lakes. Such mats may be particularly susceptible to oil because of their location in bays where oil may accumulate. Moreover, the plants are at the water surface (where the oil is) and without underground roots to regenerate after being oiled.

Table 14. Relative environmental impact from response methods for OPEN WATER environments.

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Booming - Deflection/Exclusion	A	A	A	A
Booming - Containment	–	A	A	A
Skimming/Vacuum	–	A	A	A
In-Situ Burning	–	A	A	A
Natural Recovery	A	A	B	B
Physical Herding	B	B	B	B
Sorbents	–	B	B	B
Vegetation Removal	–	B	B	B
Emulsion Treating Agents	–	B	B	B
Visco-Elastic Agents/Solidifiers	–	B	B	–
Dispersants	D	B	B	–
Herding Agents	D	B	B	–
Manual Oil Removal/Cleaning	–	–	–	B
Mechanical Oil Removal	–	–	–	B
Nutrient Enrichment	–	–	I	I
Natural Microbe Seeding	–	–	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: OPEN WATER ENVIRONMENTS

Least Adverse Habitat Impact

Booming

- Most effective in low-wave conditions and slow currents
- Safety concerns limit the containment of gasoline spills; however, booms can be used to exclude or deflect the spill away from sensitive resources

Skimming/Vacuum

- Effectiveness limited by current velocities and widely spread, thin sheens
- Not applicable to gasoline spills because of safety concerns

In-Situ Burning

- Most appropriate in offshore, rather than nearshore, areas
- More difficult to ignite emulsified and heavy oils and sustain the burn
- Safety issues for workers, vessels, and aircraft must be addressed
- Not applicable to gasoline spills due to safety concerns and containment difficulties

Natural Recovery

- Low impact except for medium- to heavy-category oils, which are persistent and would eventually strand on shorelines

Some Adverse Habitat Impact

Physical Herding

- May be needed under calm conditions to move oil toward recovery devices
- Water spray onto gasoline likely to mix the product into the water column

Sorbents

- Not a stand-alone technique except for very small spills
- Inhibit the evaporation of gasoline spills

Vegetation Removal

- May be appropriate if oil is trapped in floating vegetation

Emulsion-Treating Agents

- Not applicable to oils that do not form emulsions, such as gasoline

Visco-Elastic Agents/Solidifiers

- Not appropriate to gasoline spills because of safety concerns during application and inhibition of evaporation
- The recovery of treated oil must be considered
- Most are not very effective on heavy oils, which are too viscous to allow the product to mix into the oil

Dispersants

- Inhibit the evaporation of gasoline spills
- Use requires comparing the impact of dispersed versus undispersed oil
- Not effective on heavy or weathered oils

Herding Agents

- Most effective under calm conditions
- Not applicable to heavy oils because oil must be fluid
- Inhibit the evaporation of gasoline spills

Manual Oil Removal/Cleaning and Mechanical Oil Removal

- Effective only when heavy oils have solidified into large masses
- Complete removal of heavy oil is rarely achieved

Insufficient Information

Nutrient Enrichment and Natural Microbe Seeding

- Not applicable to gasoline and diesel-like oils because they rapidly evaporate
- There is insufficient information on impact and effectiveness for other oil types, particularly for open-water applications in freshwater

3.3 LARGE RIVERS

Habitat Description

Large rivers have varying salinities, meandering channels, and high flow rates (currents usually greater than one knot). These rivers are not necessarily navigable to large vessels. If they are, the environment can include associated locks, dams, pools, and other manmade structures. Examples of large rivers include the Mississippi River and its major tributaries, the Hudson River, the Delaware River, and the Columbia River. Water levels vary seasonally, with potential for reversal of water flow up tributaries and into backwater lakes during high water. Floodplains are common characteristics of large rivers. Floods generate high suspended sediment and debris loads. In northern regions, ice covers the surface in winter. River banks or bars are discussed in the sections on shore habitats (Sections 3.6 to 3.13), and backwater lakes are discussed in Section 3.4.

Sensitivity

Large rivers have medium sensitivity to oil spill impact because, even though they have high natural removal rates, they also have extensive biological and human use. Biological resources of concern include concentrations of migratory waterfowl and shorebirds, fish, and endangered mussel beds. Under flood conditions, river floodplains contain highly sensitive areas that are important habitats for many valuable species. Floating vegetation is present in areas of low flow. Recreational use of rivers is very high, and many are major transportation corridors. Drinking, industrial, and cooling water intakes are quite vulnerable to oil spills in this environment because of turbulent mixing, and they often shut down when slicks are present.

High currents, eddies, mid-river bars, ice formation, and flooding may complicate response measures in this habitat. Water flow across weirs and dams is of special concern because it is often turbulent and likely to emulsify oil slicks as they pass over these structures. Emulsified oil has a density close to water; it can readily suspend beneath the surface and remain in the water column as it moves through a series of locks and dams. Also, oil can adsorb onto sediment particles, which then settle out in quiet backwaters, potentially contaminating these habitats.

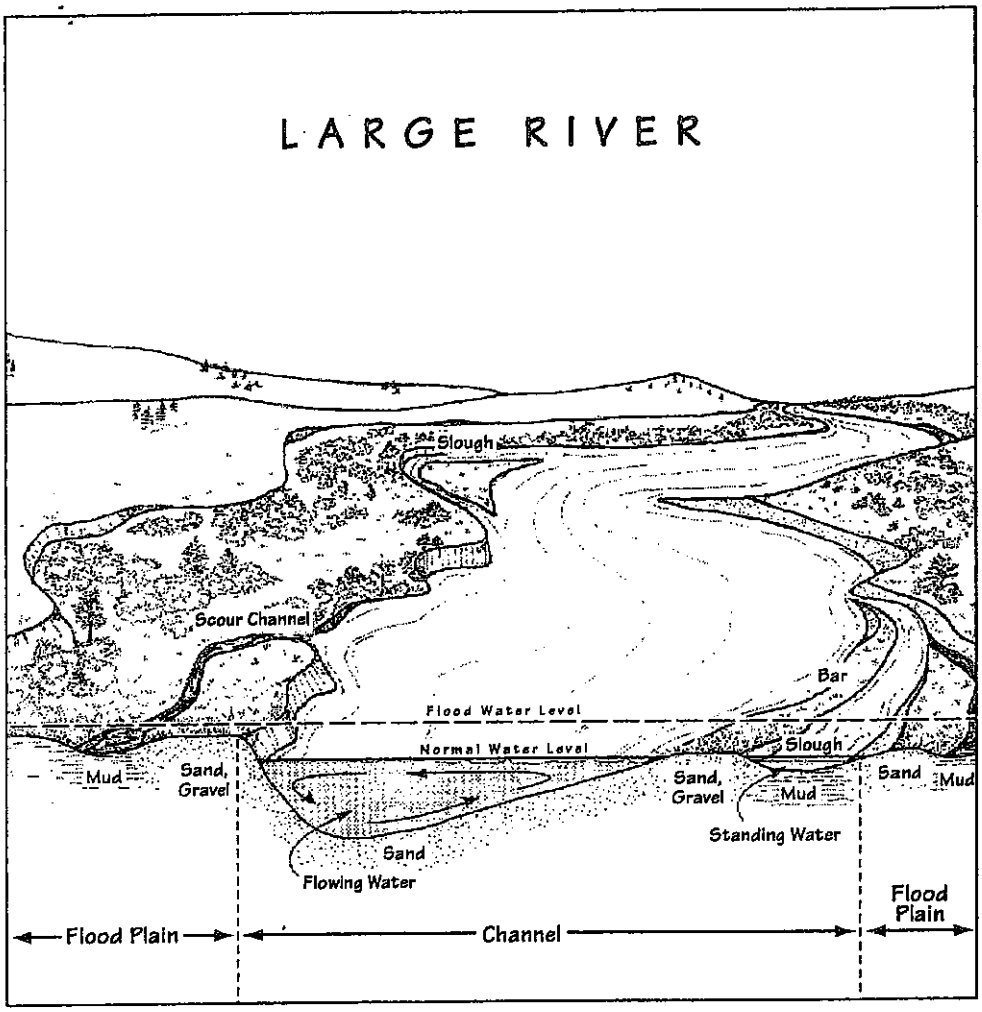

LARGE RIVER
Slough
Scour Channel
Bar
Flood Water Level
Normal Water Level
Slough
Mud
Sand, Gravel
Sand, Gravel
Mud
Sand
Mud
Standing Water
Sand
Flowing Water
Flood Plain
Channel
Flood Plain

Table 15. Relative environmental impact from response methods for LARGE RIVER environments.

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Booming - Deflection/Exclusion	A	A	A	A
Booming - Containment	–	A	A	A
Skimming/Vacuum	–	A	A	A
Natural Recovery	A	A	B	C
Physical Herding	B	B	B	B
Sorbents	–	B	B	B
In-Situ Burning	–	B	B	B
Emulsion Treating Agents	–	B	B	B
Vegetation Removal	–	B	B	B
Debris Removal	–	B	B	B
Visco-Elastic Agents/Solidifiers	–	B	B	–
Manual Oil Removal/Cleaning	–	–	B	B
Mechanical Oil Removal	–	–	B	B
Dispersants	D	C	C	–
Herding Agents	D	D	D	–
Nutrient Enrichment	–	–	I	I
Natural Microbe Seeding	–	–	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: LARGE RIVER ENVIRONMENTS

Least Adverse Habitat Impact

Booming

- Used primarily for diverting slicks towards collection points in low-current areas
- Safety concerns limit the containment of gasoline spills; however, booms can be used to exclude or deflect the spill away from sensitive resources

Skimming/Vacuum

- Not applicable to gasoline spills because of safety concerns

Some Adverse Habitat Impact

Natural Recovery

- For small gasoline and diesel-like spills, evaporation and natural dispersion would rapidly remove surface slicks
- For all other types and sizes of spills, oil recovery and/or protection of sensitive resources should be attempted

Physical Herding

- May be needed to flush oil trapped in debris, eddies, etc. toward recovery devices
- Water spray onto gasoline spills will likely enhance mixing of the product into the water column

Sorbents

- Not applicable to gasoline spills because of safety concerns and inhibition of evaporation
- May not be practical for large rivers because oil will spread and drift rapidly
- Overuse results in excess waste generation

In-Situ Burning

- May not be practical in rivers because oil will spread rapidly
- Containment and maintenance of minimum thickness for burning (1-3 millimeters) is difficult in fast currents

Emulsion-Treating Agents

- Not applicable for gasoline products, which do not emulsify

Vegetation Removal

- May be considered where oil is trapped in floating vegetation along shore and in eddies
- Removal of oiled vegetation may be required to prevent secondary oiling of wildlife or chronic sheening

Debris Removal

- River debris can trap persistent oils, causing chronic sheening and exposure of aquatic resources

Visco-Elastic Agents/Solidifiers

- Not applicable to gasoline spills because of safety concerns during application and inhibition of evaporation
- Recovery of treated oil may be difficult
- May not be practical in rivers because oil will spread and drift rapidly
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

Manual Oil Removal/Cleaning

- Concentrations of heavy oils that have hardened into solid or semi-solid masses can be manually picked up, from boat or shore
- Hand tools can be used to pick up small accumulations of oiled debris
- Operations conducted from boats minimize potential for habitat disruption by trampling onshore

Mechanical Oil Removal

- May be needed to recover large amounts of oil/oily debris trapped in booms or along shore
- Equipment can be operated from barges with less impact; shore-based operations are likely to cause localized disruption of shoreline habitat

Probable Adverse Habitat Impact

Dispersants

- Inhibit the evaporation of gasoline spills
- Not effective on heavy or weathered oils
- For large spills, limited dilution of dispersed oil in rivers likely to raise toxicity concerns

- Impacts on water intakes downstream would have to be evaluated

Most Adverse Habitat Impact

Herding Agents

- High currents make proper application difficult and carry product away
- Not applicable to heavy oils because oil must be fluid

Insufficient Information

Nutrient Enrichment and Natural Microbe Seeding

- Not applicable to gasoline and diesel-like oil spills because they rapidly evaporate
- There is insufficient information on impact and effectiveness for other oil types, particularly for applications in rivers

3.4 SMALL LAKES AND PONDS

Habitat Description

Lakes and ponds are standing bodies of water of variable size and water depth. Waves and currents are generally very low, although the water surface can become choppy. Water levels can fluctuate widely over time, particularly on manmade lakes. Smaller ponds can completely freeze over in winter. The bottom sediments close to shore can be soft and muddy, and the surrounding land can include wet meadows and marshes. Floating vegetation can be common.

The rate of water exchange is highly variable within this group, ranging from days to years. These water bodies can include sections of a river with low flow rates (e.g., behind diversion dams) or that are somewhat isolated from regular flow (e.g., backwater lakes or oxbow lakes). Isolated water bodies, such as kettle lakes, are unique members of this category because they have no surface water outflow, and therefore have very low flushing rates. In shallow water, boat operations would be limited and most response operations would be conducted from shore.

Sensitivity

Small lakes and ponds have medium to high sensitivity to oil spill impact because of low physical removal rates, limited dilution and flushing of oil mixed into the water column, and high biological and human use. They provide valuable habitat for migrating and nesting birds and mammals, and support important fisheries. Small lakes can be the focus of local recreational activities. Associated wetlands have higher sensitivities and are discussed in Section 3.13.

Wind will control the distribution of slicks, holding the oil against a lee shore or spreading it along shore and into catchment areas. Wind shifts can completely change the location of slicks, contaminating previously clean areas. Thus, early protection of sensitive areas is important. The inlet and outlet are key areas for focusing protection efforts. Oil impacts on floating vegetation depend to a large degree on dose, with possible elimination of plants at high doses. Section 5 addresses sinking oils and response under ice conditions.

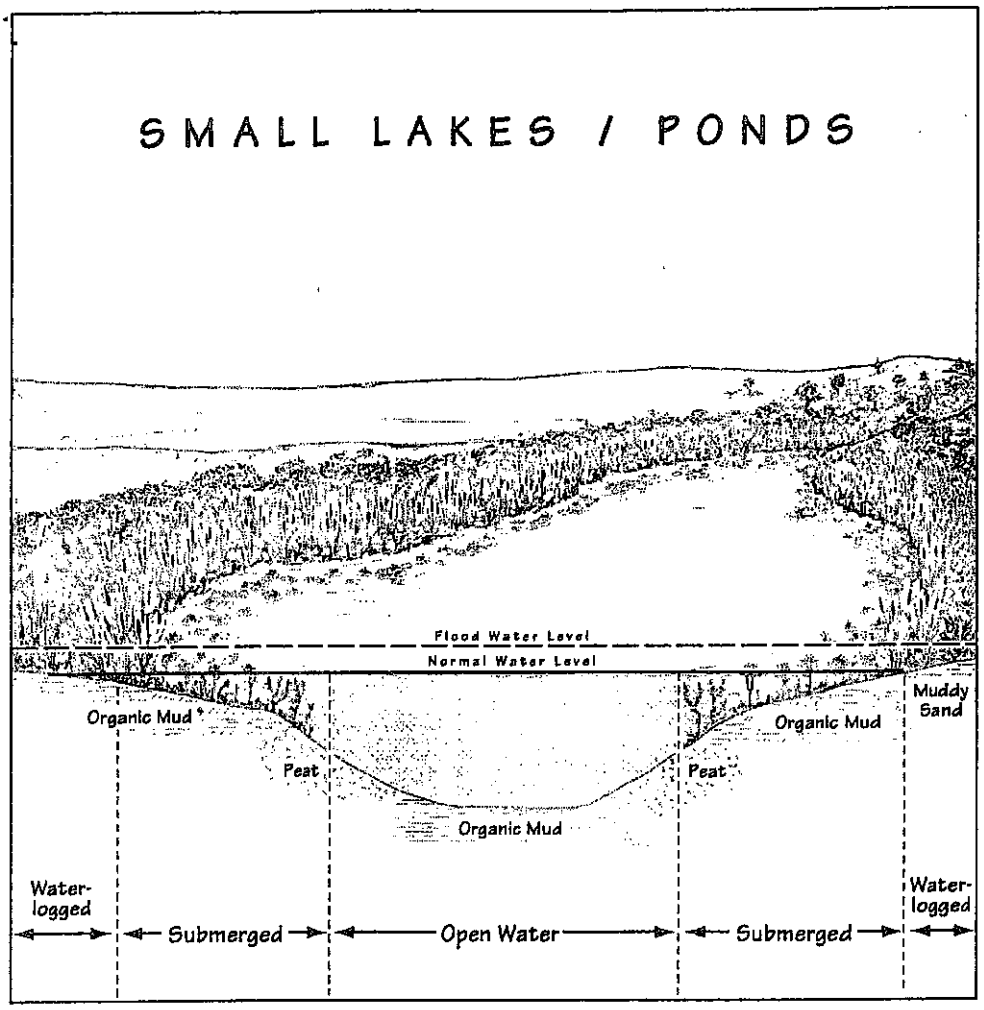

SMALL LAKES / PONDS
Flood Water Level
Normal Water Level
Organic Mud
Peat
Organic Mud
Peat
Organic Mud
Muddy Sand
Water-logged
Submerged
Open Water
Submerged
Water-logged

Table 16. Relative environmental impact from response methods for SMALL LAKE and POND environments.

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Booming - Deflection/Exclusion	A	A	A	A
Booming - Containment	–	A	A	A
Skimming/Vacuum	–	A	A	A
Sorbents	–	A	A	A
Natural Recovery	A	B	C	C
In-Situ Burning	B	B	B	B
Herding Agents	B	B	B	–
Debris Removal	–	B	B	B
Vegetation Removal	–	B	B	B
Physical Herding	C	B	B	B
Visco-Elastic Agents/Solidifiers	–	B	B	–
Manual Oil Removal/Cleaning	–	C	C	B
Mechanical Oil Removal	–	C	C	C
Dispersants	D	D	D	–
Emulsion Treating Agents	–	I	I	I
Nutrient Enrichment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: SMALL LAKE AND POND ENVIRONMENTS

Least Adverse Habitat Impact

Booming

- Use containment booms to keep oil from spreading
- Safety concerns limit the containment of gasoline spills; however, booms can be used to exclude or deflect the spill away from sensitive resources

Skimming/Vacuum

- Not applicable to gasoline spills because of safety concerns
- Land-based operations need site-specific restrictions and monitoring to minimize physical destruction

Sorbents

- Overuse results in excess waste generation
- Inhibit the evaporation of gasoline spills

Some Adverse Habitat Impact

Natural Recovery

- Low impact for light oils but may have significant impact for medium crudes and heavier fuel oils because they persist and affect shoreline habitats

In-Situ Burning

- Less environmental impact in winter when snow and ice provide some protection, plants are dormant, and fewer animals are present
- Safety concerns limit containment of gasoline, but may be safely used with natural containment, such as gasoline trapped in ice

Herding Agents

- Most effective under calm conditions
- Should be coupled with recovery when used to protect sensitive habitats
- Not effective on heavy oils because oil must be fluid

Debris Removal

- Debris may be associated with nests or living areas (e.g., beaver lodges), so impacts on resident animal habitat may need consideration
- Operate from small boats to minimize substrate disruption

Vegetation Removal

- If oil is trapped in floating vegetation, may be only way to recover the oil in the absence of water currents
- May be appropriate to prevent secondary oiling of wildlife

Physical Herding

- Care should be taken not to drive oil into the water column or sediment

Visco-Elastic Agents/Solidifiers

- Visco-elastic agents, by improving overall oil recovery from the water surface, reduce secondary shoreline oiling
- Not applicable to gasoline spills because of safety concerns during application and inhibition of evaporation
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

Probable Adverse Habitat Impact

Manual Oil Removal/Cleaning

- Inherent inefficiency of manual removal of fluid oils would require large crews or repeated entries, resulting in disruption to substrate and wildlife
- Not applicable for gasoline spills because of safety concerns

Mechanical Oil Removal

- May be needed where oil has heavily contaminated bottom sediments
- May require very intrusive recovery techniques

Most Adverse Habitat Impacts

Dispersants

- Inhibit the evaporation of gasoline spills
- Shallow water depths and low dilution rates may result in high aquatic toxicity from oil/dispersant mixtures

Insufficient Information

Emulsion-Treating Agents

- Not applicable to oils that do not form emulsions, such as gasoline
- Insufficient toxicity data to evaluate environmental impact of shallow freshwater environment use

Nutrient Enrichment and Natural Microbe Seeding

- Not applicable to gasoline spills because they rapidly evaporate
- There is insufficient information on impact and effectiveness for other oil types
- There are special concerns about nutrient overloading in small, restricted water bodies

3.5 SMALL RIVERS AND STREAMS

Habitat Description

Small rivers and streams are characterized by shallow water (generally 1-2 meters) and narrow channels. Water flow can be highly variable, both throughout the seasons and with distance downstream. This grouping includes a wide range of waterbodies, from fast-flowing streams with low falls and numerous rapids over bedrock and gravel, to slow-moving bayous bordered by low muddy banks and fringed with vegetation. Sections of the channel may be choked with log jams and debris, and mid-channel bars and islands can divide water flow into multiple channels. Both boat and vehicular access can be very limited; often the only access will be at bridge crossings. Ice may further complicate response measures in this habitat.

Sensitivity

Small rivers and streams have medium to high sensitivity to oil spill impact. Oil spills may have more of an impact on small rivers and streams than on large rivers due to a variety of conditions, such as lower flow conditions, lower dilution rates, lower overall energy, and greater range of natural habitats. Fish spawn in streams and the tributaries of larger rivers; thus, the most sensitive, early life stages can be present. Fringing wetlands and adjacent floodplains are closely connected to small rivers and streams, and they are areas of high biological use and low natural removal rates.

Slicks usually contaminate both banks, and non-viscous oils are readily mixed into the entire water column in shallow streams, potentially exposing both aquatic and benthic organisms to oil. Initial weathering rates may be slower because spreading and evaporation are restricted in narrow channels and heavy vegetation cover. Fish kills are possible for spills ranging from gasoline to medium crude oils. Many different kinds of mammals, birds, reptiles, and amphibians use the stream bank habitats, and there can be localized high mortality rates of these animals. Spills can cause closure of water intakes for drinking water, irrigation, or industrial use along small rivers. A more aggressive response may be appropriate to prevent contamination of downstream habitat, particularly if water intakes, populated areas, or special habitat resources are present.

