RECOVERED OIL / WASTE MANAGEMENT PLAN HOUMA INCIDENT COMMAND

Version 3

INCIDENT NAME: **DEEPWATER HORIZON (MC 252) INCIDENT**

TYPE: **CRUDE OIL Spill**

SPILL – LOCATION: **MC 252**

SPILL – DATE/TIME: **22 April 2010 2215**

ENV. UNIT LDR.

PLAN SUBMITTED BY: **ENVIRONMENTAL UNIT**

PREPARED BY : **WASTE DISPOSAL TEAM**

Approved by:

RPIC- Mike Utsler 06/13/2010

FOSC- CDR Scott N. Zepp 06/14/2010

SOSC- [signature] 06/14/2010

COPY ORIGINAL

6/10/2010

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SECTION I INCIDENT BACKGROUND

This plan is written at the request of the Incident Commander, the U.S. Coast Guard (USCG) FOSC and the State of Louisiana SOSC. This plan will cover over-arching oil recovery and waste management issues relating to the incident which includes the following activities: oil skimmed off of the water, oil collected from absorbents, decontamination *(Decontamination of vessels, equipment and personnel are addressed in the MC252 Vessel Evaluation & Decontamination Plan),* shore line impact cleanup, wildlife rehabilitation and other clean up operations. This plan is to cover oil spill clean-up activities that are managed out of the Houma Incident Command Center (ICC) and which are associated with the Deepwater Horizon rig incident where the source point originated in Mississippi Canyon Block 252 of the Gulf of Mexico.

BP will abide by all applicable state, local and federal laws and regulations while implementing this plan.

SECTION II MATERIAL/WASTE IDENTIFICATION

The following identified categories of wastes/materials are covered in this plan and will be managed according to their waste types. Volumes of these types of wastes will be difficult to determine due to circumstances associated with the MC 252 response. The ICS 209 form will be updated daily to reflect the collection, storage and disposition volumes of waste identified on that form. (**See Appendix D**).

Table below includes guidance from the Louisiana State Second Amended Declaration of Emergency and Administrative Order:

	Material Type / Waste Stream	State	Disposal/ Reclaim/Recycle Option
Disposable Oil Booms – Oil has been removed to the extent practical	Solid waste / Industrial Waste	Solid	Dispose of at a DEQ permitted Type I landfill
Containment booms – Final disposal - Oil has been removed to the extent practical			
Oil contaminated rags, gloves, disposable personal protective equipment, etc			
Oil contaminated debris			
Tar balls / tar patties			
Oil contaminated Soils and Vegetative Debris	E&P waste, waste type 16* Crude oil Spill clean-up waste	Solid	Dispose of at DNR permitted transfer station or commercial facility site or at DEQ-permitted type I landfill
Containment booms – Wash-off waste fluids and solids not contaminated with hazardous waste	E&P waste, waste type 16* Crude oil Spill clean-up waste	Liquid	Dispose of at DNR permitted site
Oily wastewater not contaminated with hazardous waste			
Dead Wildlife	Dept. of Wildlife and Fisheries	Solid	This will be managed by the Dept. of Wildlife and Fisheries and will only be managed as a waste, if and when directed by that agency
Oil removed from booms	Waste type 50*, salvageable hydrocarbons bound for permitted salvage oil operators OR E&P waste, waste type 16* Crude oil Spill clean-up waste	Liquid	Dispose of at DNR permitted site

Other materials/waste that can be expected:

	Material Type / Waste Stream	State	Disposal/ Reclaim/Recycle Option
Crude oil skimmed/collected from the water and spill source OR Oil removed from booms	Reclaimable/Recyclable oil, E&P Waste	Liquid	Recover Oil
Medical waste associated with wildlife rehabilitation or staging areas	Special Waste (Wildlife Group)	Solid	DEQ-permitted type I landfill
First Aid Station waste (Bandages and items with possible blood borne pathogens)	Medical Waste (First Aid)	Solid	Dispose of an approved medical waste facility
Left over water samples (water, oil and reagents) managed by contractors	Non-hazardous & Potential Hazardous Laboratory Analysis Waste	Mixed	Approved disposal facility
Potential hazardous waste collected as part of oil spill clean up operations	Potential hazardous waste	Liquid/Solid/Mixed	Approved disposal facility
Uncontaminated Trash (Food waste, wrappings, paper, cardboard, soda cans, beach pre-cleanup waste)	Municipal Trash	Solid	Dispose of municipal waste facility
Plastic bottles and aluminum cans	Recyclables	Solid	Recycling Facility

* Waste Identification code on Exploration and Production (E&P) Shipping Control Ticket UIC 28 manifest.

A sampling plan will be developed, indicating items such as test methods and sampling frequency, to characterize industrial solid waste streams per 40 CFR part 262.11. Municipal and E&P exempt wastes will be characterized and managed pursuant to applicable State and local requirements. A quality assurance project plan for this sampling effort will be developed. Sampling frequency shall be sufficient to monitor that waste is being characterized correctly.

Analysis of waste will include that which is needed to confirm the waste determination for industrial solid waste streams. Based on knowledge of the wastes involved and State of Louisiana hazardous waste regulations, wastes will be analyzed for TCLP metals, TCLP benzene and flashpoint as appropriate. Additional analyses to meet municipal/industrial disposal facility requirements will be performed as specified by the disposal facility permit. Waste analysis results will be summarized in a table and made available to regulatory agencies.

SECTION III WASTE MANAGEMENT APPROACH

Given the complexity of the anticipated landfall of this material and various staging areas the plan is designed to allow for the crude oil contaminated material to be disposed of at E&P exempt facilities as appropriate under the authority of the Louisiana DNR, and permitted industrial solid waste disposal facilities regulated under the authority of the Louisiana DEQ.

Waste management guidance is included in Appendix B of the "Second Amended Declaration of Emergency and Administrative Order" dated May 17, 2010. This Emergency and Administrative Order is included in **Appendix C**. Each staging area will have predetermined approved locations to take each material. The approved facilities, profiling requirements including sampling requirements are included in **Appendix A** (Approved Facilities (Houma IC)).

The locations of currently used and proposed staging areas, final disposal facilities and recovery, reuse and recycling facilities will be reviewed and approved by IC. Federal and state regulatory agencies will be notified in advance if new locations are proposed.

A copy of the Approved IC Waste Management Plan will be available for each staging area. Additional applicable plans such as the Decontamination, Site Safety Plan, SPCC and Heritage SOP will also be maintained at each staging area.

Any waste identified as hazardous will be managed accordingly and sent to an approved hazardous waste facilities. LDEQ approved federal issued EPA # LAR000070649 for the spill.

Heritage Environmental is the selected contractor charged with the proper handling of wastes identified in this plan. Heritage has been tasked with the following activities:

- Sourcing containers and transportation at the decontamination/staging areas.
- Segregating, labeling and correctly storing materials/waste at the decontamination/staging areas.
- Sampling containers in order to characterize wastes, as needed. This includes periodic maintenance sampling.
- Completing profiles at approved disposal sites (See **Appendix A** Approved Facilities (Houma IC))
- Completing appropriate shipping documentation for materials/waste sent offsite for Reclaim/Recycle or Disposal.
- Tracking of volumes collected and transported.

In addition to the above Heritage responsibilities, BP has authorized and delegated Heritage to sign shipping documents. The Shipping Documents Signature Delegation Agreement is **Appendix B** of this plan.

BP will strive to minimize the impacts of waste management logistics and waste management operations on communities near operations to the extent required by applicable legal requirements. Planning may include the following based on information provided by EPA:

- Analysis of socio-economic demographic data within close proximity to operations
- Evaluation of any potential impacts on sensitive populations.
- Evaluation of any pre-existing community concerns and regulatory enforcement history

SECTION IV. MATERIAL RECOVERING / WASTE HANDLING

BP has an overall strategy to reclaim or recycle as much materials/oil as practical prior to sending the material for disposal. The following actions are anticipated to occur in handling this recovered material.

1. Reasonable efforts will be made to recover oil prior to disposal. Removed liquids will be managed in vacuum tanks and frac tanks for possible reclamation or recycle.
2. Segregate materials and waste streams, as much as practical, into the categories listed in Section II and **Appendix A**
3. Designated Heritage Waste Coordinator at each staging area will label containers appropriately with "BP MC 252 Event", material type and start date of accumulation.
4. Upon arrival of materials to the dock or shoreline, operations will contact the closest Waste Coordinator to request container or location of collection area. See **Appendix A**, and Section V for details of locations.
5. Industrial, hazardous and E&P wastes for disposal in landfill will be profiled and signed by BP or delegated Heritage Waste Coordinator as authorized by BP Waste Specialist with the appropriate receiving Reclaim/Recycle or Disposal facility prior to shipment offsite.
6. All Shipping documentation (non-hazardous or hazardous manifests, Louisiana UIC 28 E&P waste shipping control tickets, bill of lading and others) will be completed according to State and Federal requirements.
7. Heritage Waste Coordinator will track all shipping documents on behalf of BP
8. Materials volumes will be tracked on the ICS 209 form.
9. Options will be continuously evaluated and considered for oil recovery/re-use and reclaim/recycle or disposal of other materials.

Best Management Practices:

- Each staging area will be equipped with a sufficient supply of DOT-approved roll-off and frac containers and with sufficient back-up DOT-approved containers.
- Additional staging areas will be identified and equipped as needed. LDEQ is monitoring staging areas activities.
- All roll-off containers will have liners, and for extra precaution absorbent material will be placed at the door seams.
- Frac tanks and roll-off containers will have spill containment. If 55 gallon containers are used, they will also be DOT approved, covered at all times when not in use and have secondary containment.
- All liquids, such as oily water, decontamination water and stormwater, will be transported by vacuum tanks and staged in frac tanks.
- Spill Control and Countermeasures Plans are under development for those sites subject to 40 CFR 112.1 and LAC 33:IX. 903.
- Once material begins to be accumulated within a container, the container shall be clearly labeled with the appropriate material type or waste stream and with the accumulation start date. The label indicating what is within the container shall remain in place and legible. Once accumulation begins within a container the Heritage Waste Coordinator shall arrange to have the backup container in place. All measures will be taken to ensure we have no less than two days worth of containers on site for each material type or waste stream.

- Upon receiving the material or waste at the staging area, BP and Heritage Waste Coordinator will place or supervise the placement of the material or waste into the appropriate containers.
- At all times, containers will be covered (tarped) when not in use. When applicable, storage time of roll-off containers (when full) will not exceed Louisiana DEQ storage requirements, however waste will be removed as quickly as possible.
- Once a container is considered full, the Heritage personnel shall ensure that the container is properly covered and labeled for transportation. Transportation shall be arranged by the Heritage waste coordinator. All shipping documents will be prepared and signed by BP personnel or their authorized Heritage designees.
- Each staging area will be manned with at least one each of the following people during operating periods:
    - Staging Manager
    - Security Personnel
    - Safety Representative
    - Heritage Environmental Waste Coordinator

  Other personnel will be available according to the staging area operations.

Only contracted BP clean-up contractors shall be allowed to bring materials or waste to the staging areas. If others attempt to deposit non-spill related materials or waste at the staging areas they shall be immediately turned away by security personnel.

SECTION V STAGING AREAS

The following staging areas are currently identified and may change frequently upon clean-up conditions in the locales needed the most.

Location	Adress	Heritage Contact Information
Grand Isle (Jefferson Parish)	103 Caminada Ln Grand Isle, LA 70358	Eric MacMillen/Alternate TBD 985-533-6543
Lafitte (Jefferson Parish)	4932 Kenal Road Lafitte, LA 70067	Adam Fruget/Alternate TBD
Fourchon (LaFourche Parish)	570 Dudley Bernard Golden Meadow, LA 70357	Sarah VanMeter/Alternate TBD 985-533-6542
Venice (Plaquemine Parish)	339 Coast Guard Rd Venice, LA 70091	Tom Brincefield/Alternate TBD 985-533-6535
Hopedale (St. Bernard Parish)	7222 Hopedale Highway Hopedale, LA 70085	Dan Hans/Alternate TBD 985-533-6522
Berwick (St. Mary Parish)	4212 Bellview Front Berwick, LA 70342	John Dillon/ Dallas Hodge 985-519-4840
Franklin (St. Mary Parish)	8000 Hwy. 357 Franklin, LA 70538	Doug Bowers 985-533-6192
Slidell Area (St. Tammany Parish)	Hwy 90 @ LA/MS	Camille Bright/Chris Eringer 985-533-6534 bpprojectslidell@heritage-enviro.com
Houma IC (Terrebonne Parish)	1597 Hwy 311 Schriever, La 70395	Ricky Belk 918-629-1324 Scot Lawson 419-466-7571 David Bush 281-380-2217
Cocodrie (Terrebonne Parish)	106 Pier 56 CoCoMarina Chauvin, LA 70344	Billy Farris/John Dillon 985-533-6525
Dulac (Terrebonne Parish)	9202 Grand Caillou Rd Dulac, LA 70353	Shawn Taran/Alternate TBD 314-575-2404
Port-Aux-Chenes (Terrebonne Parish)	1650 Hwy 665 Montegut, LA 70377	Billy Farris/Alternate TBD 985-553-6525
InteraCoastal (Vermilion Parish)	25817 Louisiana Hwy 333 Abbeville, LA 70510	Brandon Christ 337-523-6591
Horseshoe (St. Mary Parish)	8000 Hwy 357 Franklin, LA 70538	Doug Bowers 985-533-6192

The currently approved reclaim/recycle and disposal facilities are identified in the attached **Appendix A**.

SECTION VI PERIODIC MAINTENANCE SAMPLING

Representative samples will be collected from waste streams that have been profiled with a permitted facility according to the schedule in **Appendix A**. Samples from waste streams that require sampling will be collected in sufficient quantity to characterize the separate waste categories. Where solids or waste materials are encountered, composite samples should be collected on the assumption that they will provide a more representative sample that is not homogeneous.

SECTION VII TRANSPORTATION

Approved transporters will be used from the staging areas identified in section V to the approved destination facilities identified in **Appendix A**. All transporters of recovered oil, waste and other materials generated as a result of the oil spill will be registered solid waste transporters with the LDEQ.

SECTION VIII FINAL DISPOSITION OR DISPOSAL

The ICS 209 form **(Appendix D)** will be used to track the disposition of wastes and recovered product as it relates to this incident. Manifest tracking will be used at each staging area and rolled up to one combined at the Houma Incident Command Environmental Unit by Heritage Environmental. Additional detailed information on waste collection and disposal will be made available to State and Federal Agencies.

SECTION IX HEALTH AND SAFETY CONSIDERATIONS

Health and Safety considerations will be covered under the Site Safety Plan at each of the staging areas. Employees handling waste are HAZWOPER and DOT trained. Along with the site safety plans, a detailed decontamination plan addresses the concerns of decontamination and the transfer of this material to a recovered product or waste that is addressed in this plan.

Only contracted BP clean-up contractors shall be allowed to bring materials or waste to the staging areas. If others attempt to deposit non-spill related waste at the staging areas they shall be immediately turned away by security personnel.

SECTION X QUALITY ASSURANCE

Waste management oversight at staging area operations will be performed out of the Houma Incident Command Environmental Unit. Routine call ins and site visits will occur at each site for collection of waste/recovery volumes, general flow of material, and any other issues that may arise from the operations of managing these areas as it relates to waste.

Heritage will perform daily and weekly inspections to ensure containers are covered when not in use, secondary containment is being used and that liners are being used. Additionally, a BP HSE tag is stationed at each staging area to ensure the staging areas are managed properly.

SECTION XI COMMUNITY RELATIONS

Community relations are vital to properly manage any community issues or concerns that arise in connection with handling wastes associated with MC 252 incident. With this in mind, BP is participating in the Unified Command's Community Outreach program through Public Meetings held in every affected parish. BP representatives will be available for questions from the public, hand out information about the Waste Program, and work in concert with the Unified Command of BP, US Coast Guard (USCG), and the State of Louisiana. BP is also working with federal, local and state agencies of EPA, DEQ and DNR to ensure proper transport and disposal of wastes.

The Community Outreach Program (CO) will provide communities and local governments with information about (i) current and proposed disposal and staging sites; (ii) a description of the process to evaluate disposal sites; and (iii) public availability of information throughout the operations, for example EPA and BP's Gulf of Mexico Response websites (http:// www.BP.com/GulfOfMexico**Response**). In addition, information will be posted at each staging area describing operations, potential hazards as it relates to oil spill material, and contact information for further questions.

BP will minimize community impacts due to the disposition of wastes by ensuring that disposal facilities are State permitted and have been audited per company requirements. Additionally staging areas are also being inspected and permitted by the State of Louisiana to ensure that environmental regulations are being addressed.

To the extent feasible, BP shall consider the impacts on minority and low income populations when selecting future staging areas. BP will demonstrate a strong commitment to address environmental justice challenges and the disproportionate environmental burdens placed on low-income and minority communities as required by applicable legal requirements.

BP shall maintain and post on the Gulf of Mexico Response website a waste diagram identifying the major points of operation that generate waste and the paths of waste movement to disposal/recovery for each waste stream.

SECTION XII PLAN SUBMITTAL AND REVISION

Submitted by:

Tracy Dyer **DATE:** June 2, 2010

Developed by: Tracy Dyer Revised: 4/22/10 03:30
Version 1
Updated by: Jerry Harrington Revised: 4/23/10 15:45
Version 2
Updated by: Kathy McCormick Revised: 6/10/10 22:00
Version 3

APPENDIX A

Approved Facilities (Houma IC)

Approved	Pending

Appendix A
Approved Facilities (Houma IC)
Waste Disposal Plan - Last Updated 6/6/2010

From the LDEQ & DNR Deepwater Horizon Oil Spill Waste Management guidance

Material Type / Waste Stream	State	Description	Disposal/ Reclaim/Recycle Option	Management/ Containment	Container Labeling	Manifesting	Facility	Sampling requirements	Approval/Profile Number
Solid waste / Industrial Waste	Solid	Disposable Oil Booms – Oil has been removed to the extent practical	Dispose of at a DEQ permitted Type I landfill	Place in marked container/roll off box or cutting box that is lined & covered.	Non hazardous label - Oily debris	Non hazardous manifest	Colonial Landfill (Allied Waste) 5328 Hwy 70 Sorrento, LA 70778	Sample Monthly	5098-10-6238
		Containment booms – Final disposal - Oil has been removed to the extent practical					Jefferson Davis Parish (Allied Waste) 16547 Landfill Rd Welch, LA 70591	Sample Monthly	5103-10-6451
		Oil contaminated rags, gloves, disposable personal protective equipment, etc					River Birch Landfill 2000 S Kenner Road Avondale, LA 70094	Sample Monthly	5501
		Oil contaminated debris					Tide Water Landfill LLC (Environmental Operators LLC) Coast Guard Road Venice, LA	Sample Monthly	10194
		Tar balls / tar patties					Jefferson Parish / Waste Management 5800 US 90 Westwego, LA 70094	Sample Monthly	531143LA
		-					WM Pecan Grove 9685 Firetower Road Pass Christian, MS 39571	Sample Monthly	TBD
E&P waste, waste type 16 Crude oil Spill clean-up waste	Solid	Oil contaminated Soils and Vegetative Debris	Dispose of at DNR permitted transfer station or commercial facility site or at DEQ-permitted type I landfill	Place in marked container/roll off box or cutting box that is lined & covered.	Non hazardous label - Oily debris	Louisiana UIC 28 E&P waste shipping control ticket or non hazardous manifest	River Birch Landfill 2000 S Kenner Road Avondale, LA 70094	No sampling required.	Not applicable
E&P waste, waste type 16 Crude oil Spill clean-up waste	Liquid	Containment booms – Wash-off waste fluids and solids not contaminated with hazardous waste	Dispose of at DNR permitted site	Frac tanks	Non hazardous label - Oily Water	Louisiana UIC 28 E&P waste shipping control ticket	Newpark Environmental Fourchon #2 Site Code 2913 228 16th Street Fourchon, LA 70357	No sampling required.	Not applicable
		Oily wastewater not contaminated with hazardous waste					Newpark Environmental Venice Mud Facility 213 Coast Guard Rd Venice, LA 70090	No sampling required.	Not applicable
		-					Newpark Environmental Morgan City Site Code 5102 101 Second Street Morgan City, LA 7038	No sampling required.	Not applicable

		-					River Birch Landfill 2000 S Kenner Road Avondale, LA 70094	No sampling required.	Not applicable
Dept. of Wildlife and Fisheries	Solid	Dead Wildlife	**This will be managed by the Dept. of Wildlife and Fisheries and will only be managed as a waste, if and when directed by that agency**	Place in marked container/roll off box or cutting box that is lined & covered.	Non hazardous label - Oily debris	Non hazardous manifest	Tide Water Landfill LLC (Environmental Operators LLC) Coast Guard Road Venice, LA	Sample Monthly	10194
							Colonial Landfill (Allied Waste) 5328 Hwy 70 Sorrento, LA 70778	Sample Monthly	5098-10-6238
							Jefferson Davis Parish / Allied Waste 16547 Landfill Rd Welch, LA 70591	Sample Monthly	5103-10-6451
							River Birch Landfill 2000 S Kenner Road Avondale, LA 70094	Sample Monthly	5501
Waste type 50, salvageable hydrocarbons bound for permitted salvage oil operators OR E&P waste, waste type 16 Crude oil Spill clean-up waste	Liquid	Oil removed from booms	Dispose of at DNR permitted site	Frac tank or barge	Waste type 50, salvageable hydrocarbons bound for permitted salvage oil operators OR Waste type 16 Crude oil Spill clean-up waste	Louisiana UIC 28 E&P waste shipping control ticket	Newpark Environmental Cameron Site Code 1205 434 Davis Road Cameron, LA 7063	No sampling required.	Not applicable
							Newpark Environmental Site Code STF001 Transfer Facility 2725 Garrett Road Ingleside, TX 78362	No sampling required.	Not applicable
							Newpark Environmental Morgan City Site Code 5102 101 Second Street Morgan City, LA 7038	No sampling required.	Not applicable
							Newpark Environmental Fourchon #1 Site Code 2910 145 17th St. Golden Meadow, LA 70357	No sampling required.	Not applicable
							Newpark Environmental Fourchon #2 Site Code 2913 228 16th Street Fourchon, LA 70357	No sampling required.	Not applicable
							Newpark Environmental Intercoastal City Code 5703 12334 Offshore Road Abbeville, LA 70510	No sampling required.	Not applicable
							PSC Industrial Outsourcing, Inc 9523 Highway 87 East Jeanerette, LA 70544	No sampling required.	Not applicable
							Newpark Environmental Services Permit Code STF001 8300 Pleasure Islet Drive Port Arthur, TX 77643	No sampling required.	Not applicable

Other materials/waste that can be expected

Reclaimable/Recyclable oil, E&P Waste	Liquid	Crude oil skimmed/collected from the water and spill source OR Oil removed from booms	Recover Oil	Frac tank or barge	N/A	TBD	Acadian Oil & Environmental 226 Daspit Rd New Iberia, LA 70563	No sampling required.	Not applicable
							Dunhill Terminals 500 Viaduct Rd Mobile, AL 36611	No sampling required.	Not applicable
							Flextank 16514 A DeZavala Rd Channelview, TX 77530	No sampling required.	Not applicable
							APEX Environmental 7455 Rangeline Road Theodore, AL 36582	No sampling required.	Not applicable
							FCC 14890 Intracoastal Drive New Orleans, La 70129	No sampling required.	Not applicable
							United Environmental Services, LLC 8010 Needlepoint Road Baytown, TX 77521	No sampling required.	Not applicable
							PSC Industrial Outsourcing, Inc 9523 Highway 87 East Jeanerette, LA 70544	No sampling required.	Not applicable
							USA Environmental	No sampling required.	Not applicable
							BP Texas City Refinery	No sampling required.	Not applicable
							Aaron Oil 713 Bill Myles Drive Saraland, AL 36571	No sampling required.	Not applicable
Special Waste (Wildlife Group)	Solid	Medical waste associated with wildlife rehabilitation or staging areas	DEQ-permitted type I landfill	Place in marked container/roll off box or cutting box that is lined & covered.	Non hazardous label	Non hazardous manifest	Same as facilities used for Dead Wildlife	Same as facilities used for Dead Wildlife	Same as facilities used for Dead Wildlife
Medical Waste (First Aid)	Solid	First Aid Station waste (Bandages and items with possible blood borne pathogens)	Dispose of an approved medical waste facility	Biohazard Containers	Medical Waste	Bill of Lading	Stericycle 517 West 19th Street Reserve LA 70084	No sampling required.	Not applicable
Non-hazardous & Potential Hazardous Laboratory Analysis Waste	Mixed	Left over water samples (water, oil and reagents) managed by contractors	Approved disposal facility	Varies pending contents and characterization	Varies pending contents and characterization	Varies pending contents and characterization	Varies pending contents and characterization	Sampling requirements varies	TBD
Potential hazardous waste	Liquid/Solid/Mixed	Potential hazardous waste collected as part of oil spill clean up operations	Approved disposal facility	Varies pending contents and characterization	Varies pending contents and characterization	Varies pending contents and characterization	Varies pending contents and characterization	Sampling requirements varies	TBD
Municipal Trash	Solid	Uncontaminated Trash (Food waste, wrappings, paper, cardboard, soda cans, beach pre-cleanup waste)	Dispose of municipal waste facility	Place in marked container/roll off box	N/A	Non hazardous manifest	River Birch Landfill 2000 S Kenner Road Avondale, LA 70094	No sampling required.	Not applicable
							Tide Water Landfill LLC (Environmental Operators LLC) Coast Guard Road Venice, LA	No sampling required.	Not applicable

							Colonial Landfill (Allied Waste) 5328 Hwy 70 Sorrento, LA 70778	No sampling required.	Not applicable
							Jefferson Davis Parish (Allied Waste) 16547 Landfill Rd Welch, LA 70591	No sampling required.	Not applicable
							Jefferson Parish (Waste Management) 5800 US 90 Westwego, LA 70094	No sampling required.	Not applicable
							WM Pecan Grove 9685 Firetower Road Pass Christian, MS 39571	No sampling required.	Not applicable
Recyclables	Solid	Plastic bottles and aluminum cans	Recycling Facility	Place in marked container/roll off box	N/A	Non hazardous manifest	Colonial Landfill (Allied Waste) 5328 Hwy 70 Sorrento, LA 70778	No sampling required.	Not applicable

Last Revised
Tracy Dyer Revised 6/6/10 16:30

APPENDIX B

Waste Manifest Signature Delegation Agreement

bp

June 11, 2010

Mr. Barry R. Legg
National Account Manager
Heritage Environmental Services, LLC
15330 Canal Bank Road
Lemont, IL 60439

RE: Deepwater Horizon (MC 252) Incident- Waste Manifest Signature Delegations

Heritage Environmental Service (Heritage) is currently providing a variety of waste management services for BP Exploration and Production Inc. (BPEXP) as it relates to the spill response and clean up activities from the MC 252 Rig incident. These services range from sampling and analytical work to shipping and ultimate final management of a range of wastes generated by BPEXP.

Due to the emergency circumstances of the MC 252 incident response and the expansion of additional staging and decontamination areas, BP is working to ensure that waste management issues are handled efficiently and effectively. As such, BP hereby authorizes signatory delegation to designated Heritage personnel/roles as listed in the Attachment to this agreement. The Attachment to this agreement will be updated periodically as new staging areas and decontamination areas are identified. The Attachment will be updated accordingly and will be effective when updated as a supplemental attachment to this Agreement.

Thank you for your support to BPEXP. If you have any questions or comments please feel free to contact Tracy Dyer at 281-366-1233. If Heritage is in agreement with the foregoing, please sign in the appropriate place below and return one of the two original copies of the Letter Agreement to the undersigned.

Sincerely,

Mike Condon
Environmental Unit Leader
Deepwater Horizon (MC 252) Incident

Accepted and agreed to as of this 11th. day of June, 2010

Heritage Environmental Services, LLC

By: _____

Printed Name: RICKY BECK

Title: OPS Mgr.

Attachment

Heritage Personnel Listed by Staging Area

The following staging areas are currently identified and may change frequently upon clean-up conditions in the locales needed the most.

Location	Adress	Heritage Contact Information
Grand Isle (Jefferson Parish)	103 Caminada Ln Grand Isle, LA 70358	Eric MacMillen/Alternate TBD 985-533-6543
Lafitte (Jefferson Parish)	4932 Kenal Road Lafitte, LA 70067	Adam Fruget/Alternate TBD
Fourchon (LaFourche Parish)	570 Dudley Bernard Golden Meadow, LA 70357	Sarah VanMeter/Alternate TBD 985-533-6542
Venice (Plaquemine Parish)	339 Coast Guard Rd Venice, LA 70091	Tom Brincefield/Alternate TBD 985-533-6535
Hopedale (St. Bernard Parish)	7222 Hopedale Highway Hopedale, LA 70085	Dan Hans/Alternate TBD 985-533-6522
Berwick (St. Mary Parish)	4212 Bellview Front Berwick, LA 70342	John Dillon/ Dallas Hodge 985-519-4840
Franklin (St. Mary Parish)	8000 Hwy. 357 Franklin, LA 70538	Doug Bowers 985-533-6192
Slidell Area (St. Tammany Parish)	Hwy 90 @ LA/MS	Camille Bright/Chris Eringer 985-533-6534 bpprojectslidell@heritage-enviro.com
Houma IC (Terrebonne Parish)	1597 Hwy 311 Schriever, La 70395	Ricky Belk 918-629-1324 Scot Lawson 419-466-7571 David Bush 281-380-2217
Cocodrie (Terrebonne Parish)	106 Pier 56 CoCoMarina Chauvin, LA 70344	Billy Farris/John Dillon 985-533-6525
Dulac (Terrebonne Parish)	9202 Grand Caillou Rd Dulac, LA 70353	Shawn Taran/Alternate TBD 314-575-2404
Port-Aux-Chenes (Terrebonne Parish)	1650 Hwy 665 Montegut, LA 70377	Billy Farris/Alternate TBD 985-553-6525
InteraCoastal (Vermilion Parish)	25817 Louisiana Hwy 333 Abbeville, LA 70510	Brandon Christ 337-523-6591
Horseshoe (St. Mary Parish)	8000 Hwy 357 Franklin, LA 70538	Doug Bowers 985-533-6192

The currently approved reclaim/recycle and disposal facilities are identified in the attached

APPENDIX C

Second Amended Declaration of Emergency and Administrative Order Environmental Agency Interest No. 170547

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Second Amended Declaration of Emergency and Administrative Order

British Petroleum – Deepwater Horizon
Agency Interest No. 170547

May 17, 2010

CONTENTS

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

AGENCY INTEREST NO. 170547

IN THE MATTER OF
BRITISH PETROLEUM-DEEPWATER HORIZON
OIL SPILL

SECOND AMENDED DECLARATION OF EMERGENCY AND ADMINISTRATIVE ORDER

Pursuant to the authority granted to me by Louisiana Revised Statutes 30:2001 *et seq.*, and particularly La. R.S. 30:2033 and 2011(D)(6), I hereby make the following findings, declaration and order, which supersede all previous declarations and orders in this matter.

FINDINGS AND DECLARATION

1. On the 20th day of April, 2010, the offshore drilling rig called the Deepwater Horizon exploded and caught fire, approximately 42 miles Southeast of Venice, Louisiana. On the 24th day of April, investigators discovered that oil was escaping from leaks in a drilling pipe approximately 5,000 feet below the surface.

2. By State of Louisiana Executive Proclamation, STATE OF EMERGENCY - Deepwater Horizon Oil Spill, the Governor declared on April 29, 2010, that a state of emergency exists in the state of Louisiana, as a result of the potential impact of oil leaking from the well site along the Louisiana coast, which has created emergency conditions that threaten the natural resources of the State, and the economic livelihood and property of the citizens of the State.

3. As of May 3, 2010, the oil leaks continued at an estimated rate of 210,000 gallons per day. The leaks have created an oil slick currently estimated to cover an area approximately 130 miles by 70 miles. This event will be referred to herein as "the Oil Spill."

4. I find that the Oil Spill has created conditions that require immediate action to prevent irreparable damage to the environment and serious threats to life or safety in Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, and Terrebonne Parishes. These parishes shall herein be referred to as the "Emergency Areas."

5. This incident is referred to as "Mississippi Canyon 252" by the U.S. Coast Guard.

WHEREFORE, I hereby declare that an emergency exists, and that the following measures are necessary to prevent irreparable damage to the environment and serious threats to life or safety in the Emergency Areas.

ORDER

Unless otherwise specified, each of the provisions below applies to every parish in the Emergency Areas.

§1 Solid Waste Management

a. Debris from the Oil Spill shall be managed in accordance with the LDEQ Comprehensive Plan for Disaster Clean-up and Debris Management ("the DMP") (revised July 1, 2009), attached hereto as Appendix A. (Section 9. "Final Disposal Options" addresses oil contaminated debris.)

b. All transporters of solid waste generated as a result of the Oil Spill must be registered with the Department. Information and forms are available on the LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/2886/Default.aspx.

c. Type I and Type I/Type II permitted facilities may accept industrial solid waste generated by the Oil Spill, regardless of permitted service area, provided a notification of intent to accept such industrial solid waste is submitted to the Department. The notification must be submitted to the Department three (3) days prior to accepting the waste.

d. Type I and Type I/Type II permitted facilities may request extended hours of operation and increased waste acceptance rates to facilitate recovery and clean-up efforts. The Department may approve such requests for the duration of this Order without the need for a permit modification.

e. Type I-A and Type I-A/Type II-A permitted solid waste processing facilities authorized to accept oil-contaminated industrial solid waste may accept industrial solid waste generated by the Oil Spill, regardless of permitted service area, provided a notification of intent to accept such industrial solid waste is submitted to the Department. The notification must be submitted to the Department three (3) days prior to accepting the waste.

f. Type I-A and Type I-A/Type II-A permitted solid waste processing facilities authorized to accept oil-contaminated industrial solid waste may request extended hours of operation and increased waste acceptance rates to facilitate recovery and clean-up efforts. The Department may approve such requests for the duration of this Order without the need for a permit modification.

g. In accordance with the DMP, burning of oil contaminated vegetative debris may be conducted, with approval by the parish and LDEQ. Pre-approved emergency debris management sites may be used for this purpose, if approved for that particular activity or debris type.

h. Wastes under Department of Natural Resources (DNR) jurisdiction should be disposed of in accordance with DNR rules, regulations, and/or emergency orders.

i. See Appendix B for a description of waste streams and their appropriate disposal or treatment options.

§ 2. Hazardous Waste

Hazardous waste generated as a result of the Oil Spill event must be separated from other Oil Spill generated waste and disposed of at a permitted hazardous waste disposal facility.

§ 3 Waste Water

Oily wastewater may be treated in permitted Centralized Waste Treatment facilities (CWT) that are authorized to treat oily wastewater. Additionally, for the purpose of handling and treating the large volumes of oily wastewater and other oil-contaminated wastes generated as a result of this emergency, LPDES-permitted CWT facilities may request authorization for supplemental storage and treatment operations. The Department may grant these authorizations for the duration of this Order without the need for a permitting action. Such requests shall be limited to tanks, containers and other similar units suitable for the proposed use. Such requests must be submitted to the Department's Office of Environmental Services, Waste Permits Division, Authorization from the Department shall be contingent upon the ability of the CWT facility to store and

treat in a manner that is protective of human health and the environment. Considerations shall include, but not be limited to, the following:

- location characteristics;
- waste treatment technology and capabilities;
- waste acceptance/rejection criteria;
- waste load screening;
- secondary containment;
- site security;
- personnel training;
- regular unit inspections;
- contingency planning;
- unit closure;
- recordkeeping;
- compliance with federal requirements, as applicable, including land disposal restrictions (LDR) and Spill Prevention Control and Countermeasures (SPCC); and
- any other information deemed necessary by the Department.