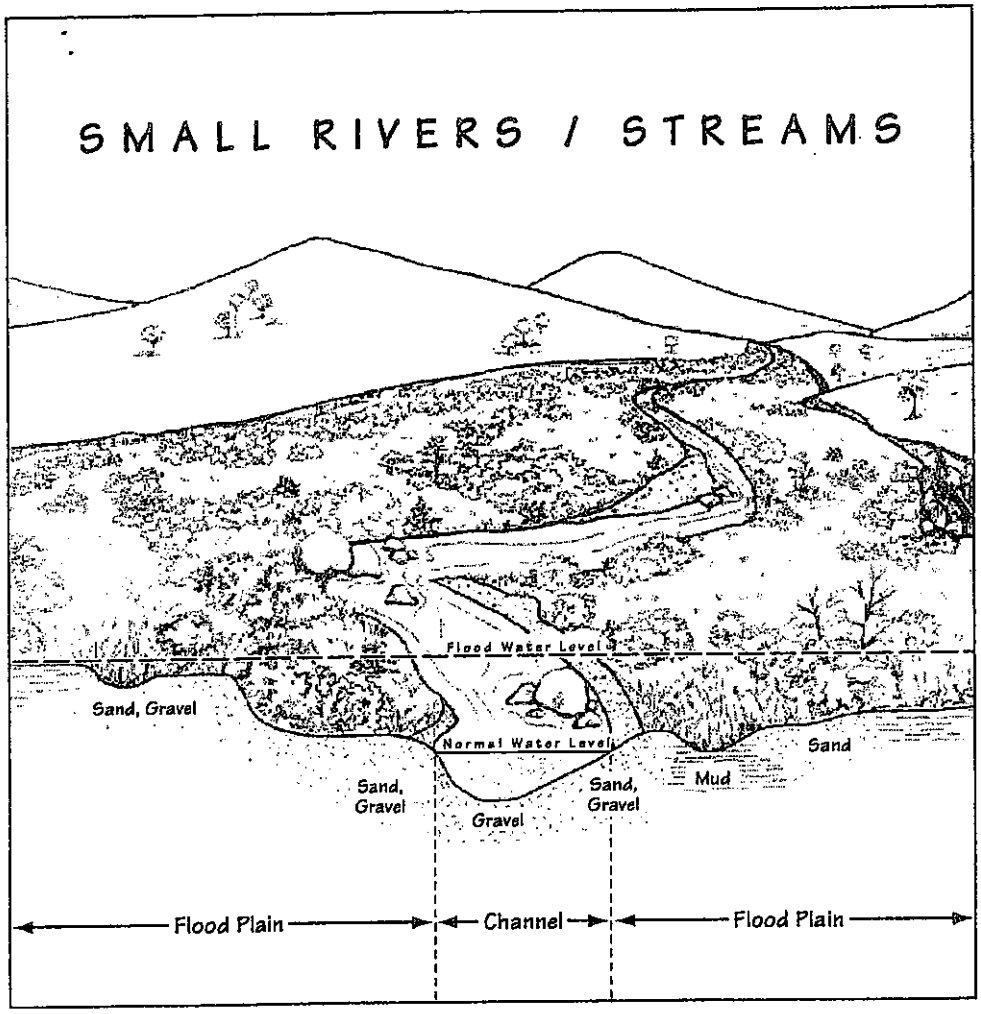

SMALL RIVERS / STREAMS
Flood Water Level
Sand, Gravel
Normal Water Level
Sand
Mud
Sand, Gravel
Gravel
Sand, Gravel
Flood Plain
Channel
Flood Plain

Table 17. Relative environmental impact from response methods for SMALL RIVER and STREAM environments.

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Booming - Deflection/Exclusion	A	A	A	A
Skimming	A	A	A	A
Booming - Containment	–	A	A	A
Vacuum	–	A	A	A
Sorbents	–	A	A	A
Barriers/Berms	B	A	A	A
Physical Herding	B	B	B	B
Natural Recovery	A	B	C	C
Debris Removal	–	B	B	B
Visco-Elastic Agents/Solidifiers	B	B	B	–
Vegetation Removal	–	B	B	B
In-Situ Burning	C	B	B	B
Manual Oil Removal/Cleaning	–	C	C	B
Mechanical Oil Removal	–	C	C	C
Dispersants	D	D	D	–
Herding Agents	D	D	D	–
Emulsion Treating Agents	–	I	I	I
Nutrient Enrichment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: SMALL RIVER AND STREAM ENVIRONMENTS

Least Adverse Habitat Impact

Booming

- Used primarily to divert slicks towards collection points in low-current areas
- Safety concerns limit the containment of gasoline spills; however, booms can exclude or deflect the spill away from sensitive resources
- Expect low effectiveness with fast currents, shallow water, and steep banks

Skimming/Vacuum

- To protect public health and downstream resources where spreading is limited, recovery of large gasoline spills could be attempted with firefighting foam to suppress vapors and respiratory protection for workers

Sorbents

- Deploy in booms to recover sheens in low-current areas and along shore
- Trampling of stream bank and bed habitats during deployment and recovery of sorbents can disrupt streamside vegetation and drive oil into the sediment
- Overuse results in excess waste generation

Barriers/Berms

- Potential for physical disruption and sediment contamination in immediate area of the barrier/berm
- If all or most of the flow is diverted, may need to monitor water requirements to habitats downstream of the barrier to mitigate potential impacts
- Safety concerns limit actions at gasoline spills, although berms built ahead of the slick could be used to exclude oil from sensitive areas, such as side channels

Some Adverse Habitat Impact

Physical Herding

- May be only means to flush oil trapped in log jams, beaver dams, behind rocks, and in vegetation/debris along banks to downstream collection areas
- Spraying of gasoline spills can mix the oil into the water column

Natural Recovery

- For small gasoline and diesel-like oil spills, evaporation and natural dispersion would rapidly remove surface slicks
- For all other types and sizes of spills, recovery of free or pooled oil and/or protection of sensitive resources should be attempted

Debris Removal

- Will release trapped oil and speed natural flushing rates

Visco-Elastic Agents/Solidifiers

- Visco-elastic agents may speed recovery of contained oil when time is critical
- Solidifiers may immobilize even gasoline spills, preventing their transport downstream and further impact
- Ineffective on heavy oils, which are too viscous to allow the product to mix into the oil

Vegetation Removal

- May be needed to remove oil trapped in floating and fringing vegetation
- Remove oiled vegetation to prevent chronic sheening in sensitive areas or secondary oiling of wildlife
- Monitor crews to minimize physical disturbance, which can be severe

In-Situ Burning

- May be difficult to protect stream-side vegetation
- Safety concerns limit containment of gasoline, but may be safely used if natural containment is present
- Less impact in winter when snow/ice provide some protection, plants are dormant, and fewer animals are present
- May not be practical in fast flowing streams where containment and maintenance of minimum slick thickness (1-3 millimeters) may be difficult

Probable Adverse Habitat Impact

Manual Oil Removal/Cleaning

- Viable for heavy oils that have solidified versus fluid oils that have spread
- Stream bank disruption likely from movement of work crews

Mechanical Oil Removal

- Only consider when large amounts of solidified oil have accumulated in the stream channel and need to be removed quickly

Most Adverse Habitat Impact

Dispersants

- Enhanced mixing of oil into the water column with restricted dilution will increase acute toxicity to aquatic organisms

Herding Agents

- Toxicity concerns when early life stages are present
- May not be practical due to fast currents and rough water surface
- Oil must be fluid, so not appropriate to heavy oils

Insufficient Information

Emulsion-Treating Agents

- Insufficient toxicity data to evaluate environmental impact of shallow freshwater environment use
- Not applicable to oils that do not form emulsions, such as gasoline

Nutrient Enrichment and Natural Microbe Seeding

- Not applicable to gasoline spills because they rapidly evaporate
- There is insufficient information on impact and effectiveness, particularly for applications in small rivers and streams

3.6 BEDROCK HABITATS (ESI = 1A, 2, 8A)

Habitat Description

This shoreline type is characterized by an impermeable rocky substrate. The rock surface can be highly irregular, with numerous cracks and crevices. The slope of the shoreline varies from vertical rocky cliffs to shelving bedrock shores where flat or gently dipping rock layers have been cut by waves into wide platforms. Bedrock habitats are exposed to wide ranges in wave energy; headlands in the Great Lakes and other large lakes are the most exposed and bedrock shorelines in sheltered lakes are the least exposed. There can be a thin veneer of sand and gravel sediments on the rock platforms, although storm waves will strip these sediments off exposed shorelines. Boulder-sized debris can accumulate at the base of exposed rocky cliffs.

Sensitivity

Bedrock shoreline habitats have a range of sensitivities to oil spills, depending upon their degree of exposure to natural removal processes. They have few attached organisms and plants, and rocky shore productivity is typically low. However, they may provide shelter to fish and nesting sites for birds which can be present in large numbers in nearshore waters.

In *exposed* settings, oil may be partially held offshore by wave reflection off steep cliffs and platforms. Any oil that is deposited will be rapidly removed from exposed faces, although oil persistence on any specific shoreline segment is related to the incoming wave energy during, and shortly after, a spill. The most resistant oil would occur as a patchy band at or above the high water line, or deposited in any surface sediments.

In *sheltered* settings, oil will readily adhere to the rough rocky surface, forming a distinct band along the water line. Cracks and crevices will be sites of oil pooling and persistence. Oil will also penetrate and persist in any surface sediments. Medium to heavy oils can be very sticky and form thick black bands, while lighter oils are more readily removed by wave action, evaporation, and response efforts.

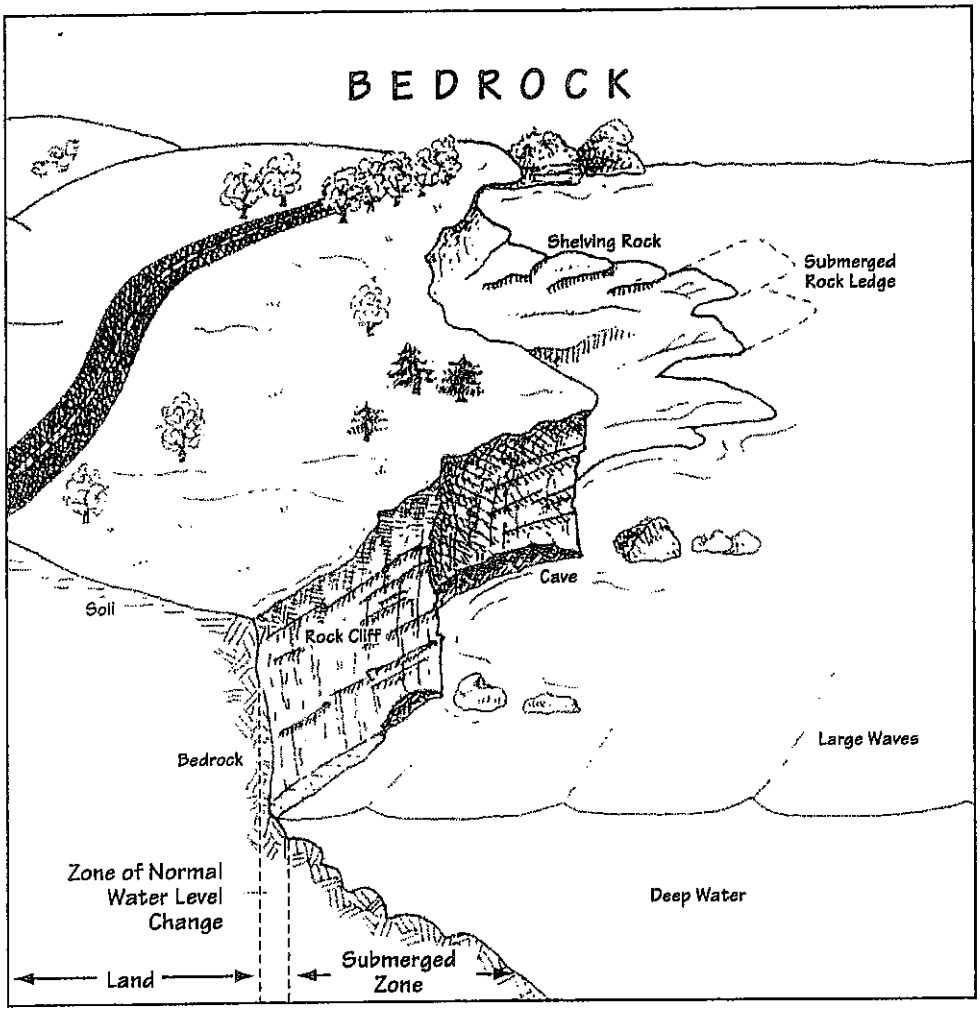

BEDROCK
Shelving Rock
Submerged Rock Ledge
Cave
Soil
Rock Cliff
Bedrock
Large Waves
Zone of Normal Water Level Change
Deep Water
Land
Submerged Zone

Table 18. Relative environmental impact from response methods for BEDROCK habitats (ESI = 1A, 2, 8A).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Natural Recovery	A	A	A	B
Debris Removal	–	A	A	A
Sorbents	B	A	A	B
Flooding	B	A	B	C
Low-Pressure, Cold-Water Flushing	B	A	A	C
High-Pressure, Cold-Water Flushing	B	B	B	B
Manual Oil Removal/Cleaning	–	B	B	A
Vacuum	–	B	B	B
In-Situ Burning	–	B	B	B
Shoreline Cleaning Agents	–	–	B	B
Solidifiers	–	B	B	–
Low-Pressure, Hot-Water Flushing	–	C	B	B
Nutrient Enrichment	–	C	C	D
High-Pressure, Hot-Water Flushing	–	D	C	C
Steam Cleaning	–	D	D	D
Sand Blasting	–	D	D	D
Natural Microbe Seeding	–	I	I	I
Chemical Shoreline Pretreatment	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: BEDROCK HABITATS

Least Adverse Habitat Impact

Natural Recovery

- Sheltered bedrock may need cleanup because of slow natural removal rates
- Cleanup of larger spills may be needed because of the amount of oil present
- Heavy oils may persist on all but the most exposed shores

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on human and sensitive resource use of the site

Sorbents

- Overuse generates excess waste
- Physical removal rates of heavy oils will be slow, so less oil will be mobilized for recovery by sorbents

Some Adverse Habitat Impact

Flooding and Low-Pressure, Cold-Water Flushing

- Most effective on fresh, fluid oils
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

High-Pressure, Cold-Water Flushing

- Primarily applicable to medium-crude oils while still fresh and liquid
- Can be effective in removing oil from crevices and pockets of sediment on bedrock

Manual Oil Removal/Cleaning

- Expect significant residues of diesel and medium oils with only manual removal because of their fluidity and difficulty of manual pickup
- Useful for heavy oils in patches or crevices

Vacuum

- Not applicable to gasoline spills because of safety concerns

In-Situ Burning

- Can effectively remove heavy oil accumulations
- Concerns about air pollution, thermal impact on biota, and physical nature of the residue

Shoreline Cleaning Agents

- May be only technique to remove sticky oils without hot-water, high-pressure washing
- Individual products vary in their toxicity and recoverability of the treated oil

Solidifiers

- Prevent the oil from being washed back into the water and are most appropriate for heavy accumulations of pooled oil on shelving bedrock
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

Low-Pressure, Hot Water Flushing

- Any organisms in the application area would be adversely affected by hot water
- Most effective on heavy crudes where heat would make oil more fluid

Probable Adverse Habitat Impact

Nutrient Enrichment

- Not applicable to gasoline spills because they rapidly evaporate
- Concerns about nutrient overloading in poorly flushed areas or where nutrient toxicity, especially ammonia, might be significant
- Potentially effective for lighter oils that leave thin residues; less effective for thick, weathered oil residues

High-Pressure, Hot-Water Flushing

- Will likely kill any attached organisms; use is appropriate in limited areas only when oil removal is needed for aesthetic reasons

Most Adverse Habitat Impact

Steam Cleaning And Sand Blasting

- Highly intrusive techniques that will kill any organisms present
- Use only for aesthetic reasons in very limited areas

Insufficient Information

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness

Chemical Shoreline Pretreatment

- There is insufficient information on available products, their effectiveness, or impact

3.7 MANMADE STRUCTURES (ESI = 1B, 6B, 8B)

Habitat Description

Manmade structures include vertical shore protection structures such as seawalls, piers, and bulkheads, as well as riprap revetments and groins, breakwaters, and jetties. Vertical structures can be constructed of concrete, wood, and corrugated metal. They usually extend below the water surface, although seawalls can have beaches or riprap in front of them. Riprap revetments are constructed of boulder-sized pieces of rock, rubble, or formed concrete pieces (e.g., tetrapods), placed parallel to the shoreline for shore protection. Riprap groins are oriented perpendicular to shore to trap sediment; jetties are designed to protect and maintain channels; and breakwaters are offshore structures constructed to protect an area from wave attack. Riprap structures have very large void spaces and are permeable, while seawalls and bulkheads have impermeable, solid substrates. These structures are very common along developed shores, particularly in harbors, marinas, and residential areas. The range in degree of exposure to waves and currents varies widely, from very low in dead-end canals, to very high on offshore breakwaters. Boat wakes can generate wave energy in otherwise sheltered areas.

Sensitivity

Manmade structures have a range of sensitivities to oil spills, depending on the degree of exposure to natural removal processes. Biological communities and use are sparse. Often, there are sources of pollutants or habitat degradation nearby, such as urban runoff, chronic small oil spills in marinas, poor water quality, and limited water circulation. More intrusive cleanup techniques are often conducted due to their lower biological use, higher public demand for oil removal for aesthetic reasons, and need to minimize human exposure to oil in populated areas. It is acknowledged that manmade structures can vary in permeability, cohesion, and mobility and, in turn, how they are affected by oiling. In this document, however, manmade structures have been grouped together so that the higher degree of cleanup often required can be adequately addressed.

Vertical structures are generally impermeable to oil penetration, but oil can heavily coat rough surfaces, forming a band at the water line. During storms, oil can splash over the top and contaminate terrestrial habitats. Riprap poses significant cleanup problems because of large void spaces between the riprap and heavy accumulations of debris. Large amounts of oil can become trapped in the riprap, where it is difficult to remove and a potential source of sheening.

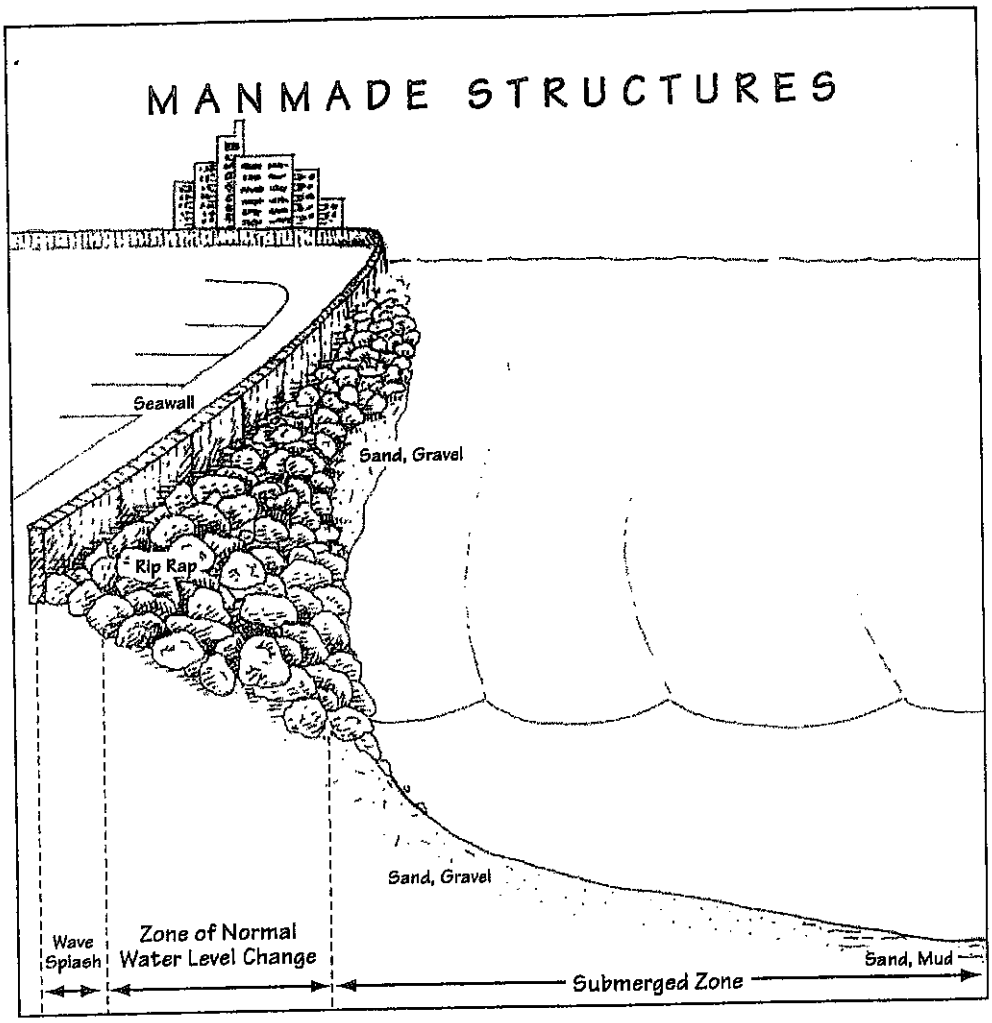

MANMADE STRUCTURES
Seawall
Sand, Gravel
Rip Rap
Sand, Gravel
Wave Splash
Zone of Normal Water Level Change
Submerged Zone
Sand, Mud