[Note: Authorization under this subsection is limited in scope to on-site waste management activities (i.e., storage and treatment). Requests for changes to the CWT's established LPDES effluent limitations must be submitted to the Department's Office of Environmental Services, Water Permits Division. Water discharging activities may be implemented after authorization; however, CWTs treating and discharging oily wastewater from the BP Deepwater Horizon Oil Spill shall notify the Water Permits Division prior to accepting oily wastewater from this oil spill and upon cessation of discharges activities associated with this oil spill.]

§ 4. Special Waste (Reuse and Recycle)

a. Every effort should be made to minimize the disposal of reusable and recyclable material in landfills. Diversion and recycling of debris are priorities.

b. All debris handlers should make every effort to properly handle and recover debris materials that have reuse value, are recyclable or the release of which into the environment would be detrimental or is prohibited.

§ 5. General Conditions

a. This Order does not convey any property rights or any rights or privileges other than those specified in this Order.

b. This Order only serves as relief for the duration of the Order from the regulatory and proprietary requirements of the LDEQ, and does not provide relief from the requirements of other federal, state, and local agencies. This Order therefore does not negate the need for any property owner or facility operator to obtain any other required permits or authorizations, nor from the need to comply with all the requirements of those agencies.

§ 6. General Limitations

The LDEQ issues this Order solely to address the emergency created by the Oil Spill. This Order shall not be construed to authorize any activity within the jurisdiction of the LDEQ except in accordance with the express terms of this Order.

§7. Other Authorizations Required

Nothing in this Order shall eliminate the necessity for obtaining any other federal, state, or local permits or other authorizations that may be required.

§ 8. Completion of Authorized Activities

All activities authorized under this Order must be commenced before the expiration of this Order unless otherwise provided in an authorization or permit. The deadline for commencement under any authorization or permit issued under this order may be extended on a showing that contractors or supplies are not available to commence the work, or if additional time is needed to obtain any required authorization from the Unified Command, or other local, state, or federal agencies.

§ 9. Amendments

This Order may be amended as required to abate the emergency.

§ 10. Expiration Date

This Declaration of Emergency and Administrative Order shall take effect immediately upon execution by the Secretary of the Department, and shall expire at 11:59 p.m. on May, 29, 2010, unless modified or extended by further order.

DONE AND ORDERED on this 18th day of May, 2010, in Baton Rouge, Louisiana.

Peggy M. Hatch
Secretary
Louisiana Department of Environmental Quality

APPENDIX A

Comprehensive Plan for Disaster Clean-up and Debris Management

Purpose

The purpose of the Comprehensive Plan for Disaster Clean-up and Debris Management is to establish a framework to facilitate the proper management of debris generated by natural disasters within the state (R.S 30:2413.1). The goal is to facilitate a reasonable, efficient, and prompt recovery from such disasters and be protective of human health and the environment. The plan includes flexible and innovative approaches to address disaster-generated debris issues. It adheres to the Louisiana Department of Environmental Quality's mission of protecting human health and the environment to the fullest extent possible under the circumstances. The plan allows LDEQ the flexibility to consider, approve, or disapprove reasonable requests for authorizations, variances, and waivers as needed for rapid and environmentally sound waste management, recycling, and disposal. A primary objective of the plan is to conserve landfill capacity and to protect natural resources to the maximum extent practicable.

Pursuant to the laws of the state of Louisiana, the Secretary of the LDEQ is granted the authority to declare an emergency upon receipt of evidence of an incident that requires immediate action to prevent irreparable damage to the environment and serious threats to life or safety. Upon declaring that an emergency exists, the Secretary may issue such permits, variances or other orders as necessary to respond to the emergency, and such orders are effective immediately. With the declaration of an emergency, the Secretary issues an administrative order, which provides specific measures authorized within the timeframe of the emergency. Those specific measures contained in the emergency order serve as relief for the duration of the order from the regulatory and proprietary requirements of the LDEQ. However, the measures do not provide relief from the requirements of other federal, state, and local agencies.

Thus, the regulatory flexibility to manage disaster-generated debris in the manner set forth in this plan is authorized upon issuance of an Emergency Declaration and Administrative Order by the LDEQ Secretary. The Emergency Declaration and Administrative Order will require adherence to the "Comprehensive Plan for Disaster Clean-up and Debris Management," except where the Plan may be in conflict with the provisions of the Order. In the event of conflict, the Order shall prevail. Moreover, while this plan is consistent with state and federal law, it does not supersede any ordinance adopted by a local governing authority.

This Comprehensive Plan for Disaster Clean-up and Debris Management documents some of the lessons learned from prior disasters and extends beyond those lessons to formulate a plan that manages future disasters in a cohesive, organized, and efficient manner, while ensuring protection of public health and the environment.

The LDEQ prepared a Hurricane Katrina Debris Management Plan that was released on September 28, 2005, and revised on October 14, 2005. Additionally during the 2006 Regular Session of the Louisiana Legislature, Senate Bill 583 (Act 662) was enacted as LA R.S. 30:2413.1. LA R.S. 30:2413.1 directs the LDEQ to develop and implement a comprehensive debris management plan for debris generated by natural disasters. The bill states the goal of the

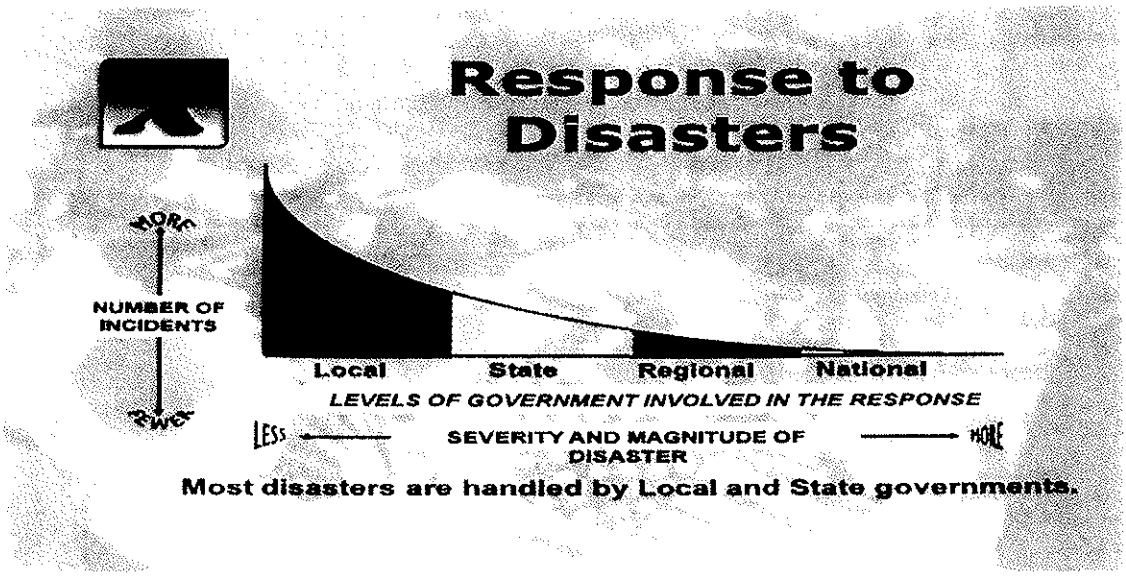
comprehensive debris management plan is to "reuse and recycle material, including the removal of aluminum from debris, in an environmentally beneficial manner and to divert debris from disposal in landfills to the maximum extent practical and efficient which is protective of human health and the environment." Among other things, SB 583 dictates the use of the following debris management practices, in order of priority, to the extent they are "appropriate, practical, efficient, timely and have available funding: recycling and composting; weight reduction; volume reduction; incineration or co-generation; and land disposal." The plan is limited by and may not extend beyond the limitations impose by the Secretary's Emergency Declaration and Administrative Order.

This plan builds upon LDEQ's existing plan and is intended to be a living document. As such, it will be amended, as necessary, to address specific challenges as they arise.

1.0 Background

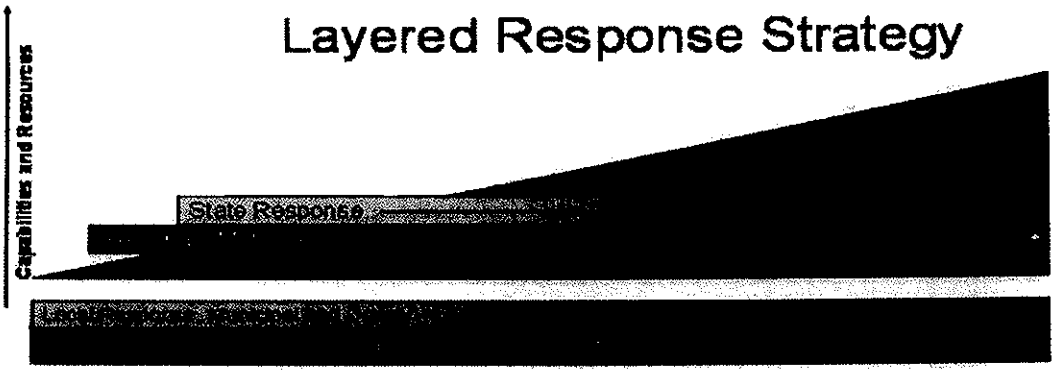
Local governments are the lead responders for incidents and most incidents are handled locally (ex. fires, etc.). Some incidents (such as chemical transportations spills) escalate in complexity and are handled by a combination of state and local resources.

1.1 Response to Disasters



FEMA assistance is triggered by the Governor's Declaration of an Emergency and a request for federal assistance. The Governor's request is made to the FEMA Regional office in Denton, Texas. Representatives from the Governor's Office of Homeland and Emergency Preparedness (GOHSEP) and FEMA conduct a preliminary damage assessment (PDA) to estimate the extent of the disaster and its impact on individuals and public facilities. This information is included in the Governor's request to show that the disaster is of such severity and magnitude that effective response is beyond the capabilities of the State and the local governments and that Federal assistance is necessary. Local response to save lives and initiate recovery takes place immediately and automatically while the external responses are mobilizing.

Disasters of less severity and magnitude are triggered by the Governor's Declaration of an Emergency minus the request for federal assistance. Representatives from the Governor's Office of Homeland and Emergency Preparedness (GOHSEP) will immediately conduct a preliminary damage assessment (PDA) to estimate the extent of the disaster and its impact on individuals and public facilities. Local response to save lives and initiate recovery takes place immediately and automatically while the external responses are mobilizing. Tools for estimating the amount of debris generated are available at: http://www.deq.louisiana.gov/portal/LinkClick.aspx?fileticket=4zFI7uw%2faKo%3d&tabid=2853



MINIMAL	LOW	MEDIUM	HIGH	CATASTROPHIC
Tornado	Ice Storm	Flood	CAT 3 - 4 Hurricane	LA Earthquake / New Orleans CAT 5 Hurricane
Influenza, food borne Illnesses, endemic plague	Anthrax, plague with 1-2 cases	Pandemic Influenza	Smallpox	Bio-Engineered Agent
Traffic Accident	HAZMAT Spill	Aircraft Crash	Dam Break	Nuclear Plant Significant Incident

1.2 Disaster Categories

There are many types of disasters to contend with and we have categorized them as:

- NATURAL - Floods, Tornadoes, Hurricanes, Thunderstorms and Lightning, Winter Storms and Extreme Cold, Extreme Heat, Earthquakes, Volcanoes, Landslide and Debris Flows (Mudslide), Tsunamis, Wildfires

- INCIDENTS - Hazardous Materials Spill/Leak, Terrorism, Explosions, Aircraft Crashes, Chemical Emergencies, Nuclear Power Plant Incidents, Fires

- BIOLOGICAL – Flu and Food Poisoning Outbreaks, Pandemics, Bio-Engineered agent releases

2.0 Disaster Management

Disaster debris management is typically the largest part of government expenditures for disaster relief and recovery. The success of a debris management program is dependent upon the commitment by the agencies involved to planning, implementing, and evaluating their plan effectively and efficiently. Proper planning by management and effective employee training provides a foundation for a quick and successful recovery. See:
http://www.ohsep.louisiana.gov/recovery/debrismgtsampleplan.htm
The benefits of advance planning for disaster debris management include:

- Organized control of disaster debris management
- Reducing costs
- Increased speed and efficiency of clean-up
- Minimizing environmental and public health impacts
- Consistency with federal reimbursement requirements
- Increased public awareness of debris management issues

Several key themes run through this guidance:

- Making reduction, composting, recycling and diversion from landfills a priority
- Pre-approval of debris sites and local activation of pre-approved sites
- Proceeding in a manner that facilitates federal reimbursement
- More training in state and federal policies and procedures is need
- Increased buy-in and participation from the public

2.1 Debris Response Triggers

GOHSEP and FEMA use the results of the Preliminary Damage Assessment (PDA) to determine if the disaster situation is beyond the combined capabilities of the State and local resources and to verify the need for supplemental Federal assistance. Since all disasters do not necessarily require debris management, it is possible to apply Disaster Types with Disaster Intensity to trigger various levels of debris options. For example;

(NOTE: these are examples of how triggering might be applied and *may* not be used nor implied as being proposed for adoption by DEQ)

LOW INTENSITY

Trigger 1 - Impact 1 and local flooding or intense storms: Local debris site activation and vegetation debris reduction.

MEDIUM INTENSITY

Trigger 2 - Impact 2 and Cat. 1 Hurricanes or tornadoes: Consider construction and demolition (C&D) debris site collection
Trigger 3 - Impact 3 and Cat. 2-3 hurricanes: Consider air curtain destructors, and modification of C&D definitions for flooded areas.

HIGH INTENSITY

Trigger 4 - Impact 4: consider additional debris sites, grinding C&D and implementing asbestos handling guidance modifications.
Trigger 5 - Impact 5: consider amended residence demolition guidance; consider additional C&D guidance.

CATASTROPHIC

Trigger 6 - Impact 6: consider vegetative debris options, consider additional disposal options.

(NOTE: these are examples of how triggering might be applied and *may* not be used nor implied as being proposed for adoption by DEQ)

2.2 Federal Funding Compliance Requirements

Recipients of FEMA funding will require state agencies and local governments to accept roles and responsibilities for Environmental and Historic Preservation (EHP) Compliance. Compliance is essential for proper and timely reimbursement and enduring the inevitable audit. These laws and executive orders are aimed at protecting water, air, coastal, wildlife, land, agricultural, historical, and cultural resources, as well as minimizing potential adverse effects to children, low-income and minority populations.

FEMA funded activities that may trigger and EHP review:

- Debris Removal
- Emergency Protective Measures
- Repair to Pre-Disaster Condition
- Modification, Expansion, & Mitigation
- New Construction & Ground Disturbance

Detailed EHP information for state agencies and local government officials is provided at: http://www.crt.state.la.usjhpjSection106.aspx or http://www.fema.gov/plan/ehp/.

3.0 Recycling and Beneficial Use

This plan is designed to encompass LDEQ's goal of reduction, conservation, and management relative to debris management. The plan promotes reduction of the debris stream utilizing chipping, grinding, recycling, or other methodologies as directed in LA R.S. 30:2413.1. It promotes conservation and management by ensuring that adequate capacity exists for disposal and management of disaster-generated debris, including that generated by redevelopment and repopulation by businesses and residents. The plan also encompasses the legislative mandate as directed in LA R.S. 30:2413.1 to reduce debris 50% by volume and 50% by weight prior to disposal in a landfill.

Local governments or state agencies should identify sites where recycling and beneficial use options may be utilized. Local governments or state agencies should maintain standby contracts to provide for the oversight, implementation and operation of recycling and beneficial use projects associated with disaster-generated debris activities. The standby contracts should include provisions to ensure that marketing outlets are available to receive and process the material resulting from the recycling and beneficial use activities. The recycling and beneficial use options provided below and later in this document will contribute to the plan's goals. See 8.0 on Special Debris Management for more information.

Bricks and concrete removed from homes during the demolition process may be recycled utilizing stone crushing equipment (large scale-crushing operations may require additional conditions or permits). Equipment utilized for this purpose shall be operated in accordance with manufacturers' instructions and any applicable LDEQ correspondence, authorization or guidance. A copy of the manufacturers' instructions shall be maintained on site and made available to the regulatory agencies upon request.

4.0 Debris Management Definitions

4. 1 Construction and Demolition Debris

Non-hazardous waste generally considered not water-soluble, including but not limited to:

- Metal, concrete, brick, asphalt, roofing materials (shingles, sheet rock, plaster), or lumber from a construction, remodeling, repair, renovation, or demolition project
- The incidental mixture of construction and demolition debris with asbestos-contaminated waste. (i.e., incidental asbestos-contaminated debris that cannot be extracted from the demolition debris)

4.2 Vegetative Debris

Vegetative debris consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material. **It does not include processed wood or other lumber used in construction.**

4.3 Debris Management Site

A Debris Management Site is a location that has been identified by the local government or state agency and has been evaluated and approved by LDEQ for the purposes of staging, reduction, or final disposal of disaster-generated debris.

The activities conducted at these sites might include:

- Chipping and grinding and/or composting of vegetative debris
- Burning operations for vegetative debris only
- Construction and demolition debris staging or disposal
- Staging of vessels and vehicles, or
- Staging of special debris (munitions and ordnance, household hazardous materials, compressed gas tanks, electronic goods, white goods and tires)

Debris management sites **do not** include the staging or other processing of municipal solid waste or putrescible waste and may not be unless approved by the Department.

4.4 Curbside Segregation of Debris

Curbside separation or sorting of debris is the sorting of debris by the resident into piles of discrete waste streams being collected as the result of a disaster.

This is the most efficient and cost effective method of debris management. The segregated debris piles must be placed on the right-of-way and away from obstructions, such as,

mailboxes, fire hydrants, gas meters, and telephone poles. Waste streams typically needing curbside separation in a disaster recovery effort are vegetative debris, construction and demolition debris, electronics, household hazardous materials, other special wastes and regular garbage. This will vary according to the extent of the disaster and the capabilities and decisions of local governments. Local government and state agencies should develop specifically tailored collection strategies for unique situations, such as, narrow streets, dense population, and narrow right-of ways. Curbside segregation of debris should not be done by the collection crews. In no case are munitions and ordnance to be the subject of curbside segregation. See Section 8.8 for more information on munitions and ordnance.

4.5 De minimus contamination

De minimus contamination of the construction and demolition debris waste stream should be insignificant contamination of approximately 5% of the incoming load. In no case shall a single load exceed 10%.

4.6 Eligible debris

Debris removal is the clearance, removal, and/or disposal of items such as trees, sand, gravel, building components, wreckage, vehicles, and personal property. For debris removal to be eligible or reimbursement, the work must be necessary to: eliminate an immediate threat to lives, public health and safety; eliminate immediate threats of significant damage to improved public or private property; ensure the economic recovery of the affected community to the benefit of the community-at-large; and to mitigate the risk to life and property by removing substantially damaged structures and associated appurtenances as needed to convert property acquired through a FEMA hazard mitigation program to uses compatible with open space, recreation, or wetlands management practices. FEMA, not the Department, determines eligibility. (http://www.fema.gov/government/grant/pa/debris_main.shtm)

4.6.1 Types of eligible debris:

1. Vegetative
2. Construction & demolition
3. Hazardous waste
4. Household hazardous waste
5. E-waste
6. Soil, mud, and sand (FEMA evaluates on a case-by-case basis)
7. White goods
8. Vessels and vehicles
9. Putrescent (decaying garbage)
10. Compressed gas tanks
11. Tires
12. Munitions and ordnance

4.6.2 Types of ineligible debris

1. Debris from a previous disaster
2. Debris related to construction
3. Fallen trees in a forest
4. Stump removal, unless authorized by FEMA
5. Private property debris, unless authorized by FEMA
6. Debris on public golf courses or cemeteries
7. Regular municipal garbage collection

5.0 Debris Management Sites

The Plan is designed to provide guidance to local governments and state agencies in planning, mobilizing, operating, and deactivating disaster debris sites. It is important that agencies and local governments handling debris have their own Debris Management Plan that complies with this document and the debris management requirements of FEMA as published in FEMA's Debris Management Guide, FEMA-325. It is important that local Debris Management Plans identify key staff members and their responsibilities for managing and controlling debris clearing, removal, and ultimate disposition operations. Agencies and local governments will need to determine appropriate sites for the following temporary activities that may be required to respond to a disaster: staging and transfer of construction and demolition (C&D) debris; staging of vehicles and vessels; staging of household hazardous waste; chipping, grinding and/or burning of vegetative debris; composting of vegetative debris; handling of munitions and ordnances; staging of white goods, electronic goods and other consumer items; and recycling and beneficial use activities. Agencies and local governments should also consider the number and type of sites that may be required. Transportation access should also be a consideration factor.

The Department will pre-approve disaster debris sites. Sites that were approved by LDEQ for use in previous recent disasters (Katrina, Rita, Gustav, and Ike) are prime candidates for pre-approval. The designation of a location as an inactive "pre-approved" site will be subject to an annual renewal by June 1. Upon the declaration of a disaster by the Governor, local governments and state agencies may "activate" a pre-approved site for its intended purpose. Upon activation, a verbal notification will be provided to the LDEQ Regional Manager that the site is active. This verbal notification shall occur as soon as practicable depending on communication capability. A written follow up notification shall be made within 15 days of the activation date to the LDEQ Regional Manager. The LDEQ Regional Office staff will monitor the site and handle site "deactivation" requests once the site use is no longer needed. A site may be closed as a pre-approved site upon request of the property owner, the local government that requested designation or the Department. See Appendix C for a list of the LDEQ Regional Offices and their contact information

5.1 Finding the Right Location

When selecting a proposed debris management site, the local government should consider the following:

- Does the site have historical preservation approval? Pre-approval cannot be granted until this is completed. Previously approved sites should have received SHPO documentation.
- What is the proposed use for this site?
- Is it easily accessible by the types of vehicles transporting the debris?
- Is it removed from obstructions such as power lines and pipelines?
- Is the site considered a wetland area, as defined by the U.S. Army Corps of Engineers?
- Is the general site topography conducive to the activity that will be conducted there?
- Are there nearby occupied residences and/or businesses that will be inconvenienced or adversely affected by use of this site?

- Is the size sufficient for its intended use?
- Is the soil type suitable for its intended use?
- Is the site a previously authorized location that is being reactivated for use?
- Is the site located near water bodies such as rivers, lakes or streams and their proximity to occupied dwellings?
- What is its proximity to the impacted area?
- Ownership of site? If not government owned, the applicant needs to have secured access rights to the property.

5.2 Site Approval

In order for a location to be considered by the LDEQ as a debris management site, the agency or local government must submit an Emergency Debris Management Site Evaluation & Request Form to LDEQ. A copy of the form is attached as Appendix A and is available on LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/259/Default.aspx Authorizations may be issued following a site inspection by LDEQ personnel for staging areas to be used for temporary storage and chipping, grinding or burning of disaster-generated vegetative debris. Sites that have been identified by an agency or local government, evaluated, and authorized by LDEQ for use in response to a previous hurricane disaster will be provided on LDEQ's website. If the site is approved, LDEQ will inform the local government and will document the approval, usually by letter. The letter will also contain any restrictions or operational conditions that must be adhered to relative to the site. Operational conditions will be outlined in an Interim Operational Plan provided with the site approval.

The Department my choose to provide verbal notice of approval upon receipt of the Emergency Debris Management Site Evaluation & Request Form, however, verbal approval will not be given for burning sites or temporary C&D disposal sites.

5.3 Site De-activation

Each temporary debris management site, with the exception of authorized vegetative debris sites where ash is land-applied, will eventually to the extent practicable, have disaster-related debris cleared and be restored to its previous condition and use. De-activation must be in accordance with approved LDEQ practices and/or the Interim Operational Plan contained in the department's site approval letter. Sampling of soil and/or ash that is left at the site may be required by the LDEQ. The agency or local governing authority will be required to take necessary steps to ensure that no environmental contamination is left on-site. De-activation should be accomplished within the time limits established by the LDEQ.

6.0 C&D Debris Management

LDEQ recognizes that decisions on the disposition of wastes and debris need to be made at the collection point. Use of best professional judgment will be necessary to determine the ultimate disposition of collected material. Contractors chosen by the local governing authority, or by state or federal agencies, should possess knowledge of applicable regulations, this plan, and any LDEQ Declarations of Emergency and Administrative Order in order to correctly manage, transport and route waste streams to appropriate sites and/or facilities

6.1 C&D Debris Staging/Transfer

In the event of a considerable amount of the disaster-generated C&D debris, staging may be necessary and debris shall be transported at a later date to be placed into LDEQ authorized C&D debris disposal sites. See Section 4.1 Construction and Demolition Debris definitions.

If approved, site operations will comply with the temporary staging area Interim Operational Plan provided with the site approval. It is the responsibility of the local government to provide this Interim Operational Plan to any entity that may be charged with operation of the site. See Appendix A for an example.

Arrangements should be made to segregate unsuitable materials such as household garbage, white goods, asbestos containing materials, and household hazardous waste. These materials should be placed in appropriate containers and transported to facilities that are approved for their receipt. If more than de minimus amounts of these wastes are present, the waste should be handled in a manner consistent with the most stringent management technique necessary for the waste stream. Louisiana has new LESHAP Guidance on Residential Demolitions. See: http://www.deq.louisiana.gov/portal/tabid/2883/Default.aspx

6.2 C&D Debris Disposal

C&D debris shall be disposed in permitted C&D Debris Landfills. However, due to the devastation caused by a natural disaster, it may be necessary for LDEQ to approve staging and/or disposal of C&D debris at sites that are deemed appropriate but are not permitted.

In extreme circumstances, local governments may request establishment of temporary C&D disposal sites. Sufficient information must be provided to justify the request and that demonstrates the site will operate under efficient, expeditious and environmentally safe operations. At the time of the request, the local government must address how the closure of the site will be accomplished, who will manage the site closure and the party responsible for funding the site closure. If approved, site operations must comply with the Interim Operational Plan provided by LDEQ.

7.0 Vegetative Debris Management

Every effort shall be made to consolidate material from fallen trees and other vegetative debris in an attempt to beneficially use as much of this material as possible. For example, some local industries can utilize the wood material for fuel, and should be encouraged to do so. Material may be chipped or otherwise reduced in volume to allow for composting or other beneficial reuse. Site operations must conform to the requirements of R.S. 30:2413.1 in that "the total green and woody debris intended for final disposal in a landfill, fifty percent shall be reduced by weight and fifty percent by volume prior to transport to a landfill" (for disposal). The law states that "reuse and recycle material and to divert debris from disposal in landfills to the maximum extent practical, efficient, and expeditious in a manner that is protective of human health and the environment."

Vegetative debris may be transported to a landfill for reduction; however, it may not be placed directly into a cell for final disposal until reduced. Although the Department encourages as close to a 100% diversion of vegetative debris from final disposal into landfill cells, the statutory minimum requirement is the 50% reduction by weight and volume. Vegetative debris may be transported to a landfill, reduced by any lawful method, and placed in cells after reduction.

In order to effectively implement this policy and encourage recycling, the beneficial use of vegetative debris, and the efficient management of debris generated by Hurricane Gustav, LDEQ has required that all debris management sites submit a Weekly Debris Management Report. These weekly reports indicated the volume and weight of debris received, processed, recycled, and disposed in a landfill. The Department determined that the most equitable method for attaining the goal for all state agencies was to apply the statute statewide. Instances where the goal was not met by local state subdivision, either municipal or parish, will be examined by DEQ staff to determine why the goal was not met and what needs to be done to improve compliance on a case-by-case basis.

7.1 Coastal Restoration Projects

The Department of Natural Resources has stated, "The potential to use post-storm vegetative debris in coastal Louisiana for coastal restoration and protection purposes is very limited. Several demonstration projects have been attempted; however, the proved not to be economically and ecologically justifiable." See:
http://cms/portal/Portals/0/HurricaneGustav/Vegetative%20debris%20for%20coastal%20restoration.pdf

7.2 Vegetative Debris Staging and Processing Sites

Materials approved for receipt at vegetative debris staging and processing sites include vegetative debris such as yard waste, trees, limbs, stumps, and branches. Sites should be identified as staging/grinding/chipping/composting sites and/or burn sites. All debris sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance. **It is the responsibility of a local government authority and/or a state agency to provide the LDEQ Plan, correspondence or guidance to any entity**

that may be charged with operation of the site. All equipment (grinders, chippers, air curtain burners) shall be operated in accordance with manufacturers' instructions and any applicable LDEQ authorization. A copy of the manufacturers' instructions shall be maintained on site and made available to the regulatory agencies upon request.

7.3 Vegetative Debris Staging

Some debris sites will only stage vegetative debris and shall not conduct any form of processing of the vegetative debris. These debris sites shall only store the vegetative debris until it is to be hauled to a processing site for reduction. Maintaining staging piles of vegetative debris with a height of less than 6 feet and base width of less than 10 feet provides greater surface area for dissipation of heat and volatile gases, thereby minimizing the risks of spontaneous combustion. Frequent monitoring is required. Staging sites must limit the temperature of staged piles of vegetative debris to 160 degrees or less in order to reduce the potential for spontaneous combustion by allowing accumulated heat and gases to escape. Sites only approved for staging must request and obtain written approval in order to chip, grind, compost or burn debris.

It is strongly recommended that local governments designate an approved emergency debris management site as a drop-off vegetative debris site where residents may bring vegetative debris for aggregation and/or processing. It is also suggested that portion of this site be setup to accept other residential materials, such as, electronics, appliances household hazardous materials, tires, and compressed gas cylinders. A separate container for residential garbage would be especially useful. Drop-off sites should be designed and managed with public safety as a priority.

7.3 Vegetative Debris Grinding/Chipping/Composting

Grinding and chipping provides material for use in landscape mulch, compost preparation, and industrial boiler fuel.

In preparing compost and/or mulch piles, care should be taken to reduce the potential for spontaneous combustion. Placing chipped or ground organic debris into piles can result in rapid microbial decomposition that generates heat and volatile gases. Temperatures in large piles containing readily degradable debris can rise to greater than 160^0 F, increasing the chance of spontaneous combustion.

Spontaneous combustion is more likely in large, dense piles of debris under dry, windy conditions. Maintaining windrows with a height of less than 6 feet and a base width of less than 10 feet provides greater surface area for dissipation of heat and volatile gases, thereby minimizing the risks of spontaneous combustion.

Turning piles when temperatures reach 160 degrees can also reduce the potential for spontaneous combustion by allowing accumulated heat and gases to escape. Turning piles when temperatures decline can restore microbial activity and composting temperatures. Optimal moisture should be maintained to reduce combustibility. As a rule, optimal moisture is obtained when squeezing a handful of material yields a drop or two of water.

Shredded leafy debris will decompose more rapidly and retain more heat than wood chips.

Sufficient wood chips or other bulky materials should be mixed with leafy material to ensure rapid diffusion of heat and gases during the early stages of decomposition. The ideal ratio of carbon (wood chips) to nitrogen (green materials) in a compost pile is about 30:1. A pile with that balance of materials will decompose steadily, and yield nutrient-rich compost.

Large piles or windrows should be located away from wooded areas, power lines, and structures. They should be accessible to fire fighting equipment, if a fire were to occur.

7.5 Vegetative Debris Burn Sites

Vegetative debris burn sites consist of open burning and burning via the use of a portable air curtain incinerator (air curtain destructor or pit burner). Proximity to roads and dwellings is of particular importance in the selection of sites for this activity.

LDEQ may approve open burning of vegetative debris on a case-by-case basis. As with all proposed debris management sites, **open burning locations must be approved by LDEQ in advance of their** use. Local governments may utilize open burning during the initial disaster response for a reasonable timeframe to allow for the reestablishment of critical arteries for transportation, emergency response, and governmental operations. Timeframes will be reflected by the magnitude of the disaster. In addition, where continued burning is necessary, any burning shall utilize equipment to efficiently combust waste and reduce emissions if LDEQ or local governing authority deems the use of equipment necessary to protect public health and the environment. Local, state, and federal partners associated with the vegetative debris burning operation will be advised of locations that have been approved for this purpose. All sites must be operated in accordance with the LDEQ-provided Interim Operational Plan or other LDEQ correspondence or guidance.

Portable air curtain incinerators should be operated in accordance with the manufacturers' instructions and with any applicable LDEQ permits or directives. *A copy of the manufacturers' instructions shall be maintained on site and made available to the regulatory agencies upon request.*

The Department has adopted regulations for portable air curtain incinerators. Large-scale air curtain operations may require additional conditions or permits. Operators should be familiar with:http://www.deq.louisiana.gov/portal/LinkClick.aspx?fileticket=Kbbg%2bq9hlqQ%3d&tabid=2853

Ash from Vegetative Debris Burn Sites may be land applied on site or off site. Off site application of ash will require specific, written prior approval by DEQ. Whenever possible, soil test data and analysis of the ash should be available to determine appropriate application rates. Ash should not be applied during periods of high winds. Ash should not be applied within 25 feet of surface waters or ditches or drains on vegetated sites. These distances should be doubled on sites that are not vegetated, and the ash should be promptly incorporated into the soil. As an approved alternative to land application, ash from combustion of clean vegetative debris may be utilized as a blending or stabilization component, chemical activator, replacement component in masonry products or a component of pozzolanic concrete. Ash that cannot be land applied or used in an alternative manner shall be disposed at a permitted solid waste landfill.

Assistance in obtaining soil test data and waste analysis of ash may be available through the LSU Cooperative Extension Service's Soil Testing Laboratory. http://www.stpal.lsu.edu/

7.6 Vegetative Debris Disposal

To the extent possible and practicable, vegetative debris that cannot be beneficially used will be disposed in permitted landfills. The total volume of green and woody debris intended for final disposal in a landfill shall be reduced fifty percent by volume and fifty percent by weight prior to final disposal. This chipped or ground vegetative debris may be used as compost, a component of daily cover (with permission), ground cover, erosion control material, or as fuel. Vegetative debris may not be disposed in a landfill as the first option, but may be used as a component of the cover system for a landfill or a means for providing erosion control.

7.7 Weekly Debris Management Reports

7.7.1 Submitting

In order for the Department to monitor the local government or state agency management of the vegetative debris waste stream and to ensure that the Legislative Mandate has been met *(vegetative debris shall be reduced fifty percent by volume and fifty percent by weight prior to final disposal into a landfill),* all vegetative debris sites processing vegetative debris (grinding, chipping, and burning sites) shall submit to the Department on a weekly basis, a Weekly Debris Management Report (WDMR) indicating how much vegetative debris is received, what method(s) of process is utilized (Le. chipping, grinding, beneficial reuse, and/or burning), how much vegetative debris is processed, and the final fate of the waste stream (Le. industrial boiler fuel, compost/mulch, a component of the cover system for a landfill, disposal in landfill, etc.). This report is required to be filled out by all active sites until all of the vegetative debris received has been finally processed. All WDMRs shall be submitted before the debris site can be closed or deactivated. (Copies are in Appendix A)

7.7.2 Signature

All WDMRs shall be signed by an authorized person duly authorized by the local government or state agency responsible for the debris site. "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7.7.3 Agency Responsibility

It is the local government or state agencies responsibility that all WDMRs are filled out and submitted to the Department in a timely manner.