Table 19. Relative environmental impact from response methods for MANMADE structures (ESI = 1B, 6B, 8B).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Manual Oil Removal/Cleaning	–	A	A	A
Debris Removal	–	A	A	A
High-Pressure, Cold-Water Flushing	B	A	A	B
Sorbents	B	A	A	B
Vacuum	–	B	A	A
Natural Recovery	A	A	B	B
Flooding	B	A	A	C
Low-Pressure, Cold-Water Flushing	B	A	A	C
Low-Pressure, Hot-Water Flushing	–	B	B	B
High-Pressure, Hot-Water Flushing	–	B	B	B
Shoreline Cleaning Agents	–	B	B	B
Solidifiers	B	B	B	–
In-Situ Burning	–	B	B	B
Nutrient Enrichment	–	C	C	D
Steam Cleaning	–	C	C	C
Sand Blasting	–	C	C	C
Chemical Shoreline Pretreatment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: MANMADE STRUCTURES

Least Adverse Habitat Impact

Manual Oil Removal/Cleaning and Debris Removal

- Effective for removing debris and small, persistent pockets of oil

High-Pressure, Cold-Water Flushing

- Effective for removing sticky oils from solid surfaces and flushing pooled oil from riprap crevices, even for gasoline in populated areas
- May flush oiled sediments (if present) into nearshore bottom habitats
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Sorbents

- Use along riprap structures to recover residual sheening oil after other cleanup methods have been conducted, even for gasoline
- Physical removal rates of heavy oils will be slow, so less oil will be mobilized for recovery by sorbents
- Overuse results in excess waste generation

Vacuum

- Early use of vacuum on pooled oil in crevices can increase the oil recovery rate and minimize oil losses during flushing
- Can only remove thick oil from accessible areas, so high residual oil likely

Natural Recovery

- Most effective for lighter oils and more exposed settings
- Heavier oils may necessitate removing persistent residues

Some Adverse Habitat Impact

Flooding

- Not applicable to seawalls; on riprap, only effective when the oil is fluid
- May be used on riprap in developed areas, even for gasoline spills, where pockets of the spilled product pose human health concerns
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Low-Pressure, Cold-Water Flushing

- Only effective when the oil is fluid
- Directed water spray can help remove trapped oil, even for gasoline
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Low-Pressure, Hot-Water Flushing and High-Pressure, Hot-Water Flushing

- Assumes that there are no biological communities in or immediately downslope from treatment area
- High water temperatures are often needed to liquefy heavy oils
- High water pressures are often needed to remove weathered oils from solid substrates and riprap

Shoreline Cleaning Agents

- Individual products vary in their toxicity and ability to recover the treated oil

Solidifiers

- Appropriate to recover and control chronic sheening, even for gasoline
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

In-Situ Burning

- Thick oil likely to occur as isolated pockets that are difficult to access and burn
- There will be concerns about air pollution and physical nature of the residue
- Public safety issues for burning in developed areas will be of special concern

Probable Adverse Habitat Impact

Nutrient Enrichment

- Not applicable to gasoline spills because they rapidly evaporate
- Concerns about nutrient overloading in poorly flushed areas or where nutrient toxicity, especially ammonia, might be significant
- Potentially effective for lighter oils that leave thin residues; less effective for thick, weathered oil residues

Steam Cleaning and Sand Blasting

- Used when removing persistent oil is required for aesthetic reasons

Insufficient Information

Chemical Shoreline Pretreatment

- There is insufficient information on available products, their effectiveness, and impact

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness, particularly for applications on manmade structures

3.8 SAND HABITATS (ESI = 4)

Habitat Description

Sand habitats have a substrate composed of sediments that are predominantly finer than 2 millimeters but greater than silt or clay-sized material (see Appendix B for grain sizes). The shoreline may consist of well-sorted sands of one principal size, or of poorly sorted mixtures of muddy sand, gravelly sand, or a combination of these two. When the sediments are fine-grained sand, beaches may be wide and flat; where the sediments are coarse-grained sand, they usually are steeper and narrower. Sandy shorelines may be naturally eroding, accreting, or stable, and groins or breakwaters may be placed to trap sand and maintain some beaches. Exposed sand beaches can undergo rapid erosional or depositional changes during storms. In developed areas, sand beaches can be artificially created by man and are commonly used for recreation. Sand bars and banks along rivers are also included in this habitat.

Sensitivity

Sand habitats have low to medium sensitivity to oil spills. They generally do not have sizable biological communities except where the habitat tends to be protected and consists of poorly sorted muddy sediments. Thus, ecological effects are likely to be of limited extent because of the low natural biological productivity. In developed areas, sand beaches are considered sensitive because of their high recreational use.

During small spills, oil will concentrate in a band along the swash line. Maximum penetration into fine-grained sand will be less than 15 centimeters; penetration in coarse sand can reach 25 centimeters or greater. Clean sand can bury oiled layers quickly, creating more difficult cleanup issues. On heavily used recreational beaches, extensive cleanup is usually required to remove as much of the oil as possible. When large amounts of sediment must be removed, it may be necessary to replace these sediments with clean material. Traffic on sand can push oil deeper.

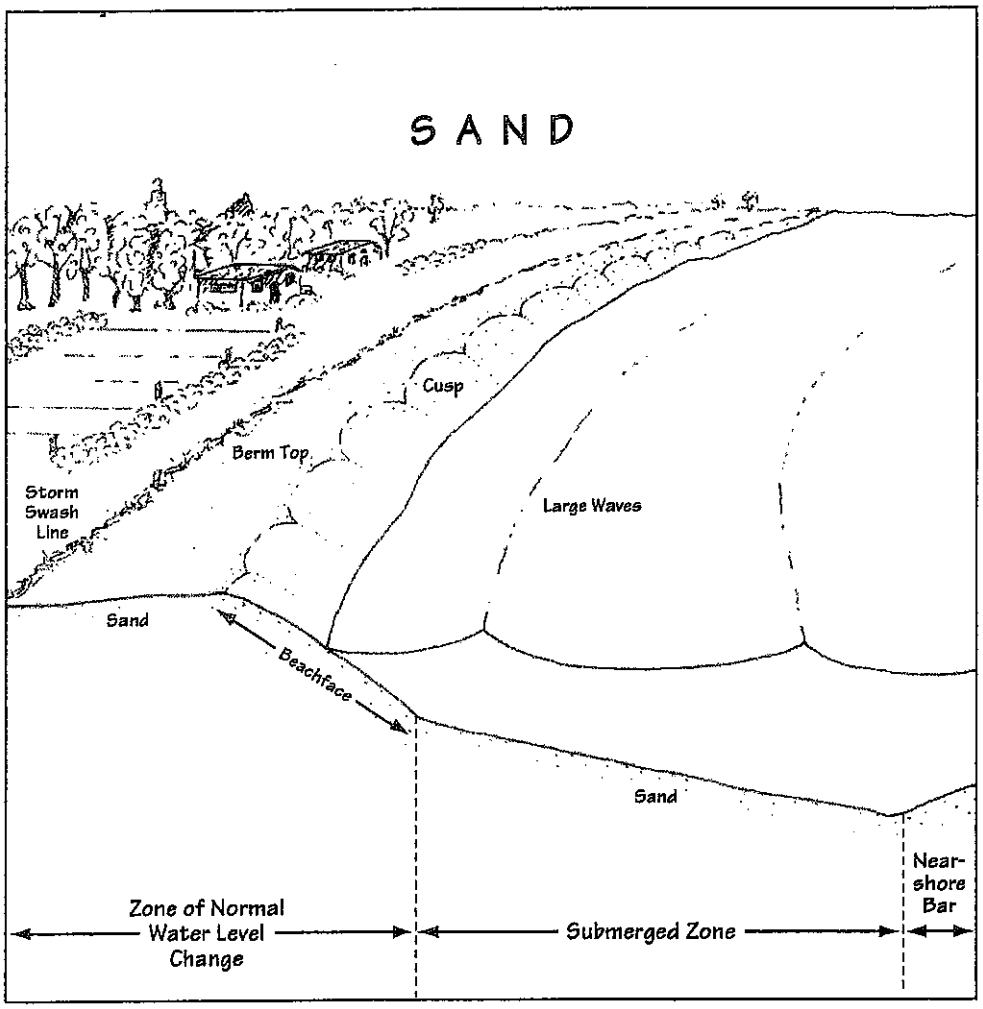

SAND
Cusp
Berm Top
Storm
Swash
Line
Large Waves
Sand
Beachface
Sand
Near-
shore
Bar
Zone of Normal
Water Level
Change
Submerged Zone

Table 20. Relative environmental impact from response methods for SAND habitats (ESI = 4).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Debris Removal	–	A	A	A
Natural Recovery	A	A	B	B
Flooding	B	A	A	B
Sorbents	–	A	A	B
Manual Oil Removal/Cleaning	D	B	A	A
Mechanical Oil Removal	D	B	B	A
Low-Pressure, Cold-Water Flushing	B	B	B	B
Vacuum	–	B	B	B
Sediment Reworking	D	B	B	B
Nutrient Enrichment	–	B	B	C
Shoreline Cleaning Agents	–	–	B	B
Solidifiers	–	B	B	–
In-Situ Burning	–	–	B	B
Low-Pressure, Hot-Water Flushing	D	C	C	B
High-Pressure, Cold-Water Flushing	D	D	D	D
High-Pressure, Hot-Water Flushing	D	D	D	D
Chemical Shoreline Pretreatment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: SAND HABITATS

Least Adverse Habitat Impact

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on use by humans and sensitive resources

Natural Recovery

- Lower impact for small spills, lighter oil types, and remote areas

Flooding

- Only effective when the oil is fluid and on the sand surface, rather than penetrated or buried
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Sorbents

- Not applicable to gasoline spills because they rapidly evaporate
- Physical removal rates of heavy oils will be slow, so less oil will be mobilized for recovery by sorbents
- Overuse results in excess waste generation

Some Adverse Habitat Impact

Manual Oil Removal/Cleaning

- Minimizes sediment removal and problems of erosion and waste disposal
- Effective when oil is mostly on the surface, not buried beneath clean sand
- Gasoline tends to quickly evaporate; therefore habitat disruption, worker safety concerns, and waste generated by manual cleanup are not balanced by benefits in removing oil

Mechanical Oil Removal

- Tends to remove large amounts of clean sand with the oiled sand
- Use on high-use beaches where rapid removal of oil is required and where long stretches of shoreline are heavily oiled

- Gasoline tends to quickly evaporate; therefore habitat disruption, worker safety concerns, and waste generated from mechanical cleanup are not balanced by benefits in removing oil

Low-Pressure, Cold-Water Flushing

- Only effective when the oil is fluid and adheres loosely to the sediments
- Optimize pressure to minimize the amount of sand washed downslope

Vacuum

- Early use of vacuum on pooled, liquid oil can prevent deeper penetration
- Will minimize amount of sorbent waste when used with flushing efforts
- Can vacuum heavy, non-sticky oil from sand substrates completely, but slowly

Sediment Reworking

- Appropriate for lightly oiled and stained sediments, to speed removal rates, and as a final step to polish recreational beaches
- Because gasoline tends to quickly evaporate, habitat disruption, worker safety concerns, and waste generated from sediment reworking are not balanced by benefits in removing oil

Nutrient Enrichment

- Potentially effective for lighter oils that leave thin residues; less effective for thick, weathered oil residues
- May be concern about nutrient overloading in poorly flushed areas
- Not applicable to gasoline spills because they rapidly evaporate

Shoreline Cleaning Agents

- May be only technique to remove viscous oils without removing sediment
- Individual products vary in their toxicity and ability to recover the treated oil

Solidifiers

- Not applicable to gasoline spills because they rapidly evaporate
- Early use may prevent pooled oil from penetrating deeper
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

In-Situ Burning

- Can effectively remove pooled surface oil accumulations
- Concerns about air pollution, physical nature of the residue, and thermal impact on biota
- May have to dig trenches to accumulate oil in pools
- Lighter oils will penetrate the sand, leaving insufficient surface concentrations to burn

Probable Adverse Habitat Impact

Low-Pressure, Hot-Water Flushing

- May be needed to soften and lift sticky oil off the sand surface
- Any organisms present will be adversely affected by hot water

Most Adverse Habitat Impact

High-Pressure, Cold-Water Flushing And High-Pressure, Hot-Water Flushing

- High-pressure water jets will fluidize sand-sized sediments, erode the beach, and wash the oiled sediment into nearshore habitats

Insufficient Information

Chemical Shoreline Pretreatment

- More information needed on available products, their effectiveness, and impact

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness in freshwater habitats

3.9 MIXED SAND AND GRAVEL HABITATS (ESI = 3, 5)

Habitat Description

Mixed sand and gravel habitats are characterized by a substrate that is composed predominantly of a mixture of sand- to cobble-sized sediments (see Appendix B for grain sizes). These habitats may vary from a well-sorted cobble layer overlying finer-grained (sand-sized) sediments to mixtures of sand, pebble, and cobble. Typically, well-sorted beaches are exposed to some wave or current action that separates and transports finer-grained sediments; however, the sediment distribution does not necessarily indicate the energy at a particular shoreline. On depositional beaches multiple berms can be formed at the different water levels generated during storms. In glaciated areas, the gravel component can include very large boulders. Natural replenishment rates are very slow for gravel, compared to sand. Mixed sand and gravel habitats occur as beaches along the Great Lakes and as point bars along rivers and streams.

Sensitivity

Mixed sand and gravel habitats have medium sensitivity to oil spills. Biological communities are very sparse because of sediment mobility, desiccation, and low organic matter. Most invertebrates living in this habitat are deep burrowers, such as some oligochaete worms and insect larvae. Characteristic insects are mayflies, stoneflies, caddisflies, and midges, although mayflies and stoneflies are scarce or absent where silt is present. The nearshore habitat is used by fish for spawning and protects fry and larvae. There are also limited numbers of birds and mammals.

Viscous oils reaching these habitats may not penetrate into the sediments because the pore spaces between sediments are filled with sand. Therefore, deep oil penetration and long-term persistence are lower than on gravel substrates. However, oil can still occur at depths below those of annual reworking, particularly if the oil is deposited high on the beach out of the reach of normal wave activity or is rapidly buried. Erosion can be a concern when large quantities of sediment are physically removed. In more sheltered areas, asphalt pavements can form if heavy surface oil deposits are not removed. Once formed, these pavements are very stable and can persist for years.

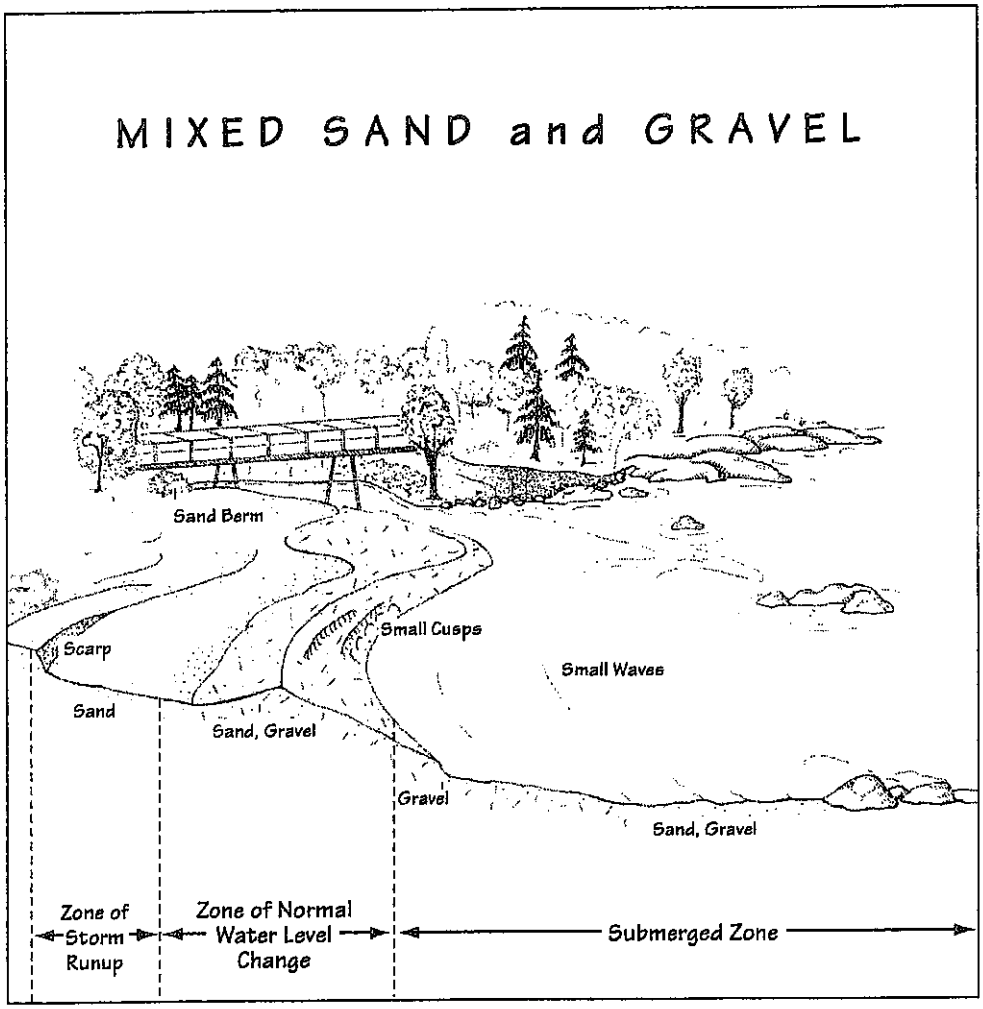

MIXED SAND and GRAVEL
Sand Berm
Scarp
Sand
Sand, Gravel
Small Cusps
Small Waves
Gravel
Sand, Gravel
Zone of Storm Runup
Zone of Normal Water Level Change
Submerged Zone

Table 21. Relative environmental impact from response methods for MIXED SAND and GRAVEL habitats (ESI = 3, 5).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Debris Removal	–	A	A	A
Flooding	A	A	A	C
Natural Recovery	A	A	B	B
Low-Pressure, Cold-Water Flushing	B	A	A	B
Sorbents	–	A	A	B
Vacuum	–	B	B	B
Manual Oil Removal/Cleaning	D	B	A	A
Sediment Reworking	D	B	B	B
Mechanical Oil Removal	D	C	B	B
Shoreline Cleaning Agents	–	–	B	B
Nutrient Enrichment	–	B	B	C
In-Situ Burning	–	–	B	B
Solidifiers	–	–	B	–
High-Pressure, Cold-Water Flushing	C	C	C	C
Low-Pressure, Hot-Water Flushing	D	C	C	B
High-Pressure, Hot-Water Flushing	D	D	D	D
Steam Cleaning	–	D	D	D
Chemical Shoreline Pretreatment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: MIXED SAND AND GRAVEL HABITATS

Least Adverse Habitat Impact

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on amount of use by humans and sensitive resources

Flooding

- Most effective when the oil is fluid and adheres loosely to the sediments
- Use on heavy oils is likely to leave large amounts of residual oil in the environment

Natural Recovery

- Least impact for small spills, lighter oil types, and remote areas

Low-Pressure, Cold-Water Flushing

- Most effective when the oil is fluid and adheres loosely to the sediments
- Excessive pressures can cause erosion
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Sorbents

- Overuse generates excess waste
- Useful for recovering sheens, even for gasoline spills
- Physical removal rates of heavy oils will be slow, so less oil will be mobilized for recovery by sorbents

Some Adverse Habitat Impact

Vacuum

- Early use of vacuum on pooled, liquid oil can prevent deeper penetration

Manual Oil Removal/Cleaning

- Gasoline tends to evaporate quickly; therefore manual cleanup causes habitat disruption, worker safety concerns, and generates waste with no benefits due to removing oil

- Minimizes sediment removal and problems of erosion and waste disposal
- Preferable when oil is mostly on the surface, not deeply penetrated or buried

Sediment Reworking

- Use to break up heavy surface oil or expose persistent subsurface oil deposits, particularly where sediment removal will cause erosion
- Use where there is sufficient exposure to waves to rework the sediments into their original profile and distribution
- Gasoline tends to evaporate quickly; therefore sediment reworking causes habitat disruption, worker safety concerns, and generates waste with no benefits due to removing oil

Mechanical Oil Removal

- Tends to remove large amounts of sediment with the oil
- Applicable for heavier oil types, which are difficult to remove otherwise
- Gasoline tends to evaporate quickly; therefore mechanical cleanup causes habitat disruption, worker safety concerns, and generates waste with no benefits from removing oil

Shoreline Cleaning Agents

- May be only technique to remove viscous oils without removing sediment
- Individual products vary in their toxicity and ability to recover the treated oil

Nutrient Enrichment

- Not applicable to gasoline spills because they rapidly evaporate
- Potentially effective for lighter oils that leave thin residues; less effective for thick, weathered oil residues
- Most applicable as a secondary technique after gross oil removal
- Concerns about nutrient overloading in poorly flushed areas

In-Situ Burning

- Can effectively remove pooled surface oil accumulations
- Concerns about air pollution, physical nature of the residue, and thermal impact on biota
- May have to dig trenches to accumulate oil in pools
- Lighter oils will not remain on the sediment surface

Solidifiers

- Early use may prevent pooled oil from penetrating deeper
- Not applicable to gasoline spills because they rapidly evaporate
- May be useful in recovering sheens when deployed as booms and pillows
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil
- Could use for lighter oils with correct product and situation

Probable Adverse Habitat Impact

High-Pressure, Cold-Water Flushing

- High-pressure water jets will flush oiled sediments into nearshore habitats
- Excessive pressures can cause erosion if large amounts of sand are present

Low-Pressure, Hot-Water Flushing

- Any organisms present will be affected by hot water
- Use on gasoline spills may transport the oil to more sensitive habitats

Most Adverse Habitat Impact

High-Pressure, Hot-Water Flushing

- Will flush oiled sand into nearshore zone and affect any organisms present

Steam Cleaning

- Highly intrusive technique; will kill any organisms present
- Potential for released oil to penetrate deeper into the sediments

Insufficient Information

Chemical Shoreline Pretreatment

- Need more information on available products, their effectiveness, and impact

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness in freshwater habitats

3.10 GRAVEL HABITATS (ESI = 6A)

Habitat Description

Gravel habitats are characterized by a substrate that is composed predominantly of gravel-sized sediments. By definition (see the grain-size chart in Appendix B), gravel includes sediments ranging in size from granules (greater than 2 millimeters) to boulders (greater than 256 millimeters). The sand fraction on the surface is usually less than ten percent, although the sand content can increase to 20 percent with depth. These sediments are highly permeable because there are few sand-sized sediments to fill the pore spaces between the individual gravel particles. Gravel substrates may also have low bearing capacity and, consequently, may not support vehicular traffic. Typically, well-sorted beaches are exposed to some wave or current action that reworks the sediments and removes the finer-grained sediments. However, the sediment distribution does not necessarily indicate the energy setting at a particular shoreline; sheltered beaches can still have a large gravel source. In glaciated areas, the gravel can include very large boulders. On depositional beaches, zones of pure pebbles or cobbles can form into multiple berms at the different water levels generated during storms. Gravel shorelines tend to be steeper than those composed of sand or mud. Natural replenishment rates are very slow for gravel compared to sand. Gravel habitats occur as beaches along the Great Lakes and as bars along rivers and streams.