7.7.4 De-activation

De-activation is applicable to pre-approved debris sites only. Once a de-activation assessment is conducted and all Weekly Debris Management Reports have been received and verified complete, a deactivation letter is signed by the Assistant Secretary indicating that the debris site is considered de-activated by the Department and shall not accept or process any additional debris. For information on site de-activation, see Section 5.3.

7.7.5 Closure

Closure is applicable to all temporary emergency debris management sites and those pre-approved sites being withdrawn as pre-approved sites. Once a closure assessment is conducted and all Weekly Debris Management Reports have been received and verified complete, a closure letter is signed by the Assistant Secretary indicating that the debris site is considered closed by the Department and shall not accept or process any additional debris. For information on site closure, see Section 5.0

7.8 Marsh Debris Management

7.8.1 Marsh Grass

Freshwater marsh grass debris can be an effective additive to composting vegetative debris. As marsh grass is almost completely water, it provides a natural moistening agent to composting, and at the same time, accelerating the natural process of decomposition.

According to Bill Carney, Ph.D., Coordinator of the LSU Ag Center, Research and Extension, WA Callegari Center Environmental Center, utilization of this freshwater marsh grass in the composting process in a 3:1 ratio of marsh grass (carbon source) to a nitrogen source (manure, green grass) will result in the most effective management of this debris which is extremely difficult to burn. Increased salt content due to storm surge may affect its final use as a soil amendment after composting. There exist field test meters that can be used to determine salinity levels.

7.8.2 Retrievable Debris

Retrievable debris items that are in the wetland marsh area shall be retrieved in accordance with ESF-10 protocol [1] and transported to an authorized debris management area. Those items will then be either recycled and/or disposed in accordance with this Plan

Retrievable debris items (e.g., vessels, containers, orphan drums, compressed gas cylinders, vessels, vegetative/woody matter, white goods, etc.) that are not in a marsh but are located in or near land or a water-body adjacent to a wetland marsh area shall be retrieved for transport to an authorized debris management site. Those items will then be either recycled and/or disposed in accordance with this Plan.

Retrievable debris items should, if possible, be retrieved during the initial recovery operation, managed, and transported to facilities that are approved for their receipt and management. These debris recovery and removal activities are not expected to result in appreciable habitat disturbance.

1 ESF -10 - Emergency Support Function # 10 describes the lead coordination roles, the division and specification of responsibilities among federal agencies, and the national, regional, and onsite response organizations, personnel, and resources that may be used to support response actions. ESF #10 is applicable to all federal departments and agencies with responsibilities and assets to support state, local, and tribal response to actual or potential oil or hazardous materials incidents.

7.8.3 Irretrievable Debris

Irretrievable debris items that are located in the marsh, especially sensitive marsh areas, shall be managed in accordance with ESF-10 protocol. These debris management activities are expected to result in appreciable habitat disturbance and therefore, would require an expedited or emergency trustee consultation.

7.8.4 Marsh Burning

Care needs to be taken with marsh burning during disaster recovery operations. Due to the immense amounts of vegetative debris generated in most disasters, these fires can easily expand beyond anticipated burn areas. Marsh burning near active debris sites can pose risk to the site and site personnel. Burning is a practice utilized in marsh areas, especially in areas designated as a refuge. Refuge areas utilize marsh fires on a 2 to 3 year rotational schedule to manage the accumulation of marsh grass and other vegetative/woody debris. The refuges and other entities (i.e. private, parish, state, or federal) owning marsh areas that are non-oil contaminated areas may utilize this method to address the accumulations of marshy grass and debris generated because of a natural disaster. The utilization of a marsh fire to address the disaster-generated debris must be communicated to and coordinated with local, state and federal entities participating in the disaster response and management activities (i.e., parish government, property owners, Department of Natural Resources, Department of Wildlife and Fisheries, Department of Environmental Quality, Environmental Protection Agency, United States Coast Guard, United States Army Corps of Engineers, Parish/Local Fire Department). The plans and procedures pertaining to marsh burning are to be evaluated and authorized by all entities involved in the effort. The plan must take into consideration the potential presence of hazardous, flammable, ignitable, or reactive materials that could influence the marsh burning operation. This is needed so that the proper environmental and personal safety precautions will be set forth in the marsh burning plans and procedures.

7.8.5 Transportation in the Marsh

The specific methods of maneuvering transport vehicles (i.e. marsh buggies, pontoons, etc.) in the various areas of the marsh for the purposes of debris management and retrieval activities will need the concurrence of the Department of Natural Resources (Coastal Management), the Louisiana Department of Wildlife and Fisheries and other pertinent state level agencies. This coordination is also needed to address potential navigation hazards or obstructions posed by the presence of disaster-generated debris in the marsh areas.

8.0 Special Debris Management

8.1 Household Hazardous Materials (HHM)

Hazardous waste is waste that can catch fire, react, explode, is corrosive or toxic. Most HHM produced by residential consumers is in small quantities, so those wastes have been exempted from regulation as a hazardous waste by EPA and the State of Louisiana. To be defined as "household" waste and thus considered exempt from federal/state hazardous waste regulations, the waste must be generated by individuals on the premises of a residence for individuals (a household) *and* composed primarily of materials found in the wastes generated from homes. Wastes generated by commercial or industrial establishments that appear to be the same as household waste are not exempt from state/federal hazardous waste regulations.

The Department strongly recommends that sponsors of HHM collection programs manage the collected waste as a Subtitle C hazardous waste, that is, it shall be managed at a facility or site following the hazardous waste guidelines. Given the effort and expense put into a HHM collection program, it makes sense to ensure the greater level of personal safety and environmental protection that will result from the more stringent controls. Precautions must be taken at these sites to prevent the release of materials into the environment. Such precautions include, providing lined temporary storage areas for accumulation of the material, segregation of the various streams, using trained personnel, obtaining spill kits and providing personal protective equipment.

HHM staged at a permitted solid waste facility or approved Emergency Debris Management Site for scrapping/recycling shall be staged away from other solid wastes by category, appliances, electronics, compressed gas cylinders, *etc.*

8.2 Appliances

Local governments should set up citizen drop-off collection sites for large appliances (white goods) in the event that a large amount of such material is anticipated. It is recommended that local governments contract with a metals/or scrap appliance dealer to come and collect white goods for recycling, as white goods may not be landfilled. Mercury switches and refrigerant must be removed from appliances by the contractor. Mercury containing devices are easily handled. More detailed information on mercury devices in appliances is available from LDEQ's web site at: http://www.deq.louisiana.gov/portal/tabid/287/Default.aspx.

8.3 Small Engines

Small engines may be sent to a scrap metal processor. Efforts should be made to be made to remove oil, fuel, and any other fluids.

8.4 Electronic Goods

In order to contribute to increased recycling and to reduce the volume of waste disposed in landfills, electronic waste (electronic goods or e-goods) should be recovered. It is recommended that local governments contract with an electronics recycler or use the state recycling contractor to come and collect electronics for recycling and dismantling. A state contract is available for state agencies and

local government agencies to utilize for the collection of electronics.

Cathode Ray Tubes (CRTs) shall be sent for reuse and/or recycled. See the LDEQ regulations at LAC 33:V:4911, 4913, and 4915. (Conditional Exclusion for Used, Broken Cathode Ray Tubes Undergoing Recycling, Conditional Exclusion for Used, Intact Cathode Ray Tubes (CRTs) Exported for Recycling, Notification and Recordkeeping for Used, Intact Cathode Ray Tubes (CRTs) Exported for Reuse).

8.5 Compressed Gas Cylinders

Compressed gases present a unique hazard. Depending on the particular gas, there is a potential for simultaneous exposure to both mechanical and chemical hazards. Gases may be: flammable or combustible; explosive; corrosive; poisonous; inert; or, a combination of hazards If the gas is flammable, flash points lower than room temperature compounded by high rates of diffusion present a danger of fire or explosion. Additional hazards of reactivity and toxicity of the gas, as well as asphyxiation, can be caused by high concentrations of even "harmless" gases such as nitrogen. Since the gases are contained in heavy, highly pressurized metal containers, the large amount of potential energy resulting from compression of the gas makes the cylinder a potential rocket or fragmentation bomb.

Propane is a flammable gas that is generically referred to as LP-Gas or, LPG. It is recommended that local governments contract with a local LPG dealer to handle the inspection, pickup, recycling and redistribution of functional LPG and other flammable gas containers.

There should be no deliberate release of any compressed gas container, including oxygen and nitrogen tanks, by personnel as a part of the debris collection efforts. De-pressurized gas containers may still contain explosive gas mixtures. A close working relationship should be established with scrap metal processing facilities dealing with containers destined for scrap metal reclamation.

8.6 Fluorescent lamps

Fluorescent lamps are a Universal Waste and may be recycled using the state contract for fluorescent lamps. See: https://ecat.doa.louisiana.gov/ecat/external/externalContractDetail.sdo?docId=407696

8.7 Pesticides

Residentially generated pesticides should be handled as household hazardous waste. Contact the Department of Agriculture and Forestry, Waste Pesticide Program at (225) 925-6914 for pesticide questions or problems.

8.8 Munitions and Ordnance

Munitions or ordnance associated with the aftermath of a disaster that remain unexploded by either malfunction, design, or any other cause, should be handled by a law enforcement trained technician in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques.

8.9 Tires

Tires collected through hurricane debris collection activities and deposited at parish collection centers will be ineligible for payment of the Waste Tire Management Fund (WTMF) subsidy and are to be treated as debris under FEMA funded debris removal programs. Eligibility of tires for the subsidy shall be governed by the most current version of DEQ's Amended Declaration of Emergency and Administrative Order. For more help please contact DEQ Financial Services at (225) 219-3863 or Fax at (225) 219-3868.

8.10 Used Oil

Used motor oil, transmission fluid, and generator oils may be recycled by contacting a registered used oil transporter.

8.11 Latex Paint

Latex paint, if not recycled, may be hardened by adding an absorbent, such as cat litter or a commercial hardener and then sent to a municipal landfill.

8.12 Other Hazardous Wastes

Hazardous wastes, such as old gasoline, oil based paints, chemicals and solvents should be handled using a qualified hazardous waste contractor who is sending the materials to a permitted hazardous waste facility or reclaimer.

8.13 Treated Wood

Creosote treated telephone poles, chromated copper arsenate (CCA) or chromium trioxide wood, poles, railroad crossties, or treated wood chips must be disposed in a Type I (Industrial) Solid Waste Facility. Do not burn or use creosote and pressure treated wood as chips, sawdust, mulch, or compost.

8.14 Recordkeeping

Processors should keep a record of the amount of materials recovered and transported for recycling. Some products already require record keeping, e.g. used oil, and duplicate record keeping is not required, but a week summary report by category is expected.

9.0 Final Disposal Options

This Plan is designed to ensure that disaster-generated debris that requires disposal is managed and disposed in a manner that is protective of public health and the environment. Disaster-generated debris requiring disposal shall be managed and disposed at sites that have either been permitted or authorized by the LDEQ.

Disaster-generated debris contaminated with oil (e.g., crude oil, petroleum refined product) shall be disposed in a Type I, Industrial Solid Waste Landfill, except that oil contaminated marsh grass may be approved by the Department with local governments approval for burning on a case by case basis. Disaster-generated debris that is visibly covered with oil is considered oil-contaminated debris.

Putrescible waste (e.g., rotting food that has been removed unsalvageable refrigerators and freezers) shall be disposed in a Type II landfill.

The disposal of excessive accumulations of small animal carcasses shall be in accordance with the Louisiana Department of Health and Hospitals sanitary code. The disposal of large animal carcasses (e.g., horses, cows) shall be in accordance with the instructions from the Louisiana Department of Agriculture.

Hazardous waste generated because of the disaster event must be separated from other disaster-generated waste and disposed at a permitted commercial hazardous waste disposal facility. Recyclables and hazardous waste must be segregated for beneficial environmental use prior to transport to a landfill. While household wastes are classified as solid wastes that are not hazardous wastes, it is imperative that the household waste collected during this event be managed not only in an environmentally sound manner but also in accordance with the appropriate LDEQ rules and regulations governing the storage and processing of this type of waste.

Asbestos-laden debris from unabated buildings posed a personal and environmental hazard and must be handled according federal and state regulations. See:
http://www.deq.louisiana.gov/portal/tabid/2883/Default.aspx.

10.0 Formosan Termite Control

Landfills are an ideal environment for these subterranean termites, especially in humid Louisiana. For this reason, restrictions are in place from the Louisiana Department of Agriculture and Forestry designating where in Louisiana potential Formosan termite contaminated debris might be disposed. Landfill operators, contractors, and waste generators should consult with the Department of Agriculture and Forestry regarding proper disposal of Formosan termite debris. Contact Mr. Bobby Simoneaux at (225) 925-3763 or bobby_s@ldaf.state.la.us

APPENDIX B

BRITISH PETROLEUM-DEEPWATER HORIZON OIL SPILL
WASTE MANAGEMENT GUIDANCE

Louisiana Department of Environmental Quality
&
Louisiana Department of Natural Resources

Waste Stream	Waste Classification	Disposal/Treatment Options
Disposable Oil Booms– Oil has been removed to the extent practical	Solid Waste	Dispose of at a DEQ-permitted Type I landfill
Containment Booms – Wash-off waste fluids and solids not contaminated with hazardous waste	E&P waste, waste type 16, crude oil spill clean-up waste.	Dispose of at approved DNR-permitted site.
Containment Booms – Final disposal - Oil has been removed to the extent practical	Solid Waste	Dispose of at a DEQ-permitted Type I Landfill
Oil Contaminated Soils and Vegetative Debris	E&P waste, waste type 16, crude oil spill clean-up waste	Dispose of at approved DNR transfer station or commercial facility site or at DEQ-permitted Type 1 landfill.
Oil Contaminated Rags, Gloves, Disposable Personal Protective Equipment, etc.	Solid Waste	Dispose of at a DEQ-permitted Type I Landfill
Oily Wastewater not contaminated with hazardous waste	E&P waste, waste type 16, crude oil spill clean-up waste or waste type 50, salvageable hydrocarbons bound for permitted salvage oil operators	Dispose of at approved DNR-permitted site.
Dead or Injured Wildlife		Identify the species as best as possible, document the species, date, time and location, and call the Dept. of Wildlife and Fisheries at 225-278-8082.
Oil Removed from Booms	E&P waste, waste type 16, crude oil spill clean-up waste or waste type 50, salvageable hydrocarbons bound for permitted salvage oil operators	Dispose of at approved DNR-permitted site.
Oil Contaminated Debris – Cups, Styrofoam Containers, etc	Solid Waste	Dispose of at a DEQ-permitted Type I Landfill

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

AGENCY INTEREST NO. 170547

IN THE MATTER OF
BRITISH PETROLEUM-DEEPWATER HORIZON
OIL SPILL

EXTENSION OF SECOND AMENDED DECLARATION OF EMERGENCY AND ADMINISTRATIVE ORDER

Pursuant to the authority granted to me by Louisiana Revised Statutes 30:2001 et seq., and particularly La. R.S. 30:2033 and 2011(D)(6), I hereby find that the emergency conditions described in the "Second Amended Declaration of Emergency and Administrative Order" regarding the British Petroleum – Deepwater Horizon Oil Spill continue to exist, and therefore I hereby extend said declaration of emergency and administrative order through June 28, 2010.

DONE AND ORDERED on this 28th day of May, 2010, in Baton Rouge, Louisiana.

Peggy M. Hatch
Secretary

APPENDIX D

ICS 209 Form

ICS 209 - Incident Status Summary (Oil Spill)

Incident:	Prepared By: at
Period:	Version Name:

Spill Status (Estimated, BBLs)

Source Status:

○ Secured
○ Unsecured

Remaining potential:

Rate of spillage:

	Last 24 Hours	Total

Equipment Resources

Type	Ordered	Available /Staged	Assigned	Out-Of-Service

Mass Balance (Estimated)

Total spilled product accounted for:

Waste Management (Estimated, BBLs)

Type	Recovered	Stored	Disposed of
Oil			
Oily Liquid			
Liquid			
Oily Solid			
Solid			

Shoreline Impacts

Degree of Oiling	Miles Affected	Miles Cleaned	Miles Remaining to be Cleaned
Light			
Medium			
Heavy			
Total			

Personnel Resources

Organization	People in the Field	People in Cmd. Post	Total People On Scene
Federal			
State			
RP			

Total Personnel Resources:

Wildlife Impacts

Type	Captured	Cleaned	Released	DOA	Died in Facility
Bird					
Mammal					
Reptile					
Fish					
Other					
Total					

Safety Status

Type	Last 24 Hours	Total
Responder Injury		
Public Injury		
Other		

Comments

Enbridge Line 6B MP 608
Marshall, Michigan Pipeline Release
Waste Treatment, Transportation and Disposal Plan

August 2, 2010
(Revised August 8, 2010
per U.S. EPA August 7, 2010, Notice of Approval With Modifications)

SECTION 1 INTRODUCTION

This Waste Treatment, Transportation, and Disposal Plan (Plan) has been prepared for Enbridge Energy, Limited Partnership (Company) for the crude oil release site in Marshall, Michigan **(Figures 1 and 2)**.

1.1 OBJECTIVES

The Plan's objectives are to comply with Federal, State and County waste regulations, prevent or minimize human health and environmental risks associated with managing petroleum contaminated media, and to provide a beneficial reuse of the material where feasible.

1.2 TYPE AND QUANTITY OF WASTE

The released petroleum product is a crude oil. The Material Safety Data Sheet (MSDS) for the product is attached. Released crude oil has impacted soil, surface water, vegetation and potentially sediment. At this time, quantities of impacted media have not been determined.

1.3 EPA IDENTIFICATION NUMBER

The site's EPA Identification Number is MIK752366161, which is assigned to Enbridge Energy Partners, L.P. The Company will follow all waste manifesting and reporting requirements.

OIL RECLAMATION

Recovered crude oil will be transported to the Company's Hartsdale Terminal in Griffith, Indiana, where the quality of the oil will be evaluated. If the oil quality is acceptable, the recovered product will be shipped by pipeline to a refinery for processing. If the oil quality is not acceptable, other options for oil processing and recycling will be evaluated. Currently a profile is being prepared with Dynecol, Detroit for processing/recycling of Recoverable Petroleum Product (RPP).

SECTION 2 WASTE MANAGEMENT

Impacted media requiring treatment and disposal will likely include water, soil, sediment, vegetation and industrial waste generated as a result of recovery efforts. The Company has contracted with a number of waste disposal companies for this response with the capabilities to treat, transport, and dispose of many types of impacted media. Identified disposal companies are listed in **Table 1**, below. The Company may identify additional disposal facilities not currently listed. Any waste vendor used by the Company must first be approved by United States Environmental Protection Agency (U.S. EPA) to be in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Off-Site Rule. The Company will coordinate the compliance check process (40CFR122.3) with Mr. Will Damico, U.S. EPA Region 5 (312-353-8207; Damico.Will@epa.gov). If Mr. Damico (or designate) agrees, written confirmation will be requested by the Company to document U.S. EPA approval.

Following is a summary of potential waste management practices for each impacted media currently expected to be generated at the site.

2.1 WATER TREATMENT AND DISPOSAL

The Company has identified numerous options for the treatment and disposal of wastewater from the site. Other disposal facilities and treatment technologies may be employed as identified by the Company and approved by the U.S. EPA. Results of initial water samples from frac tanks indicate that the concentration of benzene in water exceeds 0.5 milligrams per liter, which under Resource Conservation and Recovery Act (RCRA) regulations would be considered a characteristic hazardous waste.

Currently, mixed oil/water from the release source area, Talmadge Creek and the Kalamazoo River is being recovered and transported to frac tanks staged primarily adjacent to the release site (Division A). Other wastewater streams generated during the project include decontamination water, both at the recovery sites and at the wildlife recovery facility. Initially, the Company proposes to dispose of hazardous water at Dynecol in Detroit, Michigan. According to information provided by Dynecol, its total maximum daily capacity is 144,000 gallons per day, of which 100,000 to 144,000 is generally available to the Company on a day to day basis depending on disposal volumes from other generators. Initial disposal of water as hazardous waste early in the recovery phase facilitates ongoing recovery of oil and impacted water from the source area and can accelerate the recovery phase. The Company proposes to dispose of hazardous water at a RCRA hazardous waste facility until such time as an on-site treatment system is in place and approved by U.S. EPA.

If necessary, the Company is planning for potential deployment of an on-site water treatment system to reduce contaminant concentrations in the wastewater. The system could be used to reduce concentrations to below hazardous levels prior to disposal and may reduce contaminant concentrations to acceptable levels for discharge directly to Talmadge Creek if approved by U.S. EPA. The proposed on-site treatment system will likely consist of a first phase of natural gravity separation of mixed oil and water in the frac tanks, and subsequent treatment of only the water portion with carbon filtration. Once filtered, the treated water will be placed in dedicated frac tanks for filtered water only, characterized and disposed of at an off-site facility or on-site if levels are

acceptable. If suspended solids foul the carbon filtration system, additional components will be added to the treatment system as necessary to abate the particulate concentrations.

The Company has identified a number of potential waste disposal facilities for the water, including several publicly owned treatment works (POTWs) and industrial waste facilities (**Table 1**). Receiving POTW facilities will be approved by U.S. EPA and permits will be completed in accordance with POTW requirements. Treated water will be analyzed as required by the receiving POTW. If acceptable to U.S. EPA, the Company shall pursue on-site discharge of wastewater and attempt to meet Michigan National Pollutant Discharge Elimination System (NPDES) guidelines (40CFR122.3).

The Company also continues to investigate other disposal options through its consultants. Any alternatives will be presented to U.S. EPA for review.

2.2 SOIL TREATMENT AND DISPOSAL

The Company has identified several options for the treatment and disposal of impacted soil from the site. Other disposal facilities and treatment technologies may be employed as identified by the Company and approved by U.S. EPA. Results of initial soil samples are still pending. Impacted soil will be generated from source area excavation and likely from downstream bank and adjacent area cleanup activities.

For impacted soil removed from the source area, solidification of soils will be completed prior to transport through the addition of solidification enhancing material such as sawdust, sand, clay, corn cobs, lime, fluidized bed ash, etc. The impacted soil will be temporarily staged on containment pads located on-site. Currently, three containment pads (cells) are located at the source area and construction of a fourth cell is proposed. Soil solidification cells are constructed with a plastic liner and berms, and soils are appropriately sloped in accordance with best management practices (BMPs). Currently soils are being solidified with sawdust and sand. Any free fluids not contained through the mixing and solidification process are being absorbed directly with sawdust. If this current method proves to not be effective, other suitable sorbent materials and/or BMPs will be utilized as necessary to solidify soils and manage free fluids. Quality control will be performed to ensure that no free flowing fluids are placed into trucks or roll-off boxes. Weekly inspections of the cells will be conducted in accordance with BMPs.

The proposed plan for soil management at the source area relies on transportation of solidified soils in lined roll-off boxes from the source area to a temporary staging area, where the soils will be sampled and characterized for appropriate off-site disposal. This overall strategy facilitates continuous solidification, characterization, and disposal of impacted soils without adversely affecting ongoing operations within the source area. The Company has identified several potential temporary staging areas within the designated EPA Site ID for roll-off boxes and is currently planning for access to a suitable property. As conditions change at the source area, this proposed management strategy is subject to modification with U.S. EPA approval.

If removal of impacted soils is necessary along stream banks in downstream areas, treatment and transportation procedures will depend largely on the configuration of the impacted area. Due to limited space for staging along the stream banks, impacted soil

within the downstream areas will primarily be directly loaded to trucks for disposal. In-situ soils in the downstream area will be sampled, analyzed and characterized prior to loading and disposal at an appropriate facility approved by U.S. EPA. If space is available and soil staging is necessary in downstream impact areas, soils will be staged in accordance with BMPs including lining, sloping, berming, tarping, and collection of free fluids.

Any soils that are determined to be hazardous will be stabilized as necessary, based on the results of analytical sampling. Disposal options available for impacted soil include the following:

Landfilling of non-hazardous soils

Fuel blending, solidification and incineration for hazardous soils

Potential waste vendors identified by the Company for the disposal of hazardous and non-hazardous soil are listed in **Table 1**. Disposal facilities will be approved by U.S. EPA prior to use.

2.3 SEDIMENT TREATMENT AND DISPOSAL

If sediment is removed from the Talmadge Creek and/or Kalamazoo River, it will be disposed of based on analytical results and physical characteristics. If dewatering of sediment is necessary, stabilization may be conducted on-site. A proposed management strategy includes construction of a lined pad for staging and dewatering of sediment. Best management practices will be employed, including appropriate sloping of material and construction of containment berms and a water collection sump. Collected water will be managed in accordance with the wastewater treatment and disposal procedures presented above. If on-site treatment and/or dewatering of sediment are required, a Storm Water and Sediment Management Plan will be developed by the Company and approved by U.S. EPA prior to sediment removal.

2.4 VEGETATION TREATMENT AND DISPOSAL

Vegetative waste generated in the release area and downstream impact areas will likely consist of wetland and shoreline grasses, brush and trees. Depending on moisture content, cut grasses will be directly bagged and placed into roll-off boxes or staged on a pad for dewatering similar to the treatment of sediment discussed above. Disposal of vegetation will depend on analytical sampling results. Options for disposal include landfilling or possible incineration as approved by U.S. EPA.

2.5 INDUSTRIAL WASTE

Industrial waste being generated at the site includes booms, sorbent pads, rags, tools, and personal protective equipment (PPE). Industrial waste is being placed into double-lined dumpsters and staged near the release site. As of July 31, 2010, approximately twenty seven 20-cubic yard dumpsters were staged on-site containing industrial waste. Several waste vendors, pending U.S. EPA approval, have been identified for disposal of industrial waste. Options for disposal include landfilling or possible incineration.

Representative composite samples of industrial waste materials will be collected and analyzed in accordance with the project Sampling and Analysis Plan prior to

transportation and disposal. Analytical results will be used to characterize clean-up materials for appropriate disposal as either hazardous or non-hazardous industrial waste. Analytical results of initial samples from dumpsters are pending.

2.6 TRANSPORTATION

Trucks hauling waste materials from the Division A source area will be routed away from the Marshall population center via southbound Highway 227 and westbound F Drive S (227) to Interstate 69 (I-69). From I-69, trucks have access to eastbound and westbound I-94. The local truck route from the source area to I-69 is depicted in **Figure 3**.

Trucks used for the transportation of impacted soils will be lined, covered, and placarded in accordance with U.S. Department of Transportation (U.S. DOT) requirements and all other applicable State or County requirements. All transporters will satisfy the U.S. DOT requirements for transporting hazardous materials under 49 CFR 172 by carrying a hazardous materials license.

The Company will manage the distribution of all transportation paperwork. A uniform hazardous waste manifest will be used for transportation of all hazardous wastes. Michigan Department of Natural Resources and the Environment (MDNRE) requires use of uniform hazardous waste manifests for industrial liquid waste, including non-hazardous waste. This rule applies to wastewaters processed through treatment systems, such as the proposed carbon filtration system. At this time, it is anticipated that bill of ladings will be used for all other non-hazardous waste streams. Copies of transportation and disposal forms will be distributed to the appropriate agencies within the required timeframes. In addition, copies of all analytical results, bill of ladings, manifest and landban forms will be supplied to U.S. EPA.

2.7 CONTINGENCY PLANNING

As of August 3, 2010, there are approximately ninety 20,000-gallon frac tanks staged at the Frac Tank Farm established off Division Drive near the source area (Division A). Currently individual tanks and collections of tanks have sorbent booms around them. The Company is planning to construct a more comprehensive secondary containment system. A Secondary Containment Plan for the Frac Tank Farm will be developed by August 6, 2010 and submitted to U.S. EPA for review and approval.

If the Company wishes to propose an action, revision or change that is not identified in this Plan, the Company shall request approval of the action, revision or change from the Incident Commander. To initiate the process, a written request will be submitted by the Company to the Incident Commander outlining the proposed action, revision or change to be utilized and the benefits to be derived from its execution. The Incident Commander shall then approve or disapprove in writing or discuss potential alternatives.

2.8 TRACKING AND REPORTING (Added August 8, 2010)

The company will submit on a weekly basis, beginning August 9, 2010, a written report to EPA providing the cumulative amount of oil attributable to Enbridge's pipeline spill in Michigan that

has been sent to Enbridge's Griffith, Indiana location or to any other off-site location. For purposes of this report, the volume of crude oil will be after the Company has separated it from any water. This will be done by gauging the volume of crude oil on the oil/water mixture in each truck that is shipped to the Griffith facility (or any other facility) and then metering the flow of the oil and water into the facility process. The Company shall provide EPA with access to confirm, with independent gauging devices, readings obtained at the Griffith facility. All gauging measurements and petroleum product estimates prior to the establishment of this procedure will be provided as a separate document.

In addition, the above mentioned weekly report will include a summary of crude oil-contaminated soils and contaminated debris waste streams, which have been shipped for off-site disposal. This report will include detail regarding waste profile and supporting data for each waste stream. Such supporting data will include total petroleum hydrocarbon content. Methods for calculating the total petroleum hydrocarbon content will be included with the first report.

Table 1. WASTE MANAGEMENT VENDORS

Wastestream	Disposal Company	EPA ID Number	Treatment Option	Transporter
Waste Water (Hazardous)	Dynecol	MID 074 259 565	Wastewater Treatment	PVS Transportation HM Environmental
Waste Water (Hazardous)	EQ Detroit, Inc	MID 000 724 831 MID 980 991 566	Stabilization, Fuel Blending, Incineration	EQ
Waste Water (Non-Hazardous)	Dynecol , Inc.	MID 074 259 565	Wastewater Treatment	PVS Transportation HM Environmental
Waste Water (Non-Hazardous)	EQ Detroit, Inc.	MID 980 991 566	Recycle/Reclaim	EQ
Waste Water (Non-Hazardous)	Liquid Industrial Waste Services	MID 006 546 121	Wastewater Treatment	LIWS
Waste Water (Non-Hazardous)	Marshall POTW Muskegon POTW Kalamazoo POTW Battle Creek POTW		Waste Water Treatment POTW	LIWS, Clean Harbors, EQ
Hazardous Solids (Dumpsters and Soils)	Envirosafe Services of OH	OHD045243706	Landfill	Safety Kleen
Hazardous Solids (Dumpsters and Soils)	EQ Michigan Disposal	MID 048 090 633	Landfill	EQ
Non-Hazardous Waste Solid	Republic Services C&C Landfill	MID 985 618 420	Landfill	Republic Waste of West Michigan

Figures

Enbridge Line 6B MP 608
Marshall, Michigan Pipeline Release
Waste Treatment, Transportation and Disposal Plan

August 2, 2010
(Revised August 8, 2010
per U.S. EPA August 7, 2010, Notice of Approval With Modifications)

SECTION 1 INTRODUCTION

This Waste Treatment, Transportation, and Disposal Plan (Plan) has been prepared for Enbridge Energy, Limited Partnership (Company) for the crude oil release site in Marshall, Michigan **(Figures 1 and 2)**.

1.1 OBJECTIVES

The Plan's objectives are to comply with Federal, State and County waste regulations, prevent or minimize human health and environmental risks associated with managing petroleum contaminated media, and to provide a beneficial reuse of the material where feasible.

1.2 TYPE AND QUANTITY OF WASTE

The released petroleum product is a crude oil. The Material Safety Data Sheet (MSDS) for the product is attached. Released crude oil has impacted soil, surface water, vegetation and potentially sediment. At this time, quantities of impacted media have not been determined.

1.3 EPA IDENTIFICATION NUMBER

The site's EPA Identification Number is MIK752366161, which is assigned to Enbridge Energy Partners, L.P. The Company will follow all waste manifesting and reporting requirements.

OIL RECLAMATION

Recovered crude oil will be transported to the Company's Hartsdale Terminal in Griffith, Indiana, where the quality of the oil will be evaluated. If the oil quality is acceptable, the recovered product will be shipped by pipeline to a refinery for processing. If the oil quality is not acceptable, other options for oil processing and recycling will be evaluated. Currently a profile is being prepared with Dynecol, Detroit for processing/recycling of Recoverable Petroleum Product (RPP).

SECTION 2 WASTE MANAGEMENT

Impacted media requiring treatment and disposal will likely include water, soil, sediment, vegetation and industrial waste generated as a result of recovery efforts. The Company has contracted with a number of waste disposal companies for this response with the capabilities to treat, transport, and dispose of many types of impacted media. Identified disposal companies are listed in **Table 1**, below. The Company may identify additional disposal facilities not currently listed. Any waste vendor used by the Company must first be approved by United States Environmental Protection Agency (U.S. EPA) to be in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Off-Site Rule. The Company will coordinate the compliance check process (40CFR122.3) with Mr. Will Damico, U.S. EPA Region 5 (312-353-8207; Damico.Will@epa.gov). If Mr. Damico (or designate) agrees, written confirmation will be requested by the Company to document U.S. EPA approval.

Following is a summary of potential waste management practices for each impacted media currently expected to be generated at the site.

2.1 WATER TREATMENT AND DISPOSAL

The Company has identified numerous options for the treatment and disposal of wastewater from the site. Other disposal facilities and treatment technologies may be employed as identified by the Company and approved by the U.S. EPA. Results of initial water samples from frac tanks indicate that the concentration of benzene in water exceeds 0.5 milligrams per liter, which under Resource Conservation and Recovery Act (RCRA) regulations would be considered a characteristic hazardous waste.

Currently, mixed oil/water from the release source area, Talmadge Creek and the Kalamazoo River is being recovered and transported to frac tanks staged primarily adjacent to the release site (Division A). Other wastewater streams generated during the project include decontamination water, both at the recovery sites and at the wildlife recovery facility. Initially, the Company proposes to dispose of hazardous water at Dynecol in Detroit, Michigan. According to information provided by Dynecol, its total maximum daily capacity is 144,000 gallons per day, of which 100,000 to 144,000 is generally available to the Company on a day to day basis depending on disposal volumes from other generators. Initial disposal of water as hazardous waste early in the recovery phase facilitates ongoing recovery of oil and impacted water from the source area and can accelerate the recovery phase. The Company proposes to dispose of hazardous water at a RCRA hazardous waste facility until such time as an on-site treatment system is in place and approved by U.S. EPA.

If necessary, the Company is planning for potential deployment of an on-site water treatment system to reduce contaminant concentrations in the wastewater. The system could be used to reduce concentrations to below hazardous levels prior to disposal and may reduce contaminant concentrations to acceptable levels for discharge directly to Talmadge Creek if approved by U.S. EPA. The proposed on-site treatment system will likely consist of a first phase of natural gravity separation of mixed oil and water in the frac tanks, and subsequent treatment of only the water portion with carbon filtration. Once filtered, the treated water will be placed in dedicated frac tanks for filtered water only, characterized and disposed of at an off-site facility or on-site if levels are

acceptable. If suspended solids foul the carbon filtration system, additional components will be added to the treatment system as necessary to abate the particulate concentrations.