Sensitivity

Gravel habitats have medium sensitivity to oil spills. Biological communities are very sparse because of sediment mobility, desiccation, and low organic matter. Characteristic insects are mayflies, stoneflies, caddisflies, and midges, all with larvae living among the sediments. Flatworms, leeches, and crustaceans may be found on the gravel undersides. The nearshore habitat is used by fish for spawning and provides protection for fry and larvae.

Gravel habitats are ranked higher in sensitivity than sand and gravel habitats because deep penetration of stranded oil into the permeable substrate is likely. Oil can penetrate to depths below those of annual reworking, resulting in long-term persistence of the oil. The slow replenishment rate makes removing oiled gravel highly undesirable. Also, formation of persistent asphalt pavements is likely where there is high accumulation of persistent oils.

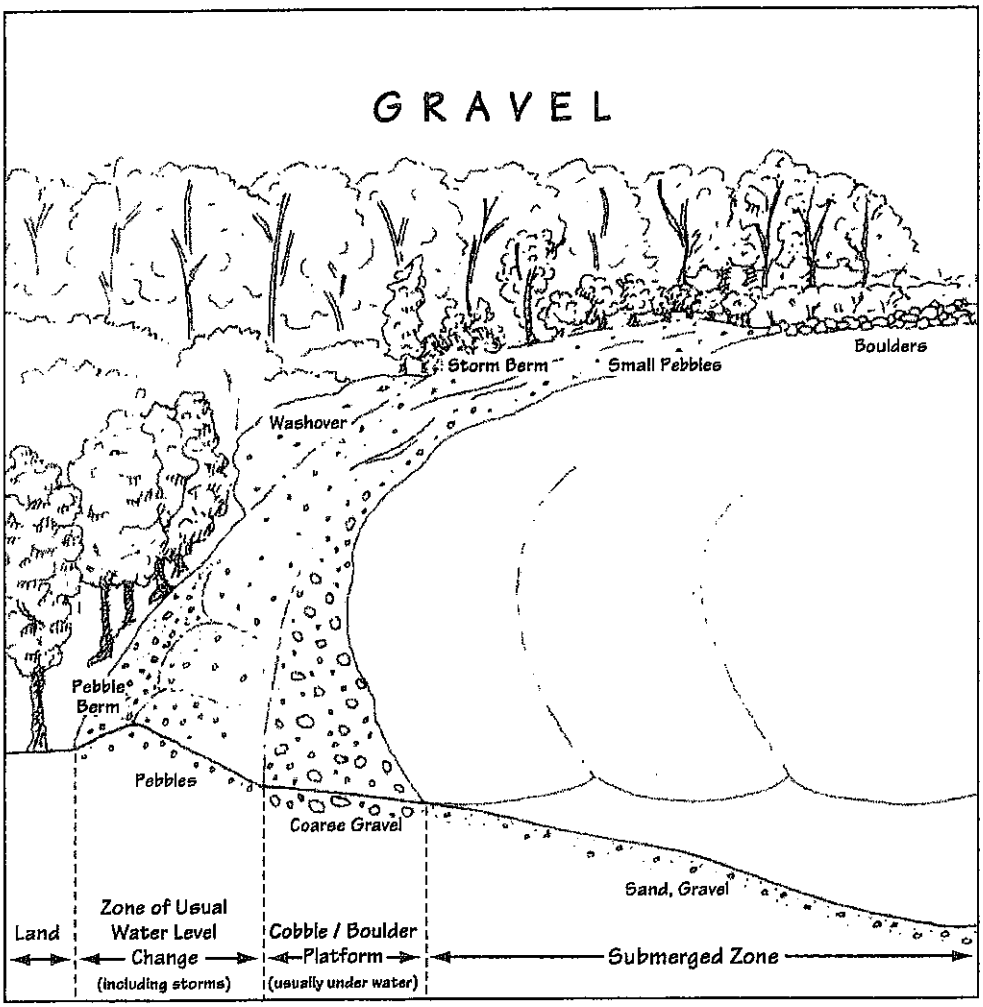

GRAVEL
Boulders
Storm Berm
Small Pebbles
Washover
Pebble Berm
Pebbles
Coarse Gravel
Sand, Gravel
Land
Zone of Usual Water Level Change
(including storms)
Cobble / Boulder Platform
(usually under water)
Submerged Zone

Table 22. Relative environmental impact from response methods for GRAVEL habitats (ESI = 6A).

Response Methods	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Debris Removal	–	A	A	A
Low-Pressure, Cold-Water Flushing	A	A	A	B
Flooding	A	A	A	C
Natural Recovery	A	A	B	B
Sorbents	–	A	A	B
Vacuum	–	B	B	B
High-Pressure, Cold-Water Flushing	C	B	B	B
Nutrient Enrichment	–	B	B	C
Manual Oil Removal/Cleaning	D	B	B	A
Sediment Reworking	D	B	B	B
Shoreline Cleaning Agents	–	–	B	B
In-Situ Burning	–	–	B	B
Solidifiers	–	–	B	–
Low-Pressure, Hot-Water Flushing	D	C	C	B
Mechanical Oil Removal	D	D	C	C
High-Pressure, Hot-Water Flushing	D	D	D	D
Steam Cleaning	–	D	D	D
Chemical Shoreline Pretreatment	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: GRAVEL HABITATS

Least Adverse Habitat Impact

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on use by humans and sensitive resources

Low-Pressure, Cold-Water Flushing

- Only effective when the oil is fluid and loosely adheres to the sediments
- Usually used in conjunction with vacuum and sorbents
- Use on heavy oils is likely to leave large amounts of residual oil in the environment

Flooding

- Only effective when the oil is fluid and adheres loosely to the sediments
- Usually used with various flushing techniques
- Use on heavy oils is likely to leave large amounts of residual oil in the environment

Natural Recovery

- Least impact for small spills, lighter oil types, remote areas, and eroding areas

Sorbents

- Overuse generates excess waste
- Useful for recovering sheens, even for gasoline spills
- Physical removal rates of heavy oils will be slow, so less oil will be mobilized for recovery by sorbents

Some Adverse Habitat Impact

Vacuum

- Early use of vacuum on pooled, liquid oil can prevent deeper penetration

High-Pressure, Cold-Water Flushing

- High-pressure water jet is likely to flush finer sediments into nearshore submerged habitats
- Very viscous oils will require extremely high pressure to mobilize them

Nutrient Enrichment

- Not applicable to gasoline spills because they rapidly evaporate
- Concerns about nutrient overloading in poorly flushed areas or where nutrient toxicity, especially ammonia, might be significant
- Potentially effective for lighter oils that leave thin residues; less effective for thick, weathered oil residues

Manual Oil Removal/Cleaning

- Gasoline tends to quickly evaporate; therefore manual cleanup causes habitat disruption, worker safety concerns, and generates waste with no benefits from removing oil
- Minimizes sediment removal and problems of erosion and waste disposal
- Deep penetration of oil in porous gravel reduces effectiveness

Sediment Reworking

- Used where gravel removal is not feasible because of erosion concerns
- Sufficient exposure to waves is required to rework the sediments into their original profile and distribution
- Gasoline tends to evaporate quickly; therefore sediment reworking causes habitat disruption, worker safety concerns, and generates waste with no benefits from removing oil

Shoreline Cleaning Agents

- May be only technique to remove viscous oils without removing sediment or using hot-water flushing
- Individual products vary in their toxicity and ability to recover the treated oil

In-Situ Burning

- Can effectively remove pooled surface oil accumulations
- May have to dig trenches to accumulate oil in pools
- Lighter oils will not remain on the sediment surface
- Concerns about air pollution, physical nature of the residue, and thermal impact on biota

Solidifiers

- Early use may prevent pooled oil from penetrating deeper

- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil
- May be useful in recovering sheens when deployed as booms and pillows

Probable Adverse Habitat Impact

Low-Pressure, Hot-Water Flushing

- May be needed to flush viscous or deeply penetrated oil
- Any organisms present will be adversely affected by hot water

Mechanical Oil Removal

- Likely to remove large amounts of gravel with the oil
- Foot and vehicular traffic on gravel could mix oil deeper into the sediments

Most Adverse Habitat Impact

High-Pressure, Hot-Water Flushing

- High-pressure water jets are likely to flush oiled sediments into nearshore submerged habitats
- Any organisms present will be adversely affected by hot water and high pressure

Steam Cleaning

- Highly intrusive technique; will kill any organisms present
- Potential for released oil to penetrate deeper into the porous sediments

Insufficient Information

Chemical Shoreline Pretreatment

- Need more information on available products, their effectiveness, and impact

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness in freshwater habitats

3.11 VEGETATED SHORELINE HABITATS (ESI = 9A)

Habitat Description

Vegetated shoreline habitats consist of the non-wetland vegetated banks that are common features of river systems and lakes. Bank slopes may be gentle or steep, and the vegetation consists of grasses, bushes, or trees common to the adjacent terrestrial habitats. The substrate is not water-saturated and can range from clay to gravel. The banks may flood seasonally and are exposed to relatively high-energy removal processes, at least periodically. Along undeveloped shorelines, there can be leafy litter and woody debris trapped among the vegetation. In developed areas, yards and gardens may abut the lake or river.

Sensitivity

Vegetated shoreline habitats are considered to have medium to high sensitivity to oil spills. They are not particularly important habitats for sensitive animals and plants, although many animals use vegetated banks for drinking, washing food, crossing bodies of water, and feeding.

Bank plants oiled during a flood period could be susceptible, especially if the flood rapidly subsides, allowing oil to penetrate into bank sediments and to contact root systems. Small plants, particularly annuals, are likely to be most damaged. Stranded oil could remain in the habitat until another flood reaches the same level and provides a mechanism for natural flushing. On steep banks, the oil is likely to form a band, or multiple bands, at the waterline. On gentle banks, there is a greater potential for oil to accumulate in pools, penetrate the substrate, and coat large areas of vegetation, thus raising the issue of shoreline cleanup. In developed urban and suburban areas, human use and aesthetics would be the main reasons for cleanup.

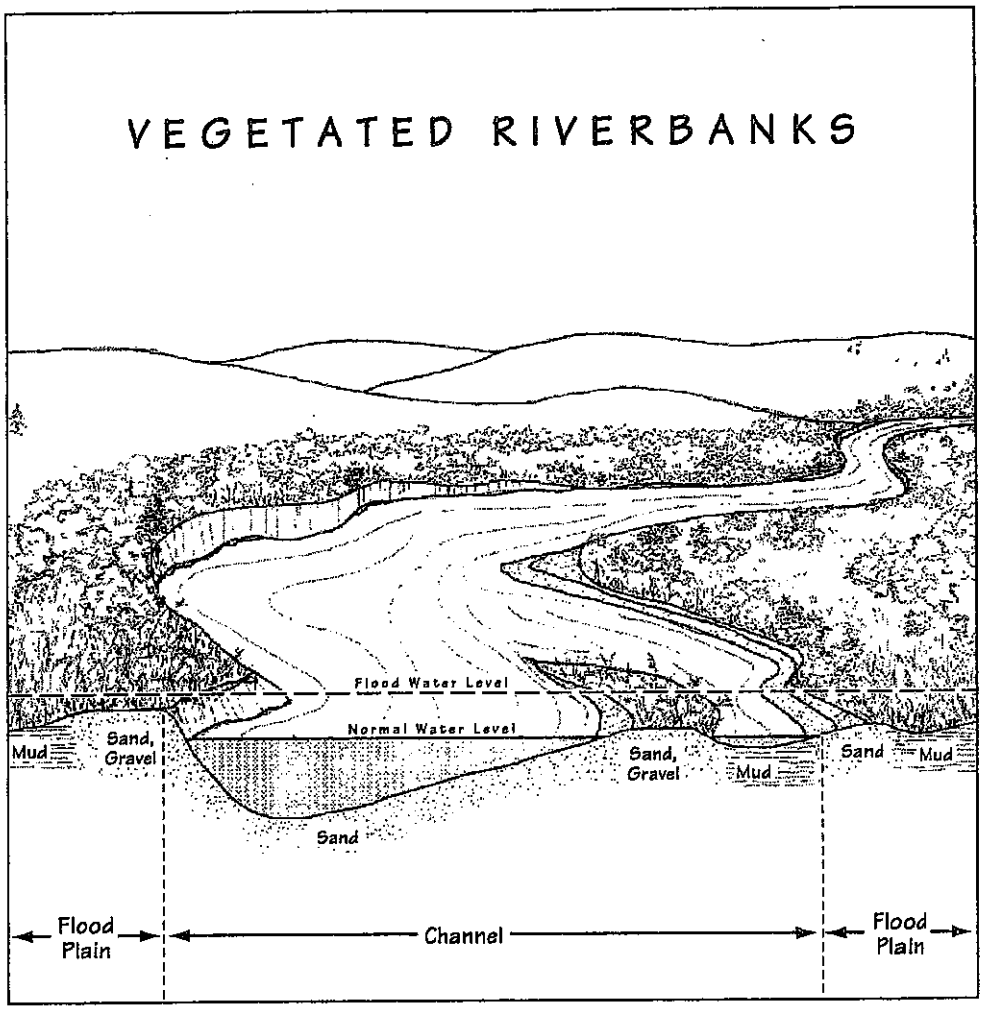

VEGETATED RIVERBANKS
Flood Water Level
Normal Water Level
Mud
Sand, Gravel
Sand
Sand, Gravel
Mud
Sand
Mud
Flood Plain
Channel
Flood Plain

Table 23. Relative environmental impact from response methods for VEGETATED SHORELINE habitats (ESI = 9A).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Natural Recovery	A	A	B	B
Flooding	B	A	A	B
Low-Pressure, Cold-Water Flushing	B	A	A	B
Sorbents	–	A	B	B
Manual Oil Removal/Cleaning	D	B	B	B
Debris Removal	–	B	B	B
Vacuum	–	B	B	B
Vegetation Removal	D	B	B	B
Nutrient Enrichment	–	B	B	B
In-Situ Burning	–	B	B	B
High-Pressure, Cold-Water Flushing	D	C	C	D
Mechanical Oil Removal	D	C	C	C
Low-Pressure, Hot-Water Flushing	D	D	D	D
High-Pressure, Hot-Water Flushing	D	D	D	D
Sediment Reworking	D	D	D	D
Solidifiers	–	D	D	–
Chemical Shoreline Pretreatment	–	I	I	I
Shoreline Cleaners	–	I	I	I
Natural Microbe Seeding	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: VEGETATED SHORELINE HABITATS

Least Adverse Habitat Impact

Natural Recovery

- Low impact for small or moderate-size spills and lighter oils
- More impact for large spills of medium- or high-viscosity oils

Flooding

- Operationally difficult and marginally effective for steep banks
- Appropriate for gentle banks where persistent oil has pooled, assuming that the released oil can be directed towards recovery devices or sorbents
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Low-Pressure, Cold-Water Flushing

- Effective for washing oil stranded on the banks into the water for recovery
- Vegetation cover minimizes the potential for sediment erosion from flushing
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Some Adverse Habitat Impact

Sorbents

- Useful for recovering sheens, even for gasoline spills
- Physical removal rates of medium and heavy oils will be slow, so less oil will be mobilized for recovery by sorbents
- Overuse generates excess waste

Manual Oil Removal/Cleaning

- Some mixing of oil into the substrate and trampling of vegetation is unavoidable with foot traffic in oiled areas
- Gasoline tends to quickly evaporate; therefore habitat disruption, worker safety concerns, and waste generated by manual cleanup are not balanced by benefits in removing oil

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on use by humans and sensitive resources
- Minimal concerns where substrate is firm or work is conducted from boats

Vacuum

- Potential damage where substrate will not support vehicular traffic
- Most effective where access is good and substrate can support vehicles
- Only useful when oil is pooled

Vegetation Removal

- Usually not necessary to reduce oil impact on vegetation
- May be required in areas used by sensitive animals

Nutrient Enrichment

- Applicable where nutrients are a limiting factor for oil degradation
- More effective after gross oil removal is completed
- Not applicable to gasoline spills because they rapidly evaporate

In-Situ Burning

- May be the least physically damaging means of oil removal from the banks
- Least impact for grassy areas versus banks covered with trees and shrubs

Probable Adverse Habitat Impact

High-Pressure, Cold-Water Flushing

- High-pressure water spray will disturb plants and erode sediments
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Mechanical Oil Removal

- Excessive physical disruption likely from use of equipment

Most Adverse Habitat Impact

Low-Pressure, Hot-Water Flushing

- Hot water could kill plants and potentially erode and degrade habitat

High-Pressure, Hot-Water Flushing

- Combination of high pressure and hot water poses high risk of sediment and vegetation loss

Sediment Reworking

- Will result in extensive habitat disruption

Solidifiers

- Not applicable to gasoline spills because they rapidly evaporate
- Application of loose particulates may impede removal of oil mixed with, and adhered to, vegetation, litter, and debris
- May be useful in recovering sheens when deployed as booms and pillows
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil or penetrate netting or fabric encasing the loose particulates

Insufficient Information

Chemical Shoreline Pretreatment

- There is insufficient information on impact and effectiveness in freshwater vegetation

Shoreline Cleaning Agents

- More information needed on available products, their effectiveness, and impact of use on vegetated bank habitats
- Individual products vary in their toxicity and ability to recover the treated oil

Natural Microbe Seeding

- There is insufficient information on impact and effectiveness in freshwater vegetated shorelines

3.12 MUD HABITATS (ESI = 9B)

Habitat Description

Mud habitats are characterized by a substrate composed predominantly of silt and clay sediments, although they may be mixed with varying amounts of sand or gravel (see Appendix B for grain-size chart). The sediments are mostly water saturated and have low bearing strength. In general, mud shorelines have a low gradient, although some steep banks also may consist of mud. The mud habitats generally are low energy and sheltered from wave action and high currents. Adjacent nearshore areas are usually shallow with muddy sediments. These fine-grained habitats often are associated with wetlands; Section 3.13 discusses habitats where aquatic vegetation dominates. Bare or sparsely vegetated mud substrates are rare along Great Lake shorelines. However, they commonly occur along river floodplains and lake bottoms, where they can be exposed during seasonal low water levels.

Sensitivity

Mud habitats are highly sensitive to oil spills and subsequent response activities. Shoreline sediments are likely to be rich in organic matter and support an abundance of infauna. Muddy habitats are important feeding grounds for birds and rearing areas for fish.

Oil will not penetrate muddy sediments because of their low permeability and high water content, except through decaying root and stem holes or animal burrows. There can be high concentrations and pools of oil on the surface. Natural removal rates can be very slow, chronically exposing sensitive resources to the oil. The low bearing capacity of these shorelines means that response actions can easily leave long-lasting imprints, cause significant erosion, and mix the oil deeper into the sediments. When subsurface sediments are contaminated, oil will weather slowly and may persist for years. Response methods may be hampered by limited access, wide areas of shallow water, fringing vegetation, and soft substrate.

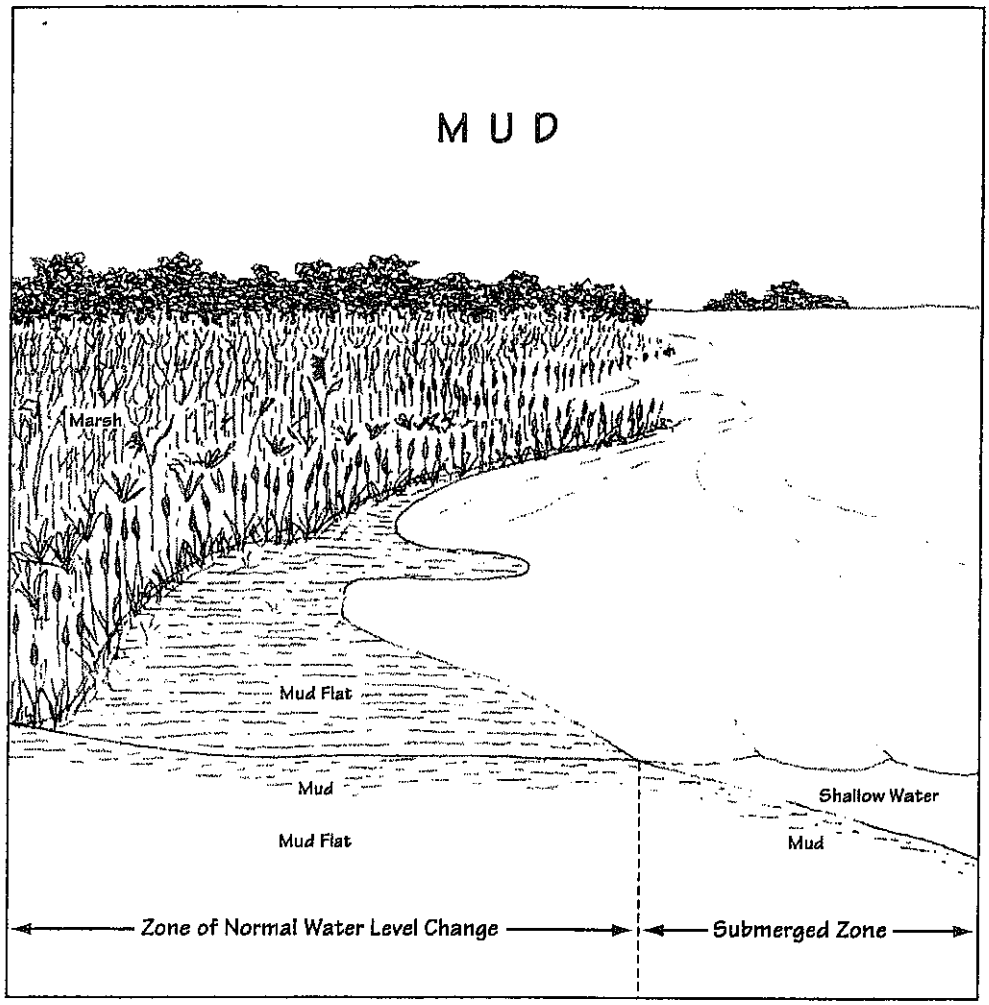

MUD
Marsh
Mud Flat
Mud
Mud Flat
Shallow Water
Mud
Zone of Normal Water Level Change
Submerged Zone

Table 24. Relative environmental impact from response methods for MUD habitats (ESI = 9B).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Natural Recovery	A	A	A	B
Flooding	B	A	A	A
Sorbents	B	A	A	B
Debris Removal	–	B	B	B
Vacuum	–	C	B	B
In-Situ Burning	C	C	C	C
Low-Pressure, Cold-Water Flushing	D	C	C	C
Manual Oil Removal/Cleaning	D	D	C	C
Low-Pressure, Hot-Water Flushing	D	D	C	C
Solidifiers	D	D	C	–
Mechanical Oil Removal	D	D	D	D
High-Pressure, Cold-Water Flushing	D	D	D	D
High-Pressure, Hot-Water Flushing	D	D	D	D
Sediment Reworking	D	D	D	D
Shoreline Cleaning Agents	–	D	D	D
Natural Microbe Seeding	–	I	I	I
Nutrient Enrichment	–	I	I	I
Chemical Shoreline Pretreatment	I	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: MUD HABITATS

Least Adverse Habitat Impact

Natural Recovery

- Least impact for small spills and lighter oils, to prevent disruptions associated with cleanup efforts
- For large spills or heavy oils, expect long-term persistence in low-energy settings

Flooding

- Effective only for fresh, fluid oils
- Local topography may limit the ability to control where the water and released oil flow and effectiveness of recovery
- Use on gasoline spills may transport the oil to more sensitive habitats

Sorbents

- Useful as long as the oil is mobilized and recovered by the sorbent
- Overuse generates excess waste
- Careful placement and recovery is necessary to minimize substrate disruption

Some Adverse Habitat Impact

Debris Removal

- Degree of oiling that warrants debris removal and disposal depends on use by sensitive resources
- Extensive disruption of soft substrate likely

Vacuum

- Not applicable to gasoline spills because of safety concerns
- Use to remove oil pooled on the surface
- Avoid digging trenches to collect oil because they can introduce oil deeper into the sediment
- Disruption of soft substrates can be limited by placing boards on the surface and controlling access routes

Probable Adverse Habitat Impact

In-Situ Burning

- Heat may impact biological productivity of habitat, especially where there is no standing water to act as a heat sink on top of the mud

Low-Pressure, Cold-Water Flushing

- Mud is readily suspended if substrate is not firm
- Not effective for higher-viscosity oils that will not move with low pressure
- Local topography may limit the ability to control where the water and released oil flow and effectiveness of recovery
- Use on gasoline spills may transport the oil to more sensitive habitats

Manual Oil Removal/Cleaning

- Use where persistent oil occurs in moderate to heavy amounts, or where sensitive resources must be protected
- Response crews may trample soft substrates, mix oil deeper into the sediments, and contaminate clean areas

Low-Pressure, Hot-Water Flushing

- Physical and thermal impacts to habitat likely

Most Adverse Habitat Impact

Solidifiers

- High likelihood of disruption and mixing of oil deeper into the substrate during application and retrieval
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

Mechanical Oil Removal

- Soft substrate will not support vehicular traffic
- Will probably cause extensive physical habitat disruption

High-Pressure, Cold-Water Flushing and High-Pressure, Hot-Water Flushing

- High-pressure water will cause extensive sediment suspension and erosion
- Potential for burial of oiled sediments and transport of oil to adjacent areas

Sediment Reworking

- Will extensively disrupt physical habitat
- Increases oil penetration, burial, and persistence

Shoreline Cleaning Agents

- Current products are designed for use with high-pressure flushing; since used with flushing, water pressure needs to be considered
- Individual products vary in their toxicity and ability to recover the treated oil

Insufficient Information

Natural Microbe Seeding and Nutrient Enrichment

- Not applicable to gasoline spills because they rapidly evaporate
- There is insufficient information on impact and effectiveness in mud habitats

Chemical Shoreline Pretreatment

- There is insufficient information about direct toxicity of the products, disturbances resulting from application and retrieval, effectiveness, and net benefit

3.13 WETLAND HABITATS (ESI = 10A, 10B)

Habitat Description

Wetlands are characterized by water, unique soils that differ from adjacent upland areas, and vegetation adapted to wet conditions. Wetlands include a range of habitats such as marshes, bogs, bottomland hardwood forests, fens, playas, prairie potholes, and swamps. Substrate, vegetation, hydrology, seasonality, and biological use of inland wetlands are highly variable, making characterization difficult. The surfaces of wetlands usually have a low gradient and vegetated areas are typically at or under the water level. There can be distinct channels or drainages with flowing water, except at the exposed outer fringe; however, natural physical processes are minimal. Water levels may vary seasonally, and the wetland may be simply a zone of water-saturated soils during the dry season. Where mud habitats dominate the wetland, refer to Section 3.12 for a discussion of applicable response methods.

Sensitivity

Wetlands are highly sensitive to oil spills. The biological diversity in these habitats is significant and they provide critical habitat for many types of animals and plants. Oil spills affect both the habitat (vegetation and sediments) and the organisms that directly and indirectly rely on the habitat. Surprisingly little is known about oil impact on freshwater plants, although there are likely differences between robust perennials with substantial underground systems and cycles of winter die-back, and annuals that lack underground nutrient reserves. Detritus-based food webs are fundamentally important in wetlands; oil could possibly affect these by slowing decomposition rates of plant material.

Wetlands support populations of fish, amphibians, reptiles, birds, and mammals, with many species reliant upon wetlands for their reproduction and early life stages when they are most sensitive to oil. Many endangered animals and plants occur only in wetlands, and spills in such areas would be of particular conservation concern. Migratory waterbirds depend heavily on wetlands as summer breeding locations, migration stopovers, and winter habitats. The threat of direct oiling of animals using the wetland often drives efforts to remove the oil. If oil and/or cleanup efforts causes a loss of the more sensitive plants or modifies the ecosystem structure, then feeding and breeding of dependent wildlife may be affected.

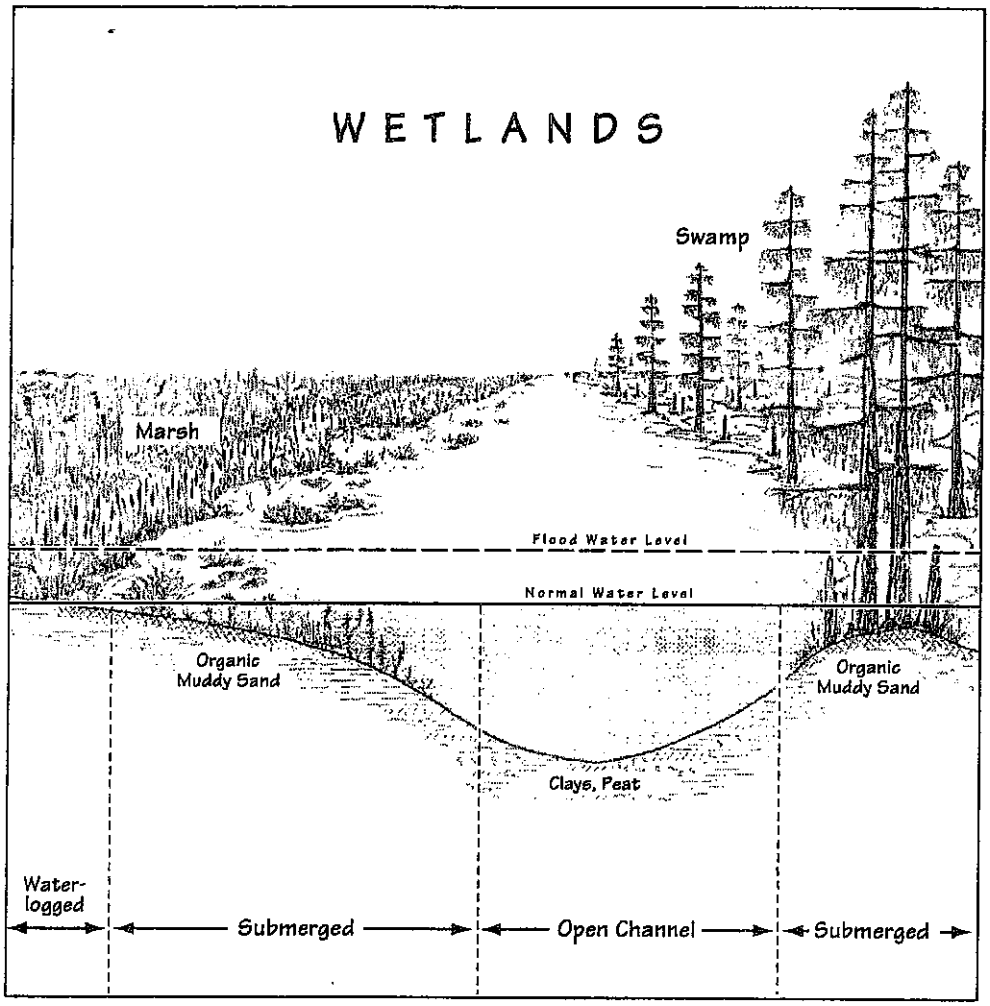

WETLANDS
Swamp
Marsh
Flood Water Level
Normal Water Level
Organic
Muddy Sand
Organic
Muddy Sand
Clays, Peat
Water-
logged
Submerged
Open Channel
Submerged

Table 25. Relative environmental impact from response methods for WETLAND habitats (ESI = 10A, 10B).

Response Method	*Gasoline Products*	*Diesel-Like Oils*	*Medium Oils*	*Heavy Oils*
Natural Recovery	A	A	A	B
Sorbents	C	A	A	A
Flooding	B	A	A	B
Low-Pressure, Cold-Water Flushing	B	A	A	B
In-Situ Burning	B	B	B	B
Vacuum	–	B	B	B
Debris Removal	–	B	B	B
Vegetation Removal	D	C	C	C
Manual Oil Removal/Cleaning	D	D	C	C
High-Pressure, Cold-Water Flushing	D	D	D	D
Low-Pressure, Hot-Water Flushing	D	D	D	D
High-Pressure, Hot-Water Flushing	D	D	D	D
Mechanical Oil Removal	D	D	D	D
Sediment Reworking	D	D	D	D
Solidifiers	D	D	D	–
Shoreline Cleaning Agents	–	I	I	I
Nutrient Enrichment	–	I	I	I
Natural Microbe Seeding	–	I	I	I
Chemical Shoreline Pretreatment	–	I	I	I

The following categories are used to compare the relative environmental impact of each response method for the specific environment or habitat for each oil type, using the following definitions:

A = May cause the least adverse habitat impact.

B = May cause some adverse habitat impact.

C = May cause significant adverse habitat impact.

D = May cause the most adverse habitat impact.

I = Insufficient Information - impact or effectiveness of the method could not be evaluated at this time.

"-" = Not applicable for this oil type.

RESPONSE METHODS: WETLAND HABITATS

Least Adverse Habitat Impact

Natural Recovery

- Least impact for small to moderate spills and lighter oils; avoids damage often associated with cleanup activities
- Some cleanup may be warranted where large numbers of animals are likely to become oiled during wetland use

Sorbents

- Care is necessary during placement and recovery to minimize disturbance of substrate and vegetation
- Overuse generates excess waste

Flooding

- Erosion of substrate and vegetation may be a problem
- Can be used selectively to remove localized heavy oiling
- Can be difficult to direct water and oil flow towards recovery devices
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Low-Pressure, Cold-Water Flushing

- If water pressures are too high, the substrate and vegetation may be disturbed
- Use on heavy oils is likely to leave large amounts of residual oil in the environment
- Use on gasoline spills may transport the oil to more sensitive habitats

Some Adverse Habitat Impact

In-Situ Burning

- May be one of the least physically damaging means of heavy oil removal
- Presence of a water layer on marsh surface can protect roots
- Time of year (vegetation growth stage) is important consideration
- May be appropriate for gasoline spills trapped in ice

Vacuum

- Can be effective in removal of pooled oil from the marsh surface

- Trampling of vegetation and substrate can be limited by placing boards on the surface and limiting traffic

Debris Removal

- The removal of heavily oiled and mobile debris may reduce the tracking of oil off-site and contamination of wildlife

Probable Adverse Habitat Impact

Vegetation Removal

- Used to prevent oiling of sensitive animals using the wetland
- Most appropriate for oils that form a thick, sticky coating on the vegetation, such as medium and heavy oils
- May delay recovery of the vegetation due to both oil impact and physical destruction by cleanup crews
- Trampling of vegetation may be reduced by controlling access routes, using boards placed on surface, or conducting operations from boats

Manual Oil Removal/Cleaning

- Used where persistent oil occurs in heavy amounts and where sensitive resources using the wetlands are likely to be oiled
- Response crews may trample roots and mix oil deeper into the sediments

Most Adverse Habitat Impact

High-Pressure, Cold-Water Flushing

- High-pressure spray will disrupt sediments, root systems, and animals

Low-Pressure, Hot-Water Flushing and High-Pressure, Hot-Water Flushing

- Hot water will likely kill the vegetation

Mechanical Oil Removal

- Using vehicles in soft substrate will probably cause extensive physical disruption
- Can completely alter the marsh substrate, hydrology, and vegetation patterns for many years
- Use in heavily oiled wetlands when all other techniques have failed and there is an overriding reason for oil removal

Sediment Reworking

- No benefit from mixing oil deeper into fine-grained and organic soils

Solidifiers

- Not applicable to gasoline spills because they rapidly evaporate
- Use likely to increase adherence to vegetation and slow weathering/removal rates of residual oil
- Not effective on heavy oils, which are too viscous to allow the product to mix into the oil

Insufficient Information

Shoreline Cleaning Agents

- More information needed on available products, their effectiveness, and impact of use on vegetated bank habitats
- Individual products vary in their toxicity and recoverability of the treated oil

Nutrient Enrichment and Natural Microbe Seeding

- Not applicable to gasoline spills because they rapidly evaporate
- Concerns include eutrophication and acute toxicity, particularly from ammonia, because of shallow waters and low mixing rates
- There is insufficient information on impact and effectiveness in wetlands

Chemical Shoreline Pretreatment

- There is insufficient information about product toxicity, disturbances resulting from application and retrieval, effectiveness, and net benefit

APPENDIX H
Material Safety Data Sheets

FLINT HILLS resources

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	CRUDE OIL - CANADA
MSDS number	7958
Version #	03
Revision date	03-08-2011
CAS #	8002-05-9
Product use	REFINERY FEED & ASPHALT
Synonym(s)	HEAVY CRUDE * PETROLEUM CRUDE
Supplier	Flint Hills Resources Canada, LP 1510, 111-5th Avenue SW Calgary, AB T2P 3Y6 CANADA

Telephone numbers - 24 hour emergency assistance

Flint Hills Resources Canada LP	403-716-7600
Chemtrec (United States)	800-424-9300
Canutec (Canada)	613-996-6666

Telephone numbers - general assistance

8-5 (M-F, MST)	403-716-7600
8-5 (M-F, CST) MSDS Assistance	316-828-7988
Email:	msdsrequest@fhr.com

2. Hazards Identification

Emergency overview

DANGER!

BLACK, BROWN OR GREENISH LIQUID WITH AROMATIC OR PETROLEUM ODOR

HEALTH HAZARDS
CONTAINS HYDROGEN SULFIDE GAS. MAY BE FATAL IF INHALED
GAS MAY EVOLVE FROM THIS MATERIAL AND ACCUMULATE IN CONFINED SPACES
MAY BE HARMFUL OR FATAL IF SWALLOWED
MAY CAUSE LUNG DAMAGE
BREATHING HIGH CONCENTRATIONS CAN CAUSE IRREGULAR HEARTBEATS WHICH MAY BE FATAL
DANGER-CONTAINS BENZENE-CANCER HAZARD
CAN CAUSE LEUKEMIA AND OTHER BLOOD DISORDERS
MAY BE IRRITATING TO THE SKIN AND EYES
OVEREXPOSURE MAY CAUSE CNS DEPRESSION
SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

FLAMMABILITY HAZARDS
EXTREMELY FLAMMABLE LIQUID AND VAPOR
VAPOR MAY CAUSE FLASH FIRE OR EXPLOSION

REACTIVITY HAZARDS
STABLE

Potential health effects

Routes of exposure

Inhalation, ingestion, skin and eye contact.

Eyes

Contact may cause pain and severe reddening and inflammation of the conjunctiva. Effects may become more serious with repeated or prolonged contact.

Vapors may cause eye irritation and sensitivity to light.

Skin

Contact may cause reddening, itching and inflammation. Skin contact may cause harmful effects in other parts of the body.

Inhalation

HIGHLY TOXIC

May be harmful or fatal if inhaled.

Contains hydrogen sulfide gas.

Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.

Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs.

May cause central nervous system depression or effects.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Ingestion

Swallowing this material may be harmful. May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation" (see inhalation section).

3. Composition / Information on Ingredients

Components	CAS #	Concentration*
CRUDE OIL	8002-05-9	100 %
N-HEXANE	110-54-3	5 - 8 %
TOLUENE	108-88-3	1 - 5 %
XYLENE	1330-20-7	1 - 5 %
BENZENE	71-43-2	1 - 5 %
HYDROGEN SULFIDE	7783-06-4	1 - 4 %
ETHYLBENZENE	100-41-4	1 - 3 %
POLYCYCLIC AROMATIC COMPOUNDS	Not Applicable	< 0.1 %

*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

Composition comments

This Material Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

4. First Aid Measures

First aid procedures

Eye contact

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

Skin contact	Immediately wash skin with plenty of soap and water after removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.
Inhalation	Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.
Ingestion	Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.
Notes to physician	INHALATION: Inhalation exposure can produce toxic effects. Treat intoxications as hydrogen sulfide exposures. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided. INGESTION: If ingested this material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. Fire Fighting Measures

Flammable properties	Extremely flammable. Vapors form flammable or explosive mixtures with air at room temperature. Vapor or gas may spread to distant ignition sources and flash back. Explosion hazard if exposed to extreme heat.
Extinguishing media	
Suitable extinguishing media	Use water spray, dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire.
Protection of firefighters	
Specific hazards arising from the chemical	Combustion may produce COx, NOx, SOx, reactive hydrocarbons, irritating vapors, and other decomposition products in the case of incomplete combustion.
Fire fighting equipment/instructions	Material will burn in a fire. Shut off source of flow if possible. Evacuate area and fight fire from a safe distance. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak. Use water spray to cool adjacent structures and to protect personnel. Containers can build up pressure if exposed to heat (fire). Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire. Be aware that a BLEVE (Boiling Liquid Expanding Vapor Explosion) may occur unless surfaces are kept cool with water. Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

6. Accidental Release Measures

Environmental precautions	Eliminate all sources of ignition. Isolate hazard area and deny entry. If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local, provincial and/or federal authorities, if required.

Other information

Keep unnecessary people away. Isolate area for at least 50 meters (164 feet) in all directions to preserve public safety. For large spills, if downwind consider initial evacuation for at least 300 meters (1000 feet).

Keep ignition sources out of area and shut off all ignition sources. Absorb spill with inert material (e. g. dry sand or earth) then place in a chemical waste container. Large Spills: Dike far ahead of liquid spill for later disposal.

Use a vapor suppressing foam to reduce vapors. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

Emergency action

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 800 meters (1/2 mile) in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8.)

7. Handling and Storage

Handling

Bond and ground lines and equipment (tank, transfer lines, pump, floats, etc.) used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

Storage

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Hydrogen sulfide can build up in the head space of storage vessels containing this material. Use appropriate respiratory protection to prevent exposure. See Exposure Controls/Personal Protection (Section 8).

When entering a storage vessel that has previously contained this material, it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Composition Information (Section 2) for exposure limits.

Do not eat, drink or smoke in areas of use or storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

Canada - British Columbia

Components	Type	Value	Form
BENZENE (71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
ETHYLBENZENE (100-41-4)	STEL	125.0 ppm	
	TWA	100.0 ppm	
HYDROGEN SULFIDE (7783-06-4)	Ceiling	10.0 ppm	
N-HEXANE (110-54-3)	TWA	20.0 ppm	
TOLUENE (108-88-3)	TWA	20.0 ppm	
XYLENE (1330-20-7)	STEL	150.0 ppm	
	TWA	0.5 ppm	Vapor and aerosol, inhalable.
		100.0 ppm	

Canada - Ontario

Components	Type	Value
BENZENE (71-43-2)	STEL	2.5 ppm
	TWA	0.5 ppm
ETHYLBENZENE (100-41-4)	STEL	540.0 mg/m3
		125.0 ppm
	TWA	435.0 mg/m3
		100.0 ppm
HYDROGEN SULFIDE (7783-06-4)	STEL	15.0 ppm
		21.0 mg/m3
	TWA	10.0 ppm
		14.0 mg/m3
N-HEXANE (110-54-3)	TWA	176.0 mg/m3

Components	Type	Value
		50.0 ppm
TOLUENE (108-88-3)	TWA	20.0 ppm
XYLENE (1330-20-7)	STEL	150.0 ppm
		650.0 mg/m3
	TWA	100.0 ppm
		435.0 mg/m3

Canada - Quebec

Components	Type	Value
BENZENE (71-43-2)	STEL	15.5 mg/m3
		5.0 ppm
	TWA	3.0 mg/m3
		1.0 ppm
ETHYLBENZENE (100-41-4)	STEL	543.0 mg/m3
		125.0 ppm
	TWA	434.0 mg/m3
		100.0 ppm
HYDROGEN SULFIDE (7783-06-4)	STEL	15.0 ppm
		21.0 mg/m3
	TWA	10.0 ppm
		14.0 mg/m3
N-HEXANE (110-54-3)	TWA	176.0 mg/m3
		50.0 ppm
TOLUENE (108-88-3)	TWA	188.0 mg/m3
		50.0 ppm
XYLENE (1330-20-7)	STEL	150.0 ppm
		651.0 mg/m3
	TWA	434.0 mg/m3
		100.0 ppm

Engineering controls

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

Generally, this material is contained within vessels and piping designed to withstand expected operating conditions. Certain operations, such as loading, unloading and on-line sampling, generally involve higher risk of exposure, and special equipment is often designed for these activities.