The Company has identified a number of potential waste disposal facilities for the water, including several publicly owned treatment works (POTWs) and industrial waste facilities (**Table 1**). Receiving POTW facilities will be approved by U.S. EPA and permits will be completed in accordance with POTW requirements. Treated water will be analyzed as required by the receiving POTW. If acceptable to U.S. EPA, the Company shall pursue on-site discharge of wastewater and attempt to meet Michigan National Pollutant Discharge Elimination System (NPDES) guidelines (40CFR122.3).

The Company also continues to investigate other disposal options through its consultants. Any alternatives will be presented to U.S. EPA for review.

2.2 SOIL TREATMENT AND DISPOSAL

The Company has identified several options for the treatment and disposal of impacted soil from the site. Other disposal facilities and treatment technologies may be employed as identified by the Company and approved by U.S. EPA. Results of initial soil samples are still pending. Impacted soil will be generated from source area excavation and likely from downstream bank and adjacent area cleanup activities.

For impacted soil removed from the source area, solidification of soils will be completed prior to transport through the addition of solidification enhancing material such as sawdust, sand, clay, corn cobs, lime, fluidized bed ash, etc. The impacted soil will be temporarily staged on containment pads located on-site. Currently, three containment pads (cells) are located at the source area and construction of a fourth cell is proposed. Soil solidification cells are constructed with a plastic liner and berms, and soils are appropriately sloped in accordance with best management practices (BMPs). Currently soils are being solidified with sawdust and sand. Any free fluids not contained through the mixing and solidification process are being absorbed directly with sawdust. If this current method proves to not be effective, other suitable sorbent materials and/or BMPs will be utilized as necessary to solidify soils and manage free fluids. Quality control will be performed to ensure that no free flowing fluids are placed into trucks or roll-off boxes. Weekly inspections of the cells will be conducted in accordance with BMPs.

The proposed plan for soil management at the source area relies on transportation of solidified soils in lined roll-off boxes from the source area to a temporary staging area, where the soils will be sampled and characterized for appropriate off-site disposal. This overall strategy facilitates continuous solidification, characterization, and disposal of impacted soils without adversely affecting ongoing operations within the source area. The Company has identified several potential temporary staging areas within the designated EPA Site ID for roll-off boxes and is currently planning for access to a suitable property. As conditions change at the source area, this proposed management strategy is subject to modification with U.S. EPA approval.

If removal of impacted soils is necessary along stream banks in downstream areas, treatment and transportation procedures will depend largely on the configuration of the impacted area. Due to limited space for staging along the stream banks, impacted soil

within the downstream areas will primarily be directly loaded to trucks for disposal. In-situ soils in the downstream area will be sampled, analyzed and characterized prior to loading and disposal at an appropriate facility approved by U.S. EPA. If space is available and soil staging is necessary in downstream impact areas, soils will be staged in accordance with BMPs including lining, sloping, berming, tarping, and collection of free fluids.

Any soils that are determined to be hazardous will be stabilized as necessary, based on the results of analytical sampling. Disposal options available for impacted soil include the following:

Landfilling of non-hazardous soils

Fuel blending, solidification and incineration for hazardous soils

Potential waste vendors identified by the Company for the disposal of hazardous and non-hazardous soil are listed in **Table 1**. Disposal facilities will be approved by U.S. EPA prior to use.

2.3 SEDIMENT TREATMENT AND DISPOSAL

If sediment is removed from the Talmadge Creek and/or Kalamazoo River, it will be disposed of based on analytical results and physical characteristics. If dewatering of sediment is necessary, stabilization may be conducted on-site. A proposed management strategy includes construction of a lined pad for staging and dewatering of sediment. Best management practices will be employed, including appropriate sloping of material and construction of containment berms and a water collection sump. Collected water will be managed in accordance with the wastewater treatment and disposal procedures presented above. If on-site treatment and/or dewatering of sediment are required, a Storm Water and Sediment Management Plan will be developed by the Company and approved by U.S. EPA prior to sediment removal.

2.4 VEGETATION TREATMENT AND DISPOSAL

Vegetative waste generated in the release area and downstream impact areas will likely consist of wetland and shoreline grasses, brush and trees. Depending on moisture content, cut grasses will be directly bagged and placed into roll-off boxes or staged on a pad for dewatering similar to the treatment of sediment discussed above. Disposal of vegetation will depend on analytical sampling results. Options for disposal include landfilling or possible incineration as approved by U.S. EPA.

2.5 INDUSTRIAL WASTE

Industrial waste being generated at the site includes booms, sorbent pads, rags, tools, and personal protective equipment (PPE). Industrial waste is being placed into double-lined dumpsters and staged near the release site. As of July 31, 2010, approximately twenty seven 20-cubic yard dumpsters were staged on-site containing industrial waste. Several waste vendors, pending U.S. EPA approval, have been identified for disposal of industrial waste. Options for disposal include landfilling or possible incineration.

Representative composite samples of industrial waste materials will be collected and analyzed in accordance with the project Sampling and Analysis Plan prior to

transportation and disposal. Analytical results will be used to characterize clean-up materials for appropriate disposal as either hazardous or non-hazardous industrial waste. Analytical results of initial samples from dumpsters are pending.

2.6 TRANSPORTATION

Trucks hauling waste materials from the Division A source area will be routed away from the Marshall population center via southbound Highway 227 and westbound F Drive S (227) to Interstate 69 (I-69). From I-69, trucks have access to eastbound and westbound I-94. The local truck route from the source area to I-69 is depicted in **Figure 3**.

Trucks used for the transportation of impacted soils will be lined, covered, and placarded in accordance with U.S. Department of Transportation (U.S. DOT) requirements and all other applicable State or County requirements. All transporters will satisfy the U.S. DOT requirements for transporting hazardous materials under 49 CFR 172 by carrying a hazardous materials license.

The Company will manage the distribution of all transportation paperwork. A uniform hazardous waste manifest will be used for transportation of all hazardous wastes. Michigan Department of Natural Resources and the Environment (MDNRE) requires use of uniform hazardous waste manifests for industrial liquid waste, including non-hazardous waste. This rule applies to wastewaters processed through treatment systems, such as the proposed carbon filtration system. At this time, it is anticipated that bill of ladings will be used for all other non-hazardous waste streams. Copies of transportation and disposal forms will be distributed to the appropriate agencies within the required timeframes. In addition, copies of all analytical results, bill of ladings, manifest and landban forms will be supplied to U.S. EPA.

2.7 CONTINGENCY PLANNING

As of August 3, 2010, there are approximately ninety 20,000-gallon frac tanks staged at the Frac Tank Farm established off Division Drive near the source area (Division A). Currently individual tanks and collections of tanks have sorbent booms around them. The Company is planning to construct a more comprehensive secondary containment system. A Secondary Containment Plan for the Frac Tank Farm will be developed by August 6, 2010 and submitted to U.S. EPA for review and approval.

If the Company wishes to propose an action, revision or change that is not identified in this Plan, the Company shall request approval of the action, revision or change from the Incident Commander. To initiate the process, a written request will be submitted by the Company to the Incident Commander outlining the proposed action, revision or change to be utilized and the benefits to be derived from its execution. The Incident Commander shall then approve or disapprove in writing or discuss potential alternatives.

2.8 TRACKING AND REPORTING (Added August 8, 2010)

The company will submit on a weekly basis, beginning August 9, 2010, a written report to EPA providing the cumulative amount of oil attributable to Enbridge's pipeline spill in Michigan that

has been sent to Enbridge's Griffith, Indiana location or to any other off-site location. For purposes of this report, the volume of crude oil will be after the Company has separated it from any water. This will be done by gauging the volume of crude oil on the oil/water mixture in each truck that is shipped to the Griffith facility (or any other facility) and then metering the flow of the oil and water into the facility process. The Company shall provide EPA with access to confirm, with independent gauging devices, readings obtained at the Griffith facility. All gauging measurements and petroleum product estimates prior to the establishment of this procedure will be provided as a separate document.

In addition, the above mentioned weekly report will include a summary of crude oil-contaminated soils and contaminated debris waste streams, which have been shipped for off-site disposal. This report will include detail regarding waste profile and supporting data for each waste stream. Such supporting data will include total petroleum hydrocarbon content. Methods for calculating the total petroleum hydrocarbon content will be included with the first report.

Table 1. WASTE MANAGEMENT VENDORS

Wastestream	Disposal Company	EPA ID Number	Treatment Option	Transporter
Waste Water (Hazardous)	Dynecol	MID 074 259 565	Wastewater Treatment	PVS Transportation HM Environmental
Waste Water (Hazardous)	EQ Detroit, Inc	MID 000 724 831 MID 980 991 566	Stabilization, Fuel Blending, Incineration	EQ
Waste Water (Non-Hazardous)	Dynecol , Inc.	MID 074 259 565	Wastewater Treatment	PVS Transportation HM Environmental
Waste Water (Non-Hazardous)	EQ Detroit, Inc.	MID 980 991 566	Recycle/Reclaim	EQ
Waste Water (Non-Hazardous)	Liquid Industrial Waste Services	MID 006 546 121	Wastewater Treatment	LIWS
Waste Water (Non-Hazardous)	Marshall POTW Muskegon POTW Kalamazoo POTW Battle Creek POTW		Waste Water Treatment POTW	LIWS, Clean Harbors, EQ
Hazardous Solids (Dumpsters and Soils)	Envirosafe Services of OH	OHD045243706	Landfill	Safety Kleen
Hazardous Solids (Dumpsters and Soils)	EQ Michigan Disposal	MID 048 090 633	Landfill	EQ
Non-Hazardous Waste Solid	Republic Services C&C Landfill	MID 985 618 420	Landfill	Republic Waste of West Michigan

Figures

N

= Calhoun County

= Kalamazoo County

= Enbridge Pipeline

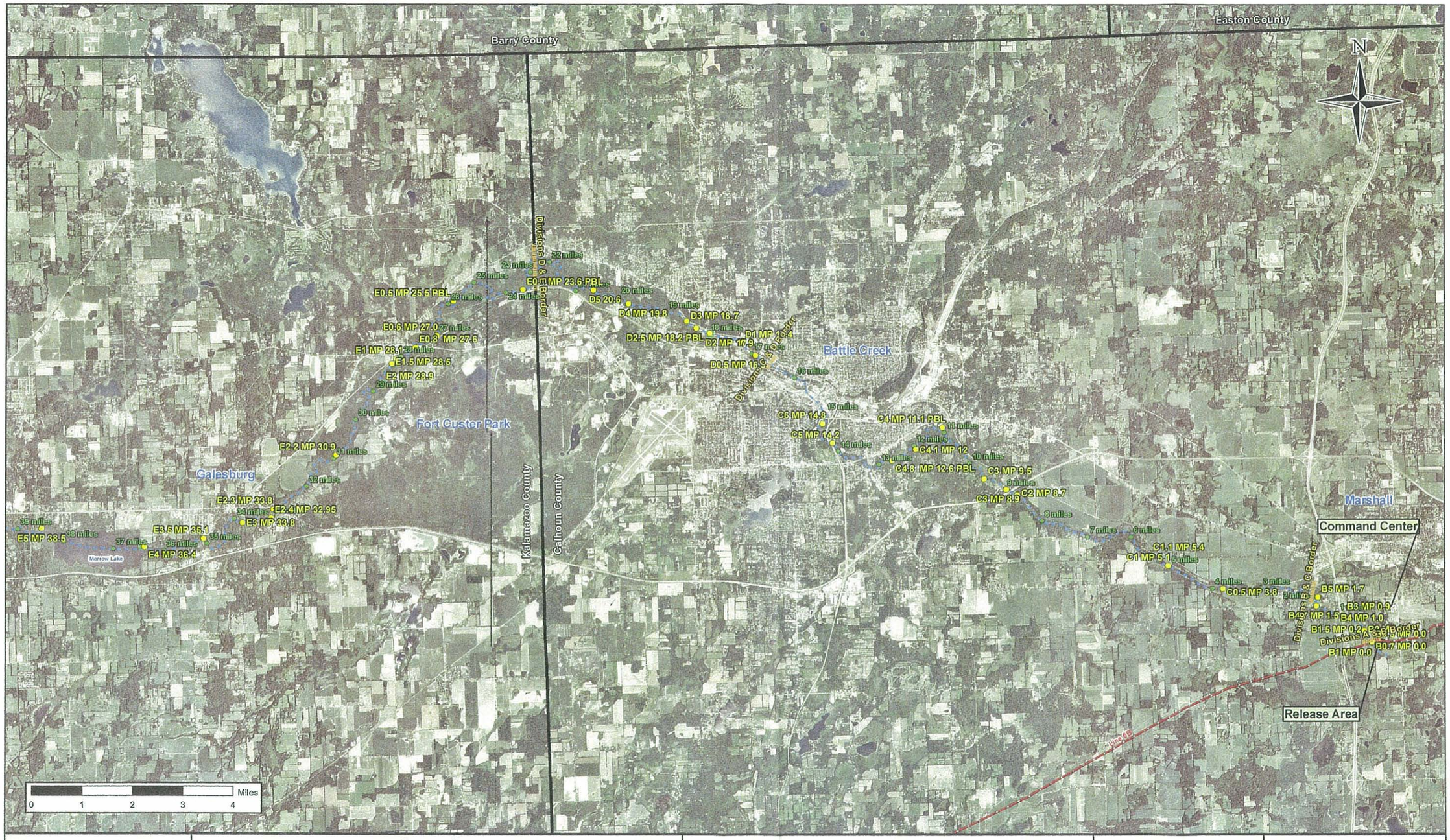
= Leak Site

ENBRIDGE™

0 50 100 150 200 Miles

Enbridge Energy, Limited Partnership
Line 6B MP 608 - Marshall, MI
EPA Report Figures
Figure 1: Site Location

DATE ISSUED: Aug 1, 2010
DATE REVISED:
SCALE: 1:1,500,000
DRAWN BY: NMS/JPM
SERIES: 1 of 3



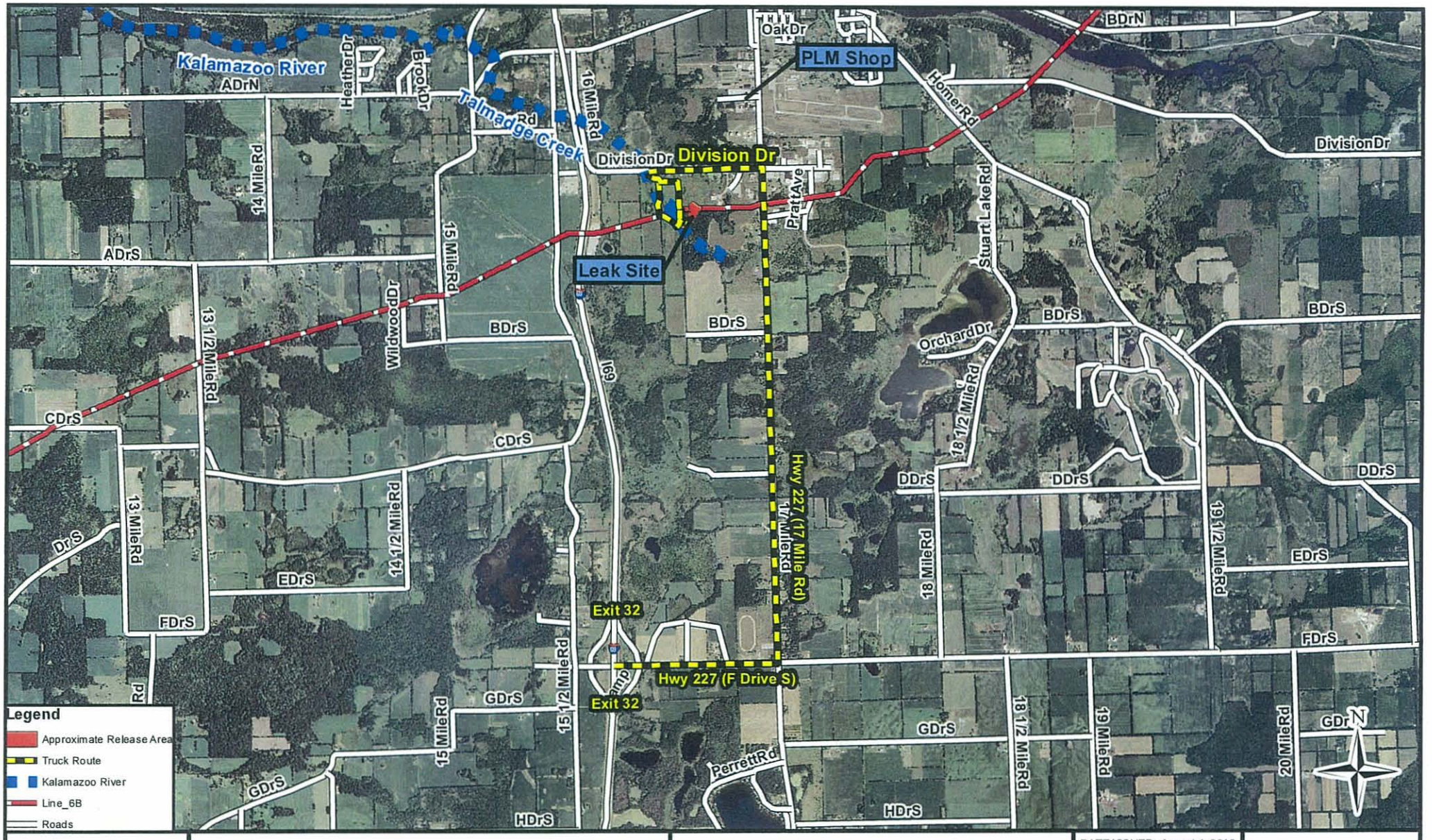
Legend

- Enbridge Pipeline
- River Centerline
- Major Road
- Division Boundary
- ☆ Release Location
- Downstream Milepost
- ○ Containment Site

ENBRIDGE

Enbridge Energy, Limited Partnership
Line 6B MP 608 - Marshall, MI
EPA Report Figures
Figure 2: Site Designation Map