Personal protective equipment

Eye / face protection

Keep away from eyes. Eye contact can be avoided by using indirect-vent goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.

Skin protection

Dermal exposure to this chemical may add to the overall exposure.

Avoid skin contact with this material. Use appropriate chemical protective gloves, such as Viton®, when handling. Protective glove materials include, but are not limited to Tychem®BR/LV, SL, & TK. Additional protective clothing may be necessary.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination.

Respiratory protection

The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

9. Physical & Chemical Properties

Color	Black, brown or greenish
Odor	Petroleum
Odor threshold	Not available
Physical state	Liquid
Form	Not applicable
pH	Not available
Melting point/Freezing point	Not available Not available

Boiling point	> 95 °F (> 35 °C) IBP
Flash point	< -15 °F (< -26.1 °C)
Evaporation rate	Variable
Flammability limits in air, upper, % by volume	10 %
Flammability limits in air, lower, % by volume	1 %
Vapor pressure	Not available
Vapor density	> 1
Specific gravity	0.7 - 0.95 at 60/60 °F (15.6/15.6 °C)
Relative density	Not available
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
VOC	Not available
Pour point	Varies
Viscosity	Varies
Bulk density	5.84 - 7.85 lb/gal
Percent volatile	Not available
Molecular weight	Not available
Molecular formula	Mixture
Chemical family	Hydrocarbon Mixture

10. Chemical Stability & Reactivity Information

Chemical stability	Stable
Conditions to avoid	Avoid high temperatures, open flames, sparks and the use of ungrounded electrical equipment.
Incompatible materials	Avoid contact with strong oxidizers. See precautions under Handling & Storage (Section 7).
Hazardous decomposition products	Not anticipated under normal conditions.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Sensitization

US ACGIH Threshold Limit Values: Skin designation

BENZENE (CAS 71-43-2)	Can be absorbed through the skin.
N-HEXANE (CAS 110-54-3)	Can be absorbed through the skin.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

BENZENE (CAS 71-43-2)	1 Carcinogenic to humans.
CRUDE OIL (CAS 8002-05-9)	3 Not classifiable as to carcinogenicity to humans.
ETHYLBENZENE (CAS 100-41-4)	2B Possibly carcinogenic to humans.
TOLUENE (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
XYLENE (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

Pre-existing conditions aggravated by exposure	Pre-existing medical conditions which may be aggravated by exposure include disorders of the blood, bone marrow, blood forming organs, respiratory tract, liver, skin, peripheral nervous system, and auditory system.

Toxicological data

BENZENE: Studies of Workers Overexposed to Benzene: Studies of workers exposed to benzene show clear evidence that overexposure can cause cancer of the blood forming organs (acute myelogenous leukemia) and aplastic anemia, an often fatal disease. Some studies suggest overexposure to benzene may also be associated with other blood disorders including myelodysplastic syndrome. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of aplastic anemia have been reported in the offspring of persons severely overexposed to benzene. Studies in Laboratory Animals: Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and skeletal variations. Benzene has been classified as a proven human carcinogen by OSHA and a Group 1 (Carcinogenic to Humans) material by IARC.

ETHYLBENZENE: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). The incidence of tumors was also elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals have demonstrated evidence of ototoxicity (hearing loss) following exposure levels as low as 300 ppm for 5 days. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

HYDROGEN SULFIDE: Hydrogen sulfide gas has an unpleasant odor that diminishes with increased exposure. Eye irritation may occur at levels above 4 ppm. Olfactory fatigue occurs rapidly at levels of 50 ppm or higher. Odor is not a reliable warning property. Respiratory effects include irritation with possible pulmonary edema at levels above 50 ppm. At 500 ppm immediate loss of consciousness and death can occur.

NIOSH has determined that 100 ppm hydrogen sulfide is immediately dangerous to life and health (IDLH).

N-HEXANE: Long-term or repeated exposure to n-hexane can cause peripheral nerve damage. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure.

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs): Cancer is the most significant endpoint for PAHs. Certain PAHs are weak carcinogens which become carcinogenic after undergoing metabolism. Chronic or repeated exposure increases the likelihood of tumor initiation. Increased incidence of tumors of the skin, bladder, lung and gastrointestinal tract have been described in individuals overexposed to certain PAHs. Overexposure to PAHs has also been associated with photosensitivity and eye irritation. Inhalation overexposure of PAHs has been associated with respiratory tract irritation, cough, and bronchitis. Dermal overexposure has been associated with precancerous lesions, erythema, dermal burns, photosensitivity, acneiform lesions and irritation. Oral overexposure to PAHs has been associated with precancerous growths of the mouth (leukoplakia). Mild nephrotoxicity, congestion and renal cortical hemorrhages and elevated liver function tests, changes in the immune system and other effects have been observed in rats exposed to high levels of PAHs by ingestion.

TOLUENE: Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Abuse of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system, and can cause CNS depression, cardiac arrhythmias, and death. Studies of workers indicate longterm exposure may be related to impaired color vision and hearing. Some studies of workers suggest longterm exposure may be related to neurobehavioral and cognitive changes. Some of these effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Several studies of workers suggest longterm exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals have been largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. Studies of workers indicate long-term exposure may be related to effects on the liver, kidney and blood, but these appear to be limited to changes in serum enzymes and decreased leukocyte counts. Adverse effects on the liver, kidney, thymus and nervous system were observed in animal studies following very high levels of exposure. The relevance of these findings to humans is not clear at this time.

XYLENES, ALL ISOMERS: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, CNS damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross overexposure. Effects from Prolonged or Repeated Exposure: Impaired neurological function was reported in workers exposed to solvents including xylene. Studies in laboratory animals have shown evidence of impaired hearing following high levels of exposure. Studies in laboratory animals suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure. The relevance of these observations to humans is not clear at this time. Adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

CRUDE OIL: Lifetime dermal studies in rodents have shown in an increase in skin tumors with some crude oils. The International Agency for Research on Cancer (IARC) has concluded that there is limited evidence of carcinogenicity in animals and inadequate evidence of carcinogenicity in humans. The Overall IARC evaluation for crude oil is: "not classifiable as to its carcinogenicity to humans (Group 3)."

Exposure to this material may cause adverse effects or damage to the following organs or organ systems: blood, bone marrow, central nervous system, auditory system, peripheral nervous system, heart, immune system, kidneys, liver, lungs, lymphatic system, thymus, pitultary gland, thyroid, mucous membranes, respiratory tract, reproductive organs, testes, skin, and eyes.

12. Ecological Information

Ecotoxicity	Toxic to aquatic organisms.
Persistence and degradability	Not readily biodegradable.
Bioaccumulation / Accumulation	May bioaccumulate in aquatic organisms.
Partition coefficient	Not available
Mobility in environmental media	May partition into air, soil and water.

13. Disposal Considerations

Disposal instructions	In Canada, wastes should be disposed of according to federal, state, provincial and local regulations. For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

14. Transport Information

TDG

Proper shipping name	Petroleum Crude Oil

Hazard class	3
UN number	UN1267
Packing group	II

TDG

General The above description may not cover shipping in all cases. Please consult the TDG Directorate for specific shipping information.

15. Regulatory Information

Canadian regulations This material has been classified in accordance with the hazard criteria of the Hazardous Products Act and the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

Controlled under WHMIS (Canada).

All known major components of this material are listed on the Canadian Environmental Protection Act (CEPA) DSL or are exempt.

WHMIS status Controlled

WHMIS classification
B2 - Flammable/Combustible
D1A - Immediate/Serious-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

WHMIS labeling

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

NFPA ratings Health: 3
Flammability: 3
Instability: 0

HMIS® ratings	Health: 3* Flammability: 3 Physical hazard: 0 * Indicates chronic health hazard
Disclaimer	NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a MSDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available MSDS.
Issue date	03-08-2011
Completed by	Flint Hills Resources, LP - Operations EH&S

PETRO-CANADA®

MATERIAL SAFETY DATA SHEET

COMBUSTION UNIT

WHMIS CLASSIFICATION

Flammable Liquid (Class B2)
Poisonous Material (Class D1)

PRODUCT CODE: N/A
CHEMICAL CODE: 9371-01
DATE: October 7, 1988

SECTION I — MATERIAL IDENTIFICATION

Trade Name:	**CRUDE OIL (SOUR)**
Other Names:	Sour Crude
Chemical Synonyms and Family:	Petroleum Hydrocarbon
Name of Manufacturer/Supplier Address & Emergency Phone Number:	Petro-Canada Inc. **(403) 296-3000** P.O. Box 2844, Petro-Canada Centre Calgary, Alberta T2P 3E3
Poison Control Centre Numbers:	Consult local telephone directory for emergency numbers.
Application:	Crude Oil is the raw material of the petroleum refining industry. Sour crude contains dissolved hydrogen sulphide.

SECTION II — TRANSPORTATION

UN Number: 1267 Primary Classification: 3.1 Subsidiary Classification: 6.1

Compatibility Groups: N/A CANUTEC Transport Emergency No.: (613) 996-6666

FLAMMABLE LIQUID

SECTION III — COMPOSITION

COMPONENTS	ALLOWABLE LIMITS (8 Hr.)	% (VOL.)	CAS #
Complex mixture of paraffinic and aromatic hydrocarbons (C_1 - C_{50})*	not established	95-99	8002-05-9
Hydrogen sulphide (dissolved and free)	10 ppm	1-5	7783-06-4

* Contains small amounts of benzene, sulphur and oxygenated compounds.

Cette fiche est aussi disponible en français.

Material Trade Name: CRUDE OIL (SOUR)

SECTION IV PHYSICAL DATA

Density at 15°C):	0.62-0.98 kg/L (wide range)	Boiling point/ Range (at 1 atm):	21-650°C (wide range)
Vapour Pressure (at 37.8°C):	38-156 kPa	Percent Volatile (at 20°C):	Variable
Vapour Density (at 20°C):	>1 (approx.)	Evaporation Rate: (n-butyl acetate = 1)	Unknown.
Solubility in Water:	Insoluble		
Viscosity: (Kinematic)	3-12 cSt (@ 38°C) (varies with crude)	Appearance & Odour:	Dark brown to black liquid with "rotten egg" smell.

SECTION V FIRE & EXPLOSION DATA

Flash Point (method used = TCC):	<4°C (varies with crude)
Flammable limits in air (% by volume):	Unknown (varies with crude)
Auto-Ignition Temperature:	Unknown (varies with crude)
Fire and Explosion Hazards:	Easily ignitable by flame or spark. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Do not cut, drill or weld empty containers.
Extinguishing media:	Foam, dry chemical, carbon dioxide for small fires, water spray.
Firefighting Procedures:	Use full protective equipment and self-contained breathing apparatus. Stop flow. Contain spill. Cover with extinguishing agent. Use water spray to cool fire-exposed containers and as a protective screen. Isolate all ignition sources in area of spill. Use gas detector in confined spaces. To avoid spreading fire do not point solid water stream directly into burning product.
EXTREME FIRE HAZARD	

SECTION VI HEALTH HAZARD INFORMATION

Toxicity Data

Estimated acute LD_{50}> 3000 mg/kg (rat, oral): slightly toxic.

For H_2S: LC_{50}= 600 ppm/30 min. (inhalation, human): extremely toxic.

Crude Oil contains polycyclic aromatic hydrocarbons several of which have been identified as carcinogenic to experimental animals.

Effects of Overexposure

Inhalation: Exposures to high concentrations of hydrogen sulphide (1000 ppm or more i.e. 0.1% or more) will cause respiratory paralysis resulting in coma and death. At 600 ppm, H_2S will cause dizziness, nausea and edema. Prolonged exposure to 250 ppm H_2S may cause pulmonary edema. Irritation of nose and throat; headache, nausea, vomiting, dizziness, fatigue, light-headedness, reduced coordination and unconsciousness; central nervous system depressant; kidney and liver damage from long-term exposure. May be narcotic in high concentrations.

Skin and Eyes: Drying, cracking or inflammation of skin. Prolonged exposure to skin may cause dermatitis. Eye contact may cause irritation, but not permanent damage. Exposures to 20-50 ppm H_2S may cause inflammation of the eye tissues (conjunctivitis).

Ingestion: Overexposure due to ingestion is unlikely for adults since taste and smell limit the amount swallowed. Harmful or fatal if swallowed.

NOTE 1: AVOID BREATHING VAPOUR. AVOID CONTACT WITH SKIN AND EYES. AVOID ASPIRATION.

NOTE 2: Sour crude contains a small amount of benzene which is a suspect human carcinogen.

Emergency and First Aid Procedures Information

Skin:	**Remove contaminated clothing - launder before reuse. Soap and water wash. Discard saturated leather articles.**
Eyes:	**Copious warm water flush – 15 minutes. Physician assessment is irritation persists.**
Inhalation:	**Evacuate to fresh air. Apply Cardio Pulmonary Resuscitation if required. Administer oxygen if available. If resuscitation required, physician assessment mandatory.**
Ingestion:	**DO NOT INDUCE VOMITING. If vomiting – take care to prevent aspiration. Give 250 ml. (1/2 pint) of milk to drink. Liquid paraffin may slow gastric absorption. Mandatory physician assessment.**
Notes to Physician	**Gastric lavage should only be done after endotracheal intubation in view of the risk of aspiration which can cause serious chemical pneumonitis for which antibiotic and corticosteriod therapy may be indicated.**

SECTION VII REACTIVITY DATA

Stability:	Stable under normal storage and use.
Conditions to avoid:	Sources of ignition; excessive formation of oil mist; heating greatly increases fire and explosion hazards.
Materials to avoid:	Strong oxidizing agents (nitric acid, sulfuric acid, chlorine, ozones, peroxides, etc.) which cause detonation on contact.
Hazardous decomposition products:	CO_x, SO_x, NO_x, black smoke on combustion; H_2S may be present.
Can hazardous polymerization occur?:	No.

SECTION VIII SPILL OR LEAK PROCEDURES

Steps to be taken if material is released or spilled:	Evacuate personnel. Avoid contact. Use full protective equipment and breathing apparatus. Eliminate ignition sources. Shut off source of spill. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using electrically grounded explosion-proof pumps. Place absorbent in closed metal containers. DO NO FLUSH TO SEWER. Large spills may be pumped from upwind locations using vacuum trucks and extended hoses. Large pools may be covered with foam to prevent vapour evolution. Immediate shut down and evacuation if wind shifts. Constant monitoring is required.
Waste Disposal Method:	Dispose is approved landfill site or licensed waste reclaimer facility.

PETRO-CANADA®

MATERIAL SAFETY DATA SHEET #89

Combination Unit

WHMIS CLASSIFICATION

Flammable Liquid (Class B2)
Poisonous Material (Class D2)

PRODUCT CODE: N/A
CHEMICAL CODE: 9370-01
DATE: October 7, 1988

SECTION I — MATERIAL IDENTIFICATION

Trade Name:	**CRUDE OIL (SWEET)**
Other Names:	Sweet Crude
Chemical Synonyms and Family:	Petroleum Hydrocarbon
Name of Manufacturer/Supplier Address & Emergency Phone Number:	Petro-Canada Inc. **(403) 296-3000** P.O. Box 2844, Petro-Canada Centre Calgary, Alberta T2P 3E3
Poison Control Centre Numbers:	Consult local telephone directory for emergency numbers.
Application:	Crude Oil is the raw material of the petroleum refining industry.

SECTION II — TRANSPORTATION

UN Number: 1267 Primary Classification: 3.1 Subsidiary Classification: N/A

Compatibility Groups: N/A CANUTEC Transport Emergency No.: (613) 996-6666

FLAMMABLE LIQUID

SECTION III — COMPOSITION

COMPONENTS	ALLOWABLE LIMITS (8 Hr.)	% (VOL.)	CAS #
Complex mixture of paraffinic and aromatic hydrocarbons (C_1 - C_{50})*	not established	100	8002-05-9

* Contains small amounts of benzene, sulphur, and oxygenated compounds.

Cette fiche est aussi disponible en français.

SECTION IV PHYSICAL DATA

Density (at 15°C):	0.62-0.98 kg/L (wide range)	Boiling point/ Range (at 1 atm):	21 - 650°C (wide range)
Vapour Pressure (at 37.8°C):	38-156 kPa (approx.)	Percent Volatile (at 20°C):	Variable.
Vapour Density (at 20°C):	>1 (approx.)	Evaporation Rate: (n-butyl acetate = 1)	Unknown.
Solubility in Water:	Insoluble		
Viscosity: (Kinematic)	3 - 12 cSt (@ 38°C) (varies with crude)	Appearance & Odour:	Dark brown to black liquid with characteristic crude odour.

SECTION V FIRE & EXPLOSION DATA

Flash Point (method used = COC):	<4°C (varies with crude)
Flammable limits in air (% by volume):	Unknown (varies with crude)
Auto-Ignition Temperature:	Unknown (varies with crude)
Fire and Explosion Hazards:	Easily ignitable by flame or spark. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Do not cut, drill or weld empty containers.
Extinguishing media:	Foam, dry chemical, carbon dioxide for small fires; water spray.
Firefighting Procedures:	Use full protective equipment and self-contained breathing apparatus. Stop flow. Contain spill. Cover with extinguishing agent. Use water spray to cool fire-exposed containers and as a protective screen. Isolate all ignition sources in area of spill. Use gas detector in confined spaces. To avoid spreading fire do not point solid water stream directly into burning product.
EXTREME FIRE HAZARD	

SECTION VI HEALTH HAZARD INFORMATION

Toxicity Data

Estimated acute LD_{50}> 3000 mg/kg (rat, oral): slightly toxic.
Crude Oil contains polycyclic aromatic hydrocarbons several of which have been identified as carcinogenic to experimental animals.

Effects of Overexposure

Inhalation:	Irritation of nose and throat; headache, nausea, vomiting, dizziness, fatigue, light-headedness, reduced coordination and unconsciousness; central nervous system depressant; kidney and liver damage from long-term exposure. May be narcotic in high concentrations.
Skin and Eyes:	Drying, cracking or inflammation of skin. Prolonged exposure to skin may cause dermatitis. Eye contact may cause irritation.
Ingestion:	Overexposure due to ingestion is unlikely. Harmful or fatal if swallowed.

NOTE 1: AVOID BREATHING VAPOUR. AVOID CONTACT WITH SKIN AND EYES. AVOID ASPIRATION.
NOTE 2: Crude Oil contains a small amount of benzene which is a suspect human carcinogen.

Emergency and First Aid Procedures Information

Skin:	**Remove contaminated clothing - launder before reuse. Soap and water wash. Discard saturated leather articles.**
Eyes:	**Copious warm water flush – 15 minutes. Physician assessment is irritation persists.**
Inhalation:	**Evacuate to fresh air. Apply Cardio Pulmonary Resuscitation if required. Administer oxygen if available. If resuscitation required, physician assessment mandatory.**
Ingestion:	**DO NOT INDUCE VOMITING. If vomiting – take care to prevent aspiration. Give 250 ml. (1/2 pint) of milk to drink. Liquid paraffin may slow gastric absorption. Mandatory physician assessment.**
Notes to Physician	**Gastric lavage should only be done after endotracheal intubation in view of the risk of aspiration which can cause serious chemical pneumonitis for which antibiotic and corticosteriod therapy may be indicated.**

SECTION VII REACTIVITY DATA

Stability:	Stable under normal storage and use.
Conditions to avoid:	Sources of ignition; excessive formation of oil mist; heating greatly increases fire and explosion hazards.
Materials to avoid:	Strong oxidizing agents (nitric acid, sulfuric acid, chlorine, ozones, peroxides, etc.) which cause detonation on contact.
Hazardous decomposition products:	CO_x, NO_x, SO_x, black smoke on combustion.
Can hazardous polymerization occur?:	No.

SECTION VIII SPILL OR LEAK PROCEDURES

Steps to be taken if material is released or spilled:	Evacuate personnel. Avoid contact. Use full protective equipment and breathing apparatus. Eliminate ignition sources. Shut off source of spill. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using electrically grounded explosion-proof pumps. Place absorbent in closed metal containers. DO NO FLUSH TO SEWER. Large spills may be pumped from upwind locations using vacuum trucks and extended hoses. Large pools may be covered with foam to prevent vapour evolution. Immediate shut down and evacuation if wind shifts. Constant monitoring is required.
Waste Disposal Method:	Dispose in approved landfill site or licensed waste reclaimer facility.

SECTION IX SPECIAL PROTECTION INFORMATION

Ventilation:	General ventilation. Use explosion-proof mechanical ventilation suitable for group D atmospheres. Local exhaust, if necessary, to control vapours to allowable limits.
Respiratory Protection:	None normally required. In poorly ventilated areas or confined spaces use full-face air-supplied or self-contained breathing apparatus.
Protective Gloves:	NITRILE, VITON
Eye Protection:	Chemical goggles.
Other Protective Clothing:	Tyvek protective clothing to prevent all contact. DO NOT USE NATURAL RUBBER, NEOPRENE, BUTYL RUBBER OR PVC (polyvinyl chloride).

SECTION X SPECIAL PRECAUTIONS

HANDLE AS EXTREMELY FLAMMABLE LIQUID. Store in cool, well-ventilated area. Electrically ground/bond during pumping or transfer to avoid static accumulation. PRECAUTIONS SHOULD BE TAKEN TO MINIMIZE SKIN AND EYE CONTACT AND INHALATION. High standards of personal hygiene are necessary. Wash skin thoroughly with soap and water after contact and before eating. Launder work clothes frequently.

SECTION XI REFERENCES

CONCAWE, First Aid Measures, Medical Toxicology Data and Professional Advice to Clinicians on Petroleum Products, February 1983.

ACGIH, Threshold Limit Values and Biological Exposure Indices for 1987-88.

CONCAWE, Health Aspects of Petroleum Fuels – General Principles, April, 1985.

API, Petroleum Process Stream Terms Included in the Chemical Substances Inventory Under the Toxic Substances Control Act (TSCA), 1983

Transportation of Dangerous Goods Act & Regulations, July, 1985.

Petro-Canada Inc.

Prepared by Health, Safety & Security

United Refining Company • Petroleum Products

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ULTRA LOW SULFUR ALL-WEATHER DIESEL SUPREME, DYED

United Refining Company
15 Bradley Street, P.O. Box 780
Warren, PA 16365

TRANSPORTATION / HANDLING EMERGENCIES
Chemtrec (800) 424-9300
FOR OTHER PRODUCT INFORMATION
United Refining Co. (814) 723-1500

A. PRODUCT IDENTIFICATION

Synonyms: AWDS - #2D – Dyed, Premium Diesel Dyed, Enhanced Diesel Dyed
Chemical Name: Petroleum Hydrocarbon
Chemical Family: Petroleum Hydrocarbon
Chemical Formula: Mixture
CAS No.: Mixture

NFPA Identification:
Health: 3
Flammability: 2
Reactivity: 0

Bill of Lading Statement: 15 ppm Sulfur (Maximum) Dyed Ultra Low Sulfur Motor Vehicle Diesel Fuel (#2-D). Not for use in highway vehicles or engines except for tax exempt use in accordance with section 4082 of the Internal Revenue Code.

B. HAZARDOUS AND NON-HAZARDOUS COMPONENTS

INGREDIENTS	CAS NUMBER	PEL	%	TLV
Petroleum Distillates	68334-30-5	No Data	≥98 Vol.	5 mg/m3
Sulfur	7704-34-9	No Data	<0.0015 wt	No Data
Additives	Mixture	No Data	<0.25 Vol.	No Data
Red Dye	No Data	No Data	*	No Data
Fatty Acid Methyl Esters	68937-84-8	N/A	≤ 5 Vol.	N/A

**Note: Additives do not significantly alter the toxicity of Diesel Fuel.*
**Note: Red Dye does not significantly alter the toxicity of Diesel Fuel.*

C. ACUTE EFFECTS OF OVEREXPOSURE:

EYE: Exposure to vapors, fumes, or mists may cause irritation.

SKIN: Repeated or prolonged contact may result in defatting, redness, itching, inflammation, cracking and possible secondary infection. May cause allergic reactions.

INHALATION: May cause respiratory tract irritation. Exposure may cause central nervous system symptoms.

INGESTION: Aspiration into lungs may cause pneumonitis. May cause gastrointestinal disturbances, irritation, nausea, vomiting and diarrhea.

D. CHRONIC EFFECTS OF OVEREXPOSURE

This product has not been tested as a whole for all potential health effects. It may have other health hazards related to its components.

E. OTHER HEALTH EFFECTS

Light Petroleum Distillate 95 - 99± with less than 0.25% of proprietary additives. The following warning applies when this fuel is burned in diesel engines: The National Institute of Occupational Safety and Health regards exposure to diesel exhaust as a potential cause of lung cancer, based on positive laboratory animal studies and some evidence in humans. Risk of cancer depends on duration and level of exposure.

PRODUCT NAME: ULTRA LOW SULFUR ALL-WEATHER DIESEL SUPREME, DYED

F. TOXICOLOGY

Acute Oral LD50:	No Data Available
Acute Dermal LD50:	No Data Available
Acute Inhalation LC50:	No Data Available
Carcinogenicity:	Suspected
Mutagenicity:	No Data Available

G. FIRST AID AND EMERGENCY PROCEDURES

EYE: Flush immediately with large amounts of water for 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

SKIN: Wash affected area with soap and water. Contact physician if irritation persists.

INHALATION: Remove affected person from source of exposure. If not breathing, begin cardiopulmonary resuscitation (CPR). If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: Do not induce vomiting - aspiration hazard. Contact physician immediately.

H. PHYSICAL DATA

Appearance:	Red Liquid
Odor:	Mild Petroleum Odor
Boiling Range (°F):	340 - 675
Vapor Pressure (mm Hg):	<5
Vapor Density (Air = 1):	>1
Solubility in Water:	<0.1%
Specific Gravity (H2O = 1):	<0.876
Volatiles:	>99
Evaporation (Ether = 1):	<1
Viscosity:	1.9 - 4.1 CST @ 104° F.
Auto Ignition Temperature (°F):	494
pH:	Not Applicable

I. FIRE AND EXPLOSION DATA

Flash Point (Method Used):	>125° F Pensky-Marten
Flammable Explosion Limits:	LEL: 0.6 UEL: 7.5

Fire Extinguishing Media: Foam, CO_2, Dry Chemical Extinguishers or water spray.

Special Fire Hazards and Fire Fighting Procedures:

Forms carbon monoxide, carbon dioxide, and sulfur dioxide. Wear bunker gear and self contained breathing apparatus.

PRODUCT NAME: ULTRA LOW SULFUR ALL-WEATHER DIESEL SUPREME, DYED

J. REACTIVITY

Stable: √ Unstable: N/A
Conditions to Avoid: Sources of ignition and fume inhalation.
Incompatibility: Avoid contact with heat and strong oxidizers.
Hazardous Polymerization: Not likely to occur.
Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide, Sulfur Dioxide

K. SPILL, LEAK AND DISPOSAL PROCEDURES

Remove sources of ignition. Contain the product using sand, earth, or sorbent material. Recover all free liquid. Provide adequate ventilation and personal protective equipment for recovery team. Keep product out of surface water, drains, and sewers.

L. WASTE DISPOSAL METHOD

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in federal regulations; however it could be hazardous if it is considered toxic, corrosive, ignitable, or reactive according to federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed or comes in contact with a hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste. If it is considered hazardous, regulations 40 CFR 262, 263 and 264 apply. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable federal, state, and local regulations.

M. DOT TRANSPORTATION

Hazmat Description & Proper Shipping Name: Diesel Fuel, Combustible Liquid, NA 1993, PG III
Hazard Class / Division: Combustible Liquid
ID Number: NA 1993
Packing Group: III

N. PROTECTIVE EQUIPMENT

RESPIRATORY: Ventilation may be used to reduce airborne concentrations. If ventilation can not reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used. Use NIOSH or MSHA approved respiratory protective equipment when airborne exposure limits are exceeded.
EYE: Safety Glasses, Chemical Goggles, or Full Face Shield may be used to protect eyes or face from exposure. Have eye baths readily available. Do not wear contact lenses.
GLOVE: Neoprene or Rubber
OTHER: Wear body covering garments to prevent prolonged or repeated direct dermal exposure. Remove soaked clothing since it presents a fire hazard. Launder before use.
NOTE: Personal protective information shown in section N is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

PRODUCT NAME: ULTRA LOW SULFUR ALL-WEATHER DIESEL SUPREME, DYED

O. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

This is a stable material in closed containers under normal storage and handling conditions at room temperature. It does not undergo hazardous polymerization. Incompatible with strong oxidizing agents. Heating greatly increases fire hazard. Do not eat, drink, or smoke in areas of use or storage.

P. NOTICE

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, United Refining Company extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

ENVIRONMENTAL DATA SHEET

PRODUCT NAME: ULTRA LOW SULFUR ALL-WEATHER DIESEL SUPREME, DYED

REGULATORY INFORMATION:

SARA Title III / Superfund Amendments and Reauthorization Act of 1986 Sections 302, 304, 311, 312 and 313. The following regulations apply to this product:

Section 302 - EXTREMELY HAZARDOUS SUBSTANCES:

40 CFR Parts 300 & 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified on Appendix A and B of the extremely hazardous substance list:

COMPONENTS	REPORTABLE QUANTITY (LBS)	THRESHOLD PLANNING QUANTITY (LBS)
N/A	N/A	N/A

Section 304 - EMERGENCY RELEASE NOTIFICATION:

40 CFR Part 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified either as an extremely hazardous substance (see section 302) or a CERCLA hazardous substance - 40 CFR 302 (51 FR 34547 - September 29, 1988) - which in case of a spill or release may be subject to reporting requirements under section 304 of Title III:

COMPONENTS	REPORTABLE QUANTITY (LBS)	THRESHOLD PLANNING QUANTITY (LBS)
N/A	N/A	N/A

Sections 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS

40 CFR Part 370 (52 FR 38344 - October 15, 1987).

Depending on local, state and federal regulations, Material Safety Data Sheets (MSDS's) or lists of MSDS's (Product Names) may be required to be submitted to the state emergency response commission, local emergency planning committee, and the local fire department if you have:

10,000 pounds or more of an OSHA hazardous substance or 500 pounds or the threshold planning quantity - whichever is less - of an extremely hazardous substance. *NOTE: Reportable quantity levels can vary from state to state and year to year depending on applicable state and/or federal regulations.*

EFFECTIVE DATE: September 6, 2013
REVISION: 4
SUPERSEDES: June 29, 2012

United Refining Company • Petroleum Products

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: FCC CHARGE STOCK

United Refining Company
15 Bradley Street, P.O. Box 780
Warren, PA 16365

TRANSPORTATION / HANDLING EMERGENCIES
Chemtrec (800) 424-9300
FOR OTHER PRODUCT INFORMATION
United Refining Co. (814) 723-1500

A. PRODUCT IDENTIFICATION

Synonyms: Hvy. Vacuum Gas Oil, Cat Feed
Chemical Name: Aromatic Hydrocarbon
Chemical Family: Petroleum Hydrocarbon
Chemical Formula: Mixture
CAS No.: 64741-61-3

NFPA Identification:
Health: 3
Flammability: 1
Reactivity: 0

B. HAZARDOUS COMPONENTS

INGREDIENTS	CAS NUMBER	PEL	% VOL	TLV
Gas Oil, Full Range	68410-00-4	5 mg/m3	~48	Not Determined
Distillates (Petroleum), Vacuum	70592-78-8	Not Determined	~32	Not Determined
Distillates (Petroleum), Light Vacuum	70592-77-7	Not Determined	~13	Not Determined
Vacuum Distillate, Heavy Paraffin	64741-57-7	Not Determined	~4	Not Determined
Hydrogen Sulfide (H2S)	7783-06-4	10 ppm	~1-3	10 ppm

C. ACUTE EFFECTS OF OVEREXPOSURE:

EYE: Exposure to vapors, fumes, liquids, or mists may cause irritation. Contact with heated material may cause thermal burns.

SKIN: Repeated or prolonged contact may result in defatting, redness, itching, inflammation, cracking, and possible infection. May cause allergic reactions in some individuals. Contact with heated material may cause thermal burns of varying degrees.

INHALATION: May cause respiratory tract irritation. Exposure to high concentrations of dense vapors and mists may lead to pneumonia. May cause behavioral changes.

INGESTION: Aspiration into lungs may cause pneumonitis. May cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, and diarrhea.

D. CHRONIC EFFECTS OF OVEREXPOSURE

Distillates (petroleum), heavy catalytic cracked - a complex combination of hydrocarbons produced by the distillation of products from the catalytic cracking process. It consists of hydrocarbons having carbon numbers predominately in the range of C15 through C35 and boiling in the range of approximately 260° C to 500° C (500° F to 932° F). This stream is likely to contain 5 wt% or more of 4 to 6 membered condensed ring aromatic hydrocarbons. These limits have been established for coal tar pitch volatiles. This material contains substantial amounts of polynuclear aromatic hydrocarbons and has health hazards similar to coal tar pitch volatiles.

PRODUCT NAME: FCC CHARGE STOCK

E. OTHER HEALTH EFFECTS

Products of similar composition have produced skin cancer in laboratory animals and have been positive in mutagenic test systems. CONCAWE has also noted that "prolonged or repeated inhalation of significant concentrations of mists of aromatic process oils may lead possibly to a benign form of lung fibrosis or possibly to cancer of the respiratory tract and possibly to cancer of the upper gastrointestinal tract." Carcinogenic determinations: IARC -- sufficient evidence for carcinogenicity in experimental animals of the high boiling fraction of catalytically cracked oils. NTP -- sufficient evidence that soots, tars and some mineral oils are carcinogenic. NOTE: This product has not been tested as a whole for all potential health effects. It may have other health hazards related to its components. See "Ingredient/Health Hazards" for additional information.

F. TOXICOLOGY

Acute Oral LD50:	No Data Available
Acute Dermal LD50:	No Data Available
Acute Inhalation LC50:	No Data Available
Carcinogenicity:	Suspect Polynuclear Aromatic Hydrocarbons

G. FIRST AID AND EMERGENCY PROCEDURES

EYE: Flush immediately with large amounts of water for 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists. Thermal burns require immediate medical attention.

SKIN: Hot Material: Do not remove if stuck to skin. Immediately flush with cool water for at least 15 minutes. Apply ice. Call a physician. Cold Material: Remove cold material with water and then wash with soap and water. If symptoms of pain or irritation occur, call a physician. If bleeding, contact emergency personnel immediately.

INHALATION: Remove affected person from source of exposure. If not breathing, begin cardiopulmonary resuscitation (CPR). If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: If aspiration hazard is likely do not induce vomiting. Obtain immediate medical attention. If spontaneous vomiting occurs, monitor for breathing difficulty.

H. PHYSICAL DATA

Appearance:	Greenish or brown waxy material.
Odor:	Petroleum
Initial Boiling Point (°F):	650
Vapor Pressure (mm Hg):	<1
Vapor Density (Air = 1):	>1
Solubility in Water:	Nil
Specific Gravity (H2O = 1):	<1
Volatiles:	<1%
Evaporation (Ether = 1):	<1
Viscosity:	24 Centistokes @ 122° F.
Ignition Temperature (°F): >600	
pH:	N/A

PRODUCT NAME: FCC CHARGE STOCK

I. FIRE AND EXPLOSION DATA

Flash Point (Method Used): ~300° F COC
Flammable Explosion Limits: LEL: No Data Available UEL: No Data Available

Fire Extinguishing Media: Foam, CO_2, or Dry Chemical Extinguishers

Special Fire Hazards and Fire Fighting Procedures:

Hazardous gases may evolve during fires. Fire fighters need to be trained and use appropriate personal protective equipment which may include bunker gear and self contained breathing apparatus.

J. REACTIVITY

Stable: √ Unstable: N/A
Conditions to Avoid: Sources of ignition, including static electricity.
Incompatibility: Stable. Avoid contact with strong oxidizers.
Hazardous Polymerization: Not likely to occur.
Hazardous Decomposition Products: Combustion may produce CO, CO2, & reactive hydrocarbons.

K. SPILL, LEAK AND DISPOSAL PROCEDURES

If your facility or operation has an "Oil or Hazardous Substance Contingency Plan", activate the procedure. Take immediate steps to stop and contain the spill. Caution should be exercised regarding personnel safety and exposure to the spilled material.

L. WASTE DISPOSAL METHOD

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in federal regulations; however it could be hazardous if it is considered toxic, corrosive, ignitable, or reactive according to federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed or comes in contact with a hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste. If it is considered hazardous, regulations 40 CFR 262, 263 and 264 apply. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable federal, state, and local regulations.

M. DOT TRANSPORTATION

Hazmat Description & Proper Shipping Name: Petroleum Oil, N.O.S.
Hazard Class / Division: (49 CFR 172.101): Combustible Liquid
ID Number: (49 CFR 172.101): NA 1270
Packing Group: Petroleum Oil, N.O.S. Combustible Liquid, NA 1270
Label: (49 CFR 172.101): Combustible Liquid

PRODUCT NAME: FCC CHARGE STOCK

N. PROTECTIVE EQUIPMENT

RESPIRATORY: Ventilation may be used to reduce airborne concentrations. If ventilation can not reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used. Use NIOSH or MSHA approved respiratory protective equipment when airborne exposure limits are exceeded.
EYE: Safety Glasses, Mono-Goggles, Chemical Goggles, or Full Face Shield may be used to protect eyes or face from chemical exposure. Have eye baths readily available. Do not wear contact lenses.
GLOVE: Wear impervious gloves (and clothing) to prevent skin contact.
OTHER: Personal protective equipment to preclude contact with liquid and vapors.
NOTE: Personal protective information shown in section N is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

O. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Avoid extremes of temperature in storage. Store in tightly closed containers in cool, dry, isolated, well-ventilated area away from heat, sources of ignition, and incompatibles. Do not eat, drink or smoke in areas of use or storage. Empty containers may contain flammable / combustible or explosive residue or vapors. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

P. NOTICE

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, United Refining Company extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

ENVIRONMENTAL DATA SHEET

PRODUCT NAME: FCC CHARGE STOCK

REGULATORY INFORMATION:

SARA Title III / Superfund Amendments and Reauthorization Act of 1986 Sections 302, 304, 311, 312 and 313. The following regulations apply to this product:

Section 302 - EXTREMELY HAZARDOUS SUBSTANCES:

40 CFR Parts 300 & 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified on Appendix A and B of the extremely hazardous substance list:

COMPONENTS	REPORTABLE QUANTITY (LBS)	THRESHOLD PLANNING QUANTITY (LBS)
N/A	N/A	N/A

Section 304 - EMERGENCY RELEASE NOTIFICATION:

40 CFR Part 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified either as an extremely hazardous substance (see section 302) or a CERCLA hazardous substance - 40 CFR 302 (51 FR 34547 - September 29, 1988) - which in case of a spill or release may be subject to reporting requirements under section 304 of Title III:

COMPONENTS	REPORTABLE QUANTITY (LBS)	THRESHOLD PLANNING QUANTITY (LBS)
N/A	N/A	N/A

Sections 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS

40 CFR Part 370 (52 FR 38344 - October 15, 1987).

Depending on local, state and federal regulations, Material Safety Data Sheets (MSDS's) or lists of MSDS's (Product Names) may be required to be submitted to the state emergency response commission, local emergency planning committee, and the local fire department if you have:

10,000 pounds or more of an OSHA hazardous substance or 500 pounds or the threshold planning quantity - whichever is less - of an extremely hazardous substance. *NOTE: Reportable quantity levels can vary from state to state and year to year depending on applicable state and/or federal regulations.*

EFFECTIVE DATE: June 29, 2012
REVISION: 4
SUPERSEDES: March 9, 2012

United Refining Company • Petroleum Products

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: LIGHT CYCLE OIL

United Refining Company
15 Bradley Street, P.O. Box 780
Warren, PA 16365

TRANSPORTATION / HANDLING EMERGENCIES
Chemtrec (800) 424-9300
FOR OTHER PRODUCT INFORMATION
United Refining Co. (814) 723-1500

A. PRODUCT IDENTIFICATION

Synonyms: LCO
Chemical Name: Light Catalytic Cracked Distillates
Chemical Family: Petroleum Hydrocarbon
Chemical Formula: C9 - C25
CAS No.: 64741-59-9

NFPA Identification:
Health: 1
Flammability: 2
Reactivity: 0

B. HAZARDOUS COMPONENTS

INGREDIENTS	CAS NUMBER	PEL	%	TLV
C9 - C25 Distillate Branched Paraffinic Branched Olefinic Bicyclic Aromatics	64741-59-9	No Data	>98 Vol.	No Data
Sulfur	7704-34-9	No Data	<2.3 Wt.	No Data

C. ACUTE EFFECTS OF OVEREXPOSURE:

EYE: Possible hyperemia and conjunctiva. Mild eye irritation.

SKIN: Defatting and dermatitis.

INHALATION: Pulmonary edema, chemical pneumonitis.

INGESTION: Pulmonary edema, chemical pneumonitis.

D. CHRONIC EFFECTS OF OVEREXPOSURE

Irritation to mouth, throat and digestive tract.

E. OTHER HEALTH EFFECTS

May cause nausea, dizziness or unconsciousness. Simple asphyxiant.

PRODUCT NAME: LIGHT CYCLE OIL

F. TOXICOLOGY

Acute Oral LD50:	Rabbit: 28 gm/kg
Acute Dermal LD50:	Rabbit: Slightly Toxic
Acute Inhalation LC50:	Rabbit: Slightly
Carcinogenicity:	No Data Available
Mutagenicity:	No Data Available

G. FIRST AID AND EMERGENCY PROCEDURES

EYE: Flush immediately with large amounts of water for 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

SKIN: Wash affected area with soap and water. Remove soaked clothing, wash before reuse. Contact physician if irritation persists.

INHALATION: Remove affected person from source of exposure. If not breathing, begin cardiopulmonary resuscitation (CPR). If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: Do not induce vomiting - aspiration hazard. Contact physician immediately. If spontaneous vomiting occurs, monitor breathing.

H. PHYSICAL DATA

Appearance:	Bright Yellow
Odor:	Sweet, Aromatic
Boiling Range (°F):	410 - 651
Vapor Pressure (mm Hg):	<1
Vapor Density (Air = 1):	>1
Solubility in Water:	<0.1%
Specific Gravity (H2O = 1):	0.98
Volatiles:	>1%
Evaporation (Butyl Acetate = 1):	<1
Viscosity:	2-4 CST @ 100° F.
Auto Ignition Temperature (°F):	>500
pH:	Not Applicable

I. FIRE AND EXPLOSION DATA

Flash Point (Method Used):	>120° F Pensky-Marten
Flammable Explosion Limits:	LEL: 0.6 UEL: 7.5

Fire Extinguishing Media: Foam, CO_2, Dry Chemical Extinguishers, or water spray.

Special Fire Hazards and Fire Fighting Procedures:

Toxic carbon monoxide and carbon dioxide. Wear bunker gear and self contained breathing apparatus.

PRODUCT NAME: LIGHT CYCLE OIL

J. REACTIVITY

Stable: √	Unstable: N/A	
Conditions to Avoid:	Open Flame	
Incompatibility:	Strong Oxidizers	
Hazardous Polymerization:		Not likely to occur.
Hazardous Decomposition Products:		Carbon Monoxide, Carbon Dioxide

K. SPILL, LEAK AND DISPOSAL PROCEDURES

Remove sources of ignition. Contain the product using sand, earth, or sorbent material. Recover all free liquid. Provide adequate ventilation and personal protective equipment for recovery team. Keep product out of surface water, drains, and sewers. Gas free empty containers.

L. WASTE DISPOSAL METHOD

This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in federal regulations; however it could be hazardous if it is considered toxic, corrosive, ignitable, or reactive according to federal definitions (40 CFR 261). Additionally, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed or comes in contact with a hazardous waste. If such contact or mixing may have occurred, check 40 CFR 261 to determine whether it is a hazardous waste. If it is considered hazardous, regulations 40 CFR 262, 263 and 264 apply. The transportation, storage, treatment, and disposal of this waste material must be conducted in compliance with all applicable federal, state, and local regulations.

M. DOT TRANSPORTATION

Hazmat Description & Proper Shipping Name: Light Cycle Oil, Combustible Liquid, NA 1993, PG III
Hazard Class / Division: Combustible Liquid
ID Number: NA 1993
Packing Group: III

N. PROTECTIVE EQUIPMENT / ENGINEERING CONTROLS

RESPIRATORY: Ventilation may be used to reduce airborne concentrations. If ventilation can not reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used. Use NIOSH or MSHA approved respiratory protective equipment when airborne exposure limits are exceeded.
EYE: Safety Glasses, Chemical Goggles, or Full Face Shield may be used to protect eyes or face from exposure. Have eye baths readily available. Do not wear contact lenses.
GLOVE: Neoprene or Rubber
OTHER: Wear body covering garments to prevent prolonged or repeated direct dermal exposure.

NOTE: Personal protective information shown in section N is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.

PRODUCT NAME: LIGHT CYCLE OIL

O. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store in closed containers in a ventilated area away from ignition sources and strong oxidizing agents. Conditions must meet OSHA requirements for Class III Combustible Liquids. Ground and bond containers to prevent static sparks. Follow good hygienic practices.

P. NOTICE

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, United Refining Company extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

ENVIRONMENTAL DATA SHEET

PRODUCT NAME: LIGHT CYCLE OIL

REGULATORY INFORMATION:

SARA Title III / Superfund Amendments and Reauthorization Act of 1986 Sections 302, 304, 311, 312 and 313. The following regulations apply to this product:

Section 302 - EXTREMELY HAZARDOUS SUBSTANCES:

40 CFR Parts 300 & 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified on Appendix A and B of the extremely hazardous substance list:

COMPONENTS	REPORTABLE QUANTITY (LBS)	THRESHOLD PLANNING QUANTITY (LBS)
N/A	N/A	N/A

Section 304 - EMERGENCY RELEASE NOTIFICATION:

40 CFR Part 355 (52 FR 13378, 15412 - April 28, 1987; 52 FR 48072 - December 17, 1987; 53 FR 5574 - February 25, 1988).

This product contains the following component(s) identified either as an extremely hazardous substance (see section 302) or a CERCLA hazardous substance - 40 CFR 302 (51 FR 34547 - September 29, 1988) - which in case of a spill or release may be subject to reporting requirements under section 304 of Title III:

N/A	N/A	N/A	NA

Sections 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS

40 CFR Part 370 (52 FR 38344 - October 15, 1987).

Depending on local, state and federal regulations, Material Safety Data Sheets (MSDS's) or lists of MSDS's (Product Names) may be required to be submitted to the state emergency response commission, local emergency planning committee, and the local fire department if you have:

10,000 pounds or more of an OSHA hazardous substance or 500 pounds or the threshold planning quantity - whichever is less - of an extremely hazardous substance. *NOTE: Reportable quantity levels can vary from state to state and year to year depending on applicable state and/or federal regulations.*

EFFECTIVE DATE: June 29, 2012

REVISION: 9

SUPERSEDES: March 9, 2012

CHAPTER 2: ACCIDENT REPORTING

DOT Part 195 References:

- Reporting Accidents (195.50)
- Telephonic Notice of Certain Accidents (195.52)
- Accident Reports (195.54)
- Address for Written Reports (195.58)
- Gathering of Data for Accident Reports (195.402 c-2)
- Analyzing Pipeline Accidents (195.402 c-5)
- Minimizing Recurrences of Pipeline Accidents (195.402 c-6)

2.1 DEFINITION OF ACCIDENT

Kiantone defines an accident as a failure in the Kiantone pipeline system in which there is a release of crude oil resulting in any of the following:

- Explosion or fire not intentionally set by Kiantone Pipeline Corp.
- A release of five or more gallons of crude oil (not from a maintenance activity.)
- Death of any person.
- Personal injury necessitating hospitalization.
- Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to Kiantone property or others, or both, exceeding $50,000.
- Pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines.
- Any other release, which in the judgment of KPL, is significant even though it may not meet the criteria of any other paragraph of Part 195 Subpart B.

Releases During Maintenance Activities

An accident report is not required for a release of less than five barrels resulting from a pipeline maintenance activity if the release is:

- Not otherwise reportable under Part 195.50 (see above); and
- Not one described in Part 195.52(a)(4) – see above; and
- Confined to company property or the pipeline right-of-way; and
- Cleaned up promptly.

Determination of Reportable Incidents

Due to the complex nature of a pipeline system, an accident or release of product can have varying reporting requirements for notice to federal, state, and local governing entities. To ensure all requirements are met for reporting, the designated reporter must follow the Figures on the following pages to determine which government agencies should be notified. Determination should start with the state in which the incident occurred (Figures 2.1.1 and 2.1.2), and then follow all pipeline reporting requirements (Figure 2.1.3.)

Documentation of Reportable Incidents

Incident information should be recorded on Form 2.3.1, DOT Telephonic Record, at the earliest moment to ensure everything is recorded. Additional records should be attached as needed.

Additional reporting is required after an incident is over. This is covered further in section 2.4.

Forms

DOT Telephonic Report, Form 2.3.1.

PENNSYLVANIA

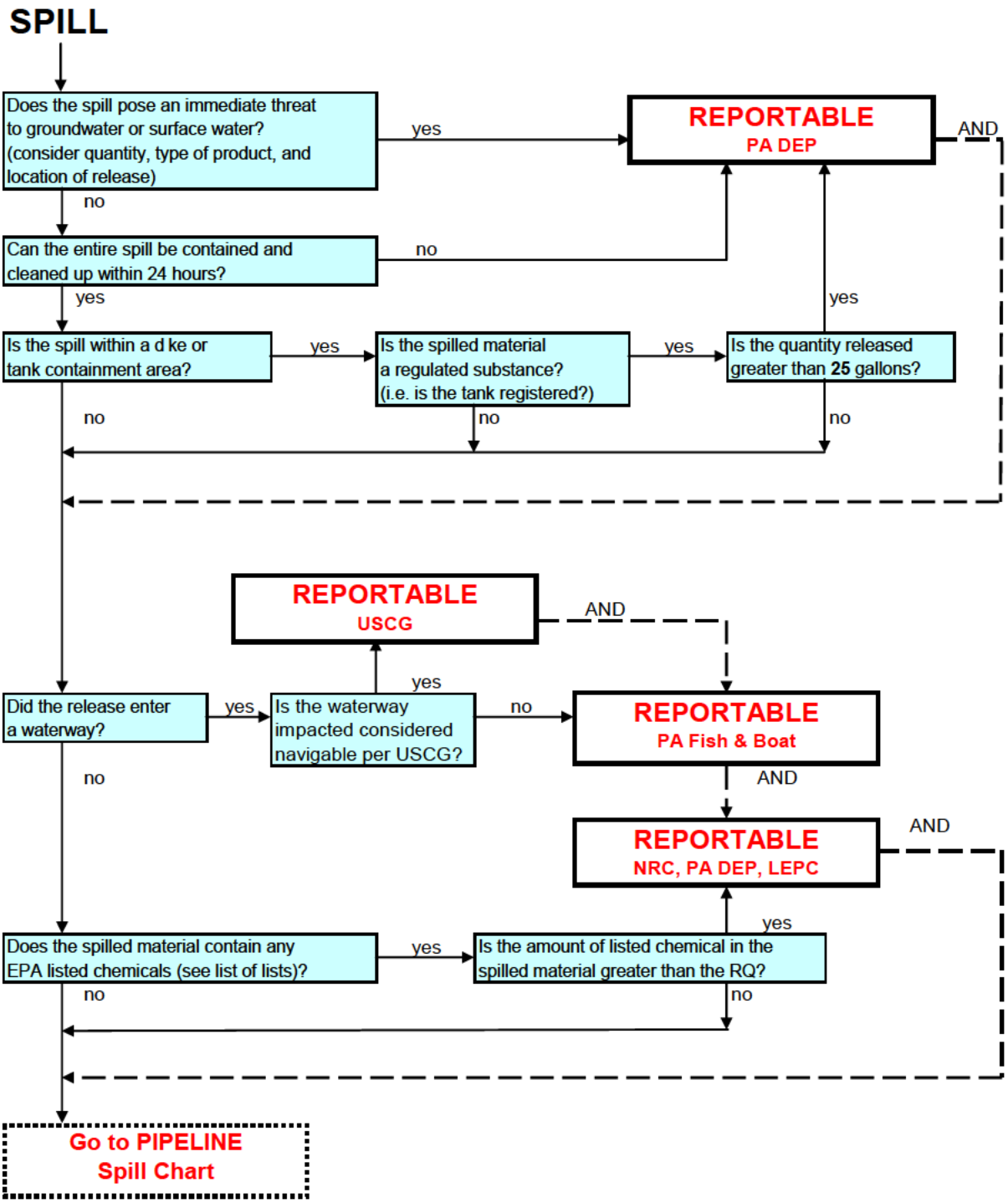


Figure 2.1.1

Pennsylvania Reporting Requirements

NEW YORK

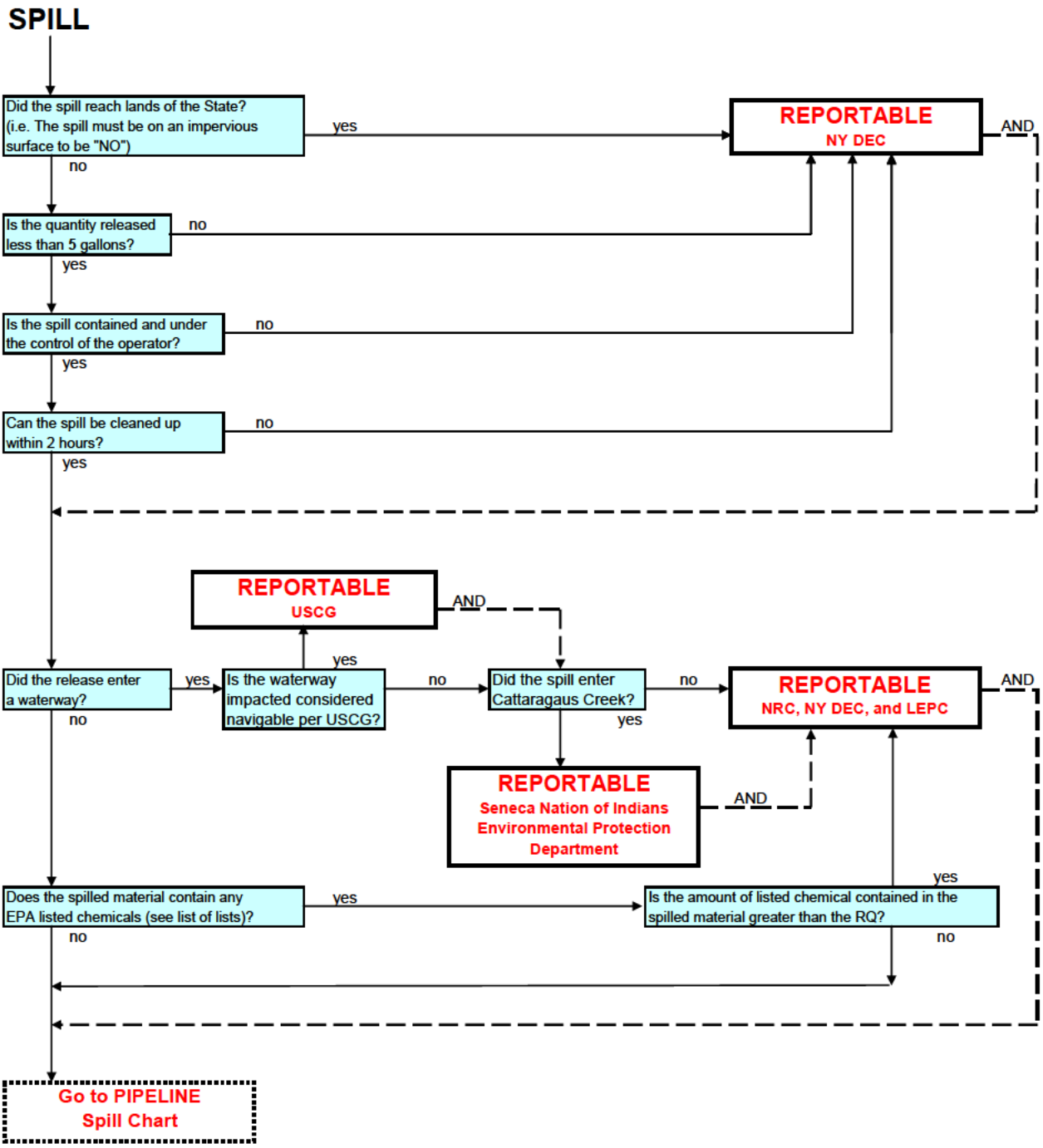


Figure 2.1.2
New York Reporting Requirements

PIPELINE

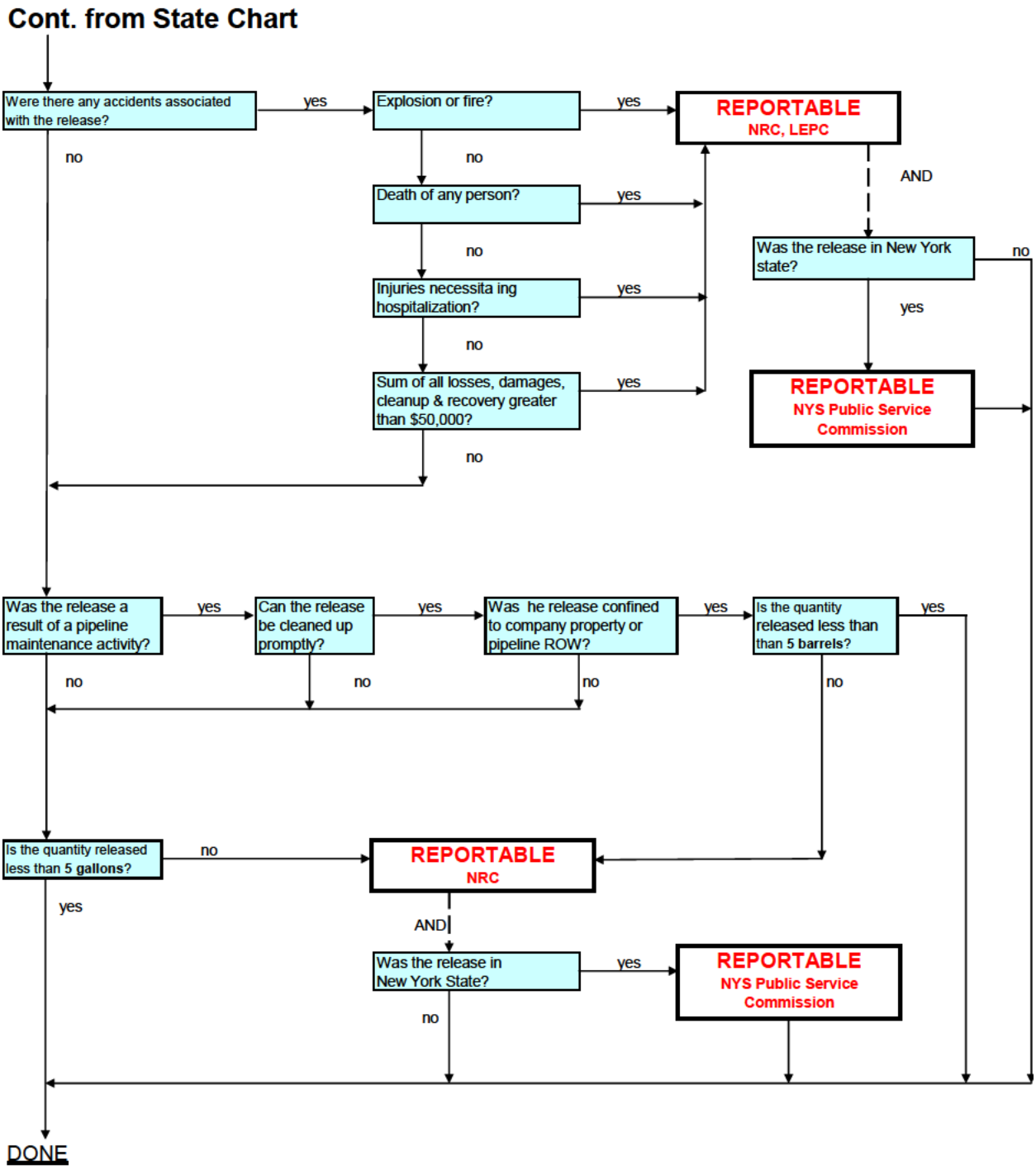


Figure 2.1.3
Pipeline Reporting Requirements

2.2 ACCIDENT DATA GATHERING & REVIEW TO DETERMINE CAUSE & PREVENT RECURRENCES

Whenever an event defined as an accident (ref. Section 2.1) occurs on Kiantone facilities, the Kiantone Pipeline manager or designate will gather relevant data for the purpose of:

- Investigating and determining the cause of the accident.
- Reporting the accident.
- Taking steps to ensure a similar accident does not re-occur.
- Ensuring O&M procedures are complete and effective (ref. Section 1.6).

Access to Records & Data

If the Department of Transportation investigates an accident, Kiantone will make available to the representative of the Department all records and information that pertain to the accident, and will provide reasonable assistance in the investigation of the accident.

Forms

Kiantone Accident Investigation, Form 2.2.1.

Kiantone Post-Accident Review, Form 2.2.2.

Procedures

Data Gathering & Review from Accidents, Procedure 2.2.1

2.3 TELEPHONIC NOTICE OF ACCIDENTS

The designated incident reporter should collect as much data as possible about an incident prior to reporting, but must not delay reporting if all data is not readily available. All notifications should be conducted as early as practicable, but not later than 2 hours from the time of the incident.

Prior to notification, the incident reporter will have ready the following minimum information to complete the telephonic report:

- Name and address (including county) of Kiantone Pipeline.
- Name and telephone number of the reporter.
- The location and time of the failure.
- The extent of any damage.
- An estimate of the amount of crude oil released.
- Details about fatalities and personal injuries, if any.
- All other significant facts known by Kiantone Pipeline to be relevant to the cause of the failure or extent of the damage.
- All actions taken to correct, control, or mitigate the incident

This information should be documented on the DOT Telephonic Report, Form 2.3.1, prior to reporting to ensure data reported to multiple agencies is consistent.

Telephone Contact Information

The NRC telephone number for accident reporting is: 800-424-8802 (National Response Center.) Kiantone will obtain an NRC Report Number from the DOT during the telephonic notification, and use the Report Number for any subsequent telephonic communications.

Other agency contact information is included on the DOT Telephonic Report, Form 2.3.1. Spill numbers, times/dates reported, and persons contacted should also be documented on this form.

Follow-Up Telephonic Notifications

Kiantone may also perform follow-up telephonic notifications:

- Periodically, during the emergency response phase of the accident, to keep the DOT up to date with on-scene activities; or
- If there are any significant changes in the data that were first reported. For example, if the release estimate changed from 50 barrels to 500 barrels, this would be a significant change and would require a follow-up call to the DOT.

For all follow-up reports, Kiantone will advise the DOT operator of the NRC Report Number, and reinforce that this is a follow-up report, and not a new report.

Forms

DOT Telephonic Report, Form 2.3.1.

2.4 ACCIDENT REPORTING & FILING

Kiantone will report accidents (ref. Section 2.1) to the DOT initially by calling the NRC at 800-424-8802. A written follow-up report must be filed online at:

http://pipelineonlinereporting.phmsa.dot.gov/

This online report uses Form 7000-1 Accident Report found in the Forms section of this procedure manual. The DOT ***requires*** that this form is filed ***online***.

Accident Type	Online Report to DOT	Telephonic Notice
1. Explosion or fire not intentionally set by Kiantone Pipeline Corp.	Yes – within 30 days	Yes – at earliest practical moment
2. A release of five or more gallons of crude oil.	Yes – within 30 days	Yes – at earliest practical moment
3. Death of any person, or personal injury necessitating hospitalization.	Yes – within 30 days	Yes – at earliest practical moment
4. Estimated property damage, including cost of clean-up and recovery, value of lost product, and damage to Kiantone property or others, or both, exceeding $50,000.	Yes – within 30 days	Yes – at earliest practical moment
5. Pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines.	No	Yes – at earliest practical moment
6. Any other release, which in the judgment of KPL, is significant even though it may not meet the criteria of any other paragraph of Part 195 Subpart B.	No	Yes – at earliest practical moment

Figure 2.4.1

Accident Reports

Significant Changes

If Kiantone becomes aware of significant changes in the information reported in an online report, or of additions to the original report, it will amend the report online at http://pipelineonlinereporting.phmsa.dot.gov/ within 30 days.

Accidents That Are Emergencies

Kiantone will respond to accidents meeting the definition of an emergency by following its emergency response procedures (ref. Chapter 19 of this manual).

Employee Injury

In the event of employee injury, the following URC procedures may be applicable to Kiantone:

- AG-02 Incident Reporting
- FS-11 Employee Injury Investigation
- FS-03 Employee Lost Time Injury Status

Forms

Kiantone Accident Investigation, Form 2.2.1.

Kiantone Post-Accident Review, Form 2.2.2.

DOT Accident Report Form, 7000-1 (must file online)