DATE ISSUED:	Aug 1, 2010
DATE REVISED:	
SCALE:	1:60,000
DRAWN BY:	NMS/JPM
SERIES:	2 of 3



ENBRIDGE

Enbridge Energy, Limited Partnership
MP 608 - Marshall, MI
Figure 3: Trucking Route Map
Connecting Leak Site to I-69

DATE ISSUED:	August 1, 2010
DATE REVISED:	
SCALE:	1:52,000
DRAWN BY:	NMS/JPM/JDK
SERIES:	

Attachments

MSDS for Crude Oil

EnCana Corporation Material Safety Data Sheet

Heavy Crude Oil/Diluent Mix - Christina Lake/Foster Creek Page I of 2

SECTION 1 - MATERIAL IDENTIFICATION AND USE

Material Name: HEAVY CRUDE OIL/DILUENT MIX (CHRISTINA LAKE/FOSTER CREEK) Use: Process stream, fuels and lubricants production

WHMIS Classification: Class B, Div. 2, Class D, Div. 2, Sub-Div. A and B NFPA: Fire: 2 Reactivity: 0 Health: 3 TDG Shipping Name: Petroleum Crude Oil TDG Class: 3 UN: 1267

TDG Packing Group: II (boiling point 35 deg. C or above, and Hash point less than 23 deg. C)

Manufacturer/Supplier: ENCANA CORPORATION

//1800, 855 - 2nd Street S.W., P.O. BOX 2850,

CALGARY, ALBERTA, T2P 2S5

Emergency Telephone: 403-645-3333

Chemical Family: Crude oil/condensate mix

SECTION 2 - HAZARDOUS INGREDIENTS OF MATERIAL

Hazardous Approximate C.A.S. LD50/LC50 Exposure Ingredients Concentrations (%) Nos. Specify Species Limits & Route

Crude oil 50 - 70 8002-05-9 LD5(),rat, skin>2 g/kg 5 mg/m3 (OF.L.TLV) Hydrocarbon Diluent 30 - 50 N.Av. N.Av. 900 mg/m3 (OKL)* Benzene 0.03 - 0.3 71-43-2 LD50,rat,oral,930 mg/kg I ppm (OEL), LC50,ral,4 hr, 13200 ppm 0.5 ppm (TLV)

I Iydrogcn Sulphide <0.5 7783-06-04 LC50, rat, 4 hrs, 444 ppm 10 ppm (OEL.TLV)

OEL = 8 hr. Alberta Occupational Exposure Limit; TLV = Threshold Limit Value (8 hrs) *OHL for gasoline

SECTION 3 - PHYSICAL DATA FOR MATERIAL

Physical State: Liquid Vapour Pressure (kPa): 2.5 - 36.5 @ 20C

Specific Gravity: 0.65 - 0.75 Odour Threshold (ppm): N.Av.

Vapour Density (air=l): 2.5 -5.0 Evaporation Rate: N.Av.

Percent Volatiles, by volume: 20 - 30 (estimated) Boiling Pt. (deg.C): 40 - 180

pH: N.Av. Freezing Pt. (deg.C): <0

Coefficient of Water/Oil Distribution: O.I

Odour & Appearance: Brown/black liquid, hydrocarbon odour

(N.Av. = not available N.App. = not applicable)

SECTION 4 - FIRE AND EXPLOSION

Flainmability: Yes Conditions: Material will ignite at normal temperatures.

Means of Extinction: Foam, C02, dry chemical. Explosive accumulations can build up in areas of poor ventilation. Special Procedures: Use water spray to cool fire-exposed containers, and to disperse vapors if spill has not ignited. Cut off fuel and allow flame to bum out. Flash Point (deg.C) & Method: <-35 (PMCC)

Upper Explosive Limit (% by vol.): 8 (estimated) Sensitivity to Impact: No

Lower Explosive Limit (% by vol.): 0.8 (estimated) Sensitivity to Static Discharge: Yes, at normal temperatures Auto-Ignition Temp. (deg.C): 250 (estimated) TDG Flammability Classification: 3 Hazardous Combustion Products: Carbon monoxide, carbon dioxide, sulphur oxides

SECTION 5 - REACTIVITY DATA

Chemical Stability: Stable Conditions. Heat

Incompatibility: Yes Substances: Oxidizing agents (e.g. chlorine)

Reactivity: Yes Conditions: Heat, strong sunlight

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, sulphur oxides

EnCana Corporation Material Safety Data Sheet

Heavy Crude Oil/Diluent Mix - Christina Lake/Foster Creek Page 2 of 2

SECTION 6 - TOXICOLOGICAL PROPERTIES OF PRODUCT

Routes of Entry:

Skin Absorption : Yes Skin Contact: Yes Eye Contact: Yes Inhalation: Acute: Yes Chronic: Yes Ingestion: Yes

Effects of Acute Exposure: Vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. Contact with

skin may cause irritation and possibly dermatitis. Contact of liquid with eyes may cause severe irritation/burns. Effects of Chronic Exposure: Due to presence of benzene, long term exposure may increase the risk of anemia and

leukemia. Repeated skin contact may increase the risk of skin cancer. Sensitization to Product: No.

Exposure Limits of Product: I ppm (Alberta 8 hr OEI. for benzene) Irritancy: Yes

Synergistic Materials: None reported

Carcinogenicity: Yes Reproductive Effects: Possibly Teratogenicity: Possibly Mutagenicity: Possibly

SECTION 7 - PREVENTIVE MEASURES

Personal Protective Equipment: Use positive pressure self-contained breathing apparatus, supplied air breathing apparatus or cartridge air purifying respirator approved for organic vapours where concentrations may exceed exposure

limits (note: cartridge respirator not suitable for hydrogen sulphide, oxygen deficiency or IDLH situations) - sec also

Storage below).

Cloves: Viton (nitrile adequate for short exposure to liquid)

Eye: Chemical splash goggles. Footwear: As per safety policy Clothing: As per fire protection policy Engineering Controls: Use only in well ventilated areas. Mechanical ventilation required in confined areas. Equipment

must be explosion proof.

Leaks & Spills: Stop leak if safe to do so. Use personal protective equipment. Use water spray to cool containers. Remove all ignition sources. Provide explosion-proof clearing ventilation, if possible. Prevent from entering confined

spaces. Dyke and pump into containers for recycling or disposal. Notify appropriate regulatory authorities. Waste Disposal: Contact appropriate regulatory authorities for disposal requirements.

Handling Procedures & Equipment: Avoid contact with liquid. Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions.

Storage Requirements: Store in a cool, dry, well ventilated area away from heat, strong sunlight, and ignition sources.

Caution: hydrogen sulphide may accumulate in headspaces of tanks and other equipment, even when concentrations in the

liquid product are low. Overexposure to hydrogen sulphide may cause dizziness, headache, nausea and possibly knockdown

and death. Factors increasing this risk include heating, agitation and contact of the liquid with acids or acid salts. Assess the exposure risk by gas monitoring. Wear air supplying breathing apparatus if necessary. Special Shipping Provisions: N.App.

SECTION 8 - FIRST AID MEASURES

Skin: Flush skin with water, removing contaminated clothing. Get medical attention if irritation persists or large area of contact. Decontaminate clothing before re-use.

Eye: Immediately flush with large amounts of luke warm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation persists.

Inhalation: Ensure own safety. Remove victim to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention immediately.

Ingestion: Give 2-3 glasses of milk or water to drink. DO NOT INDUCE VOMITING. Keep warm and at rest. Get immediate medical attention.

SECTION 9 - PREPARATION DATE OF MSDS

Prepared By: EnCana Environment, Health and Safety (EHS)

Phone Number: (403) 645-2000 Preparation Date: October 15, 2008 Expiry Date: October 15, 2011

Mayflower, AR WASTE DISPOSAL PLAN
Disposal Plan for Mayflower Pipeline Incident

Mayflower Pipeline Incident
Responsible Party: ExxonMobil Pipeline Company
Spilled Material: Crude Oil, Heavy - API Gravity 19
Spill Location: Mayflower, AR
Spill Date/Time: 03/29/13 1500 hrs
Report Update Time: 4/5/2013 11:15 AM

Disposal Plan Authorization

This plan is written at the request of the United States Environmental Protection Agency (USEPA) and the Arkansas Department of Environmental Quality (ADEQ). The responsible party will recover the maximum feasible amount of oil spilled during the above named incident. In addition, an unknown quantity of oily waste debris (including vegetation, sorbents, boom, trash etc.) will be recovered. When disposing of this material, the responsible party will abide by all applicable state, local and federal waste disposal laws and regulations. Disposed material will be tracked to provide an accurate means of estimating total oil recovered.

This plan may be amended as necessary to ensure compliance with all applicable laws and regulations. Amendment may occur only upon mutual agreement of the responsible party, the Federal OSC (USEPA), and/or the State OSC (ADEQ).

Submittal and Approval:

Operations Section Chief

Planning Section Chief 4/5/13

Logistics Section Chief

Finance Section Chief 4/5/2013

Approved by FOSC: _____ Date: 4-5-13

Approved by SOSC: _____ per J Hyman Date: 4-5-13

Approved by LOSC: _____ Date: 4-5-13

Waste Disposal Guidelines

Recovered materials will be separated by waste stream type and location where the waste was recovered. Copies of all shipping papers, Bills of Lading (BOL) and manifests (non-hazardous or hazardous) will be provided to appropriate regulatory agencies upon request.

Liquids

Liquids will be transported to the incident staging areas and held in secure tanks for gauging to determine oil content. Oil will be recovered from the tanks to the extent practicable. Once a waste profile is completed for the remaining impacted oil/water mixture, the impacted oil/water will be transported to either the ExxonMobil Conway Terminal, an Operations Group established staging area or an approved waste disposal site (see **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES)**. Additionally, see Appendix A for Impacted Water Transfer Plan– post 4/2/13 prior to material TCLP profiling.

Liquids recovered during flushing, steam cleaning and/or decontamination operations should be kept separate from recovered free floating oil.

Solids

Recovered oiled solid materials will be placed in roll-off bins (properly lined with functioning door seals) or over-pack drums.

Oiled solids (e.g., sorbents, debris, soil, PPE, vegetation, etc.) shall be segregated from non-oiled trash/garbage. Oiled vegetation should be segregated from oiled sorbent/debris as much as possible. If oiled solids are to be bagged, clear bags will be utilized. Until the oiled solids have been profiled, the oiled solids will be shipped from the on-site storage areas to the Conway Terminal as hazardous waste per the instruction and approval of the USEPA and ADEQ until a waste profile is complete (see Residential Soil and Debris Transfer Plan attached in Appendix B).

Vegetation/Wildlife

oiled vegetation removed in the cleanup operation can be bagged in clear bags prior to storage in rolloffs. Oiled vegetation should be segregated from oiled sorbent/debris as much as possible. Contact Ronda Murgatroyd of Wildlife Response Services, LLC at 713-705-5897 for the collection of any oiled animal or animal carcass.

Decontamination Waste

Refer to the Mayflower, AR Pipeline Incident Decontamination Plan. See Appendix D.

Decontamination areas will be established at areas of active work requiring field personnel involved in waste collection and locations where heavy equipment is utilized in

the waste collection operation. Decontamination areas will be lined with visqueen and industrial matting that can be disposed of after closure of the decontamination area.

Cleaning systems for personnel, skimmers, hand tools, and heavy machinery are established at the decontamination unit, usually in the immediate vicinity of the temporary waste management area or located at other designated decontamination locations established for the spill cleanup effort. Transportation of materials to designated decontamination locations must be managed to prevent the runoff of entrained material while in transit.
All sheen/product from heavy equipment/vessel decontamination will be collected via absorbent pad/boom or trash pump transfer to a frac or Baker tank, or barge for reclamation and proper disposal.

General Guidelines

Clearly identify waste containers. Use a label or other means to clearly identify the contents of containers of hazardous, non-hazardous and inert wastes.

Waste streams will be characterized per Section 1 below to ensure the wastes are managed in accordance with federal and state hazardous waste regulations. The testing results will determine the final disposition and disposal of the waste.

Wastes accumulated in temporary storage locations will be categorized, segregated, inventoried and transported off-site for recycling or disposal.

Temporary storage of oil-contaminated materials will be in closed-top, 55-gallon drums, sealed plastic bags or roll-off bins, all segregated within the lined/bermed containment areas.

Solid waste can also be stockpiled in a lined/bermed area for subsequent off-site transport, treatment and disposal. See **SECTION III: INTERIM STORAGE, SEGREGATION, and TRACKING below for specifics. Appropriately contained solid waste will be removed to staging areas within 24 hours of generation at work zones.**

The following documentation will be filed with the Documentation Group of the NARRT:

Copies of Manifests/Bills of Lading

Copies of Waste Profile/Analyticals

Table of Contents

SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES

Matrix	Waste Type	Haz/Non-Haz or Other	Description	Containers	Waste Handling	Disposal Facility	Profile
Liquid	Petroleum Impacted Water	Non-Haz	Oily Water from recovery operations	Vacuum Truck	US Environmental Services	RineCo Chemical Industries 819 Vulcan Road Benton, AR 72015 (800) 377-4692	Needed
Liquid	Recovered Decontaminatio n Mixture	Haz	Recovered mixture from decontamination operations	Vacuum Truck and Frac Tanks	US Environmental Services	RineCo Chemical Industries 819 Vulcan Road Benton, AR 72015 (800) 377-4692	Needed
Liquid	Recovered Decontaminatio n Mixture	Non-Haz	Recovered mixture from decontamination operations	Vacuum Truck and Frac Tanks	US Environmental Services	RineCo Chemical Industries 819 Vulcan Road Benton, AR 72015 (800) 377-4692	Needed
Solids	Impacted Soil/Oiled Vegetation/Debri s	Haz	Soils from clean up operations; oily sorbents/boom, PPE; other oily debris	Lined Drop Box or Rolloff	US Environmental Services	RineCo Chemical Industries 819 Vulcan Road Benton, AR 72015 (800) 377-4692	Needed
Solids	Impacted Soil/Oiled vegetation/Debri s	Non-Haz	Soils from clean up operations; oily sorbents/boom, PPE; other oily debris	Lined Drop Box or Rolloff	US Environmental Services	Republic (BFI) North Shelby Landfill 7111 Old Millington Rd Millington, TN 38053 (901) 872-7258	Needed
Solids	Debris	Non-Oily Solid Waste	Municipal Solid Waste from staging areas	Lined Drop Box or Rolloff	Local Permitted Waste Haulers	Conway Sanitation 4550 Hwy 64 West Conway, AR 72034 501.450.6155	None needed
Water Solids Mixture	Other	Non-Haz	Domestic Sewage from portable toilets	Sewage Pumping Truck	arkansas Portable Toilets	City of Mayflower Water/Wastewater Authority 2 Ashmore Drive Mayflower, AR 72106 501.470-1818	None needed
Animal Carcasses	Other	Special	Dead Animals generated during oil spill cleanup activities.	Plastic Bags	Wildlife Response Services, LLC	USES Facility 261 Newman Dr North Little Rock, AR 72117 (713) 705-5897	Available Anytime

Note: All hazardous and non-hazardous waste sites are on the ExxonMobil Approved Waste Site List

SECTION II: DESIGNATION

The spilled material will be designated as either hazardous or non-hazardous waste based on the following:

Review of product MSDS (Attachment C)
Analytical profile characterization of material

SECTION III: INTERIM STORAGE, SEGREGATION, and TRACKING

A. INTERIM STORAGE OF SOLID MATERIAL

Refer to the staging areas identified in the Decontamination Plan

B. SEGREGATION OF WASTE STREAMS

The cleanup operation will result in the generation of both solid and liquid wastes. The solid wastes will include the following waste streams: Non-Oiled Solid Waste; Oiled Soil & Debris; Oiled Wood Debris; Oiled PPE, Sorbents, Decon Materials and Plastics; Oiled Liner Material and animal carcasses. Liquid wastes will include Recovered Oil & Oily Liquids, Decontamination Liquids and Domestic Sewage. Solid waste should be segregated into three different categories as it is generated: Oily Waste, Regular Garbage and Animal Carcasses. Specific waste types, the designated waste handler and disposal facility is shown in Section I above. Waste disposition and recovery will be documented on ICS 209 as shown in the incident-specific plan.

1) Non-Oiled Solid Waste

All waste materials must be properly segregated. Special care should be taken not to mix the regular non-oiled garbage/trash with the oily waste especially at the clean-up sites. Regular non-oiled garbage/trash will include such items as paper, food, and cardboard. Regular non-oiled garbage/trash will be placed in black plastic bags and will be stored separately from the oily waste. A garbage dumpster will be placed at the nearest clean-up staging area for collection of the non-oily solid waste. The dumpster will be clearly labeled "Non-Oily Solid Waste". The garbage will be hauled to approved facilities identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.**

2) Oiled Solids: Vegetation and Soil

Oiled vegetation & soil will be collected both by hand and mechanical means. Backhoes and front-end loaders may be used to move contaminated vegetation and soil. Oily vegetation & soil will be bagged into clear plastic bags and segregated from oily solids consisting of PPE, sorbents, decon materials & plastics (see below). Oily vegetation & soil may also be placed into drums or loaded into dump trucks or roll offs lined with visqueen. The bags will be stored in lined rolloffs at staging areas (identified in SECTION VI of this PLAN) until hauled to the ExxonMobil Conway Terminal for temporary storage. The material will then be hauled to approved facilities identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.**

3) Oiled Solids: PPE, Sorbents, Decon Materials & Plastics
Oiled solid waste consisting of PPE, Sorbent Booms & Pads, decon materials and assorted plastics will be placed in clear plastic bags at a cleanup site. The bags will be stored in lined rolloffs at staging areas (identified in SECTION VI of this PLAN) until hauled to the ExxonMobil Conway Terminal for temporary storage.

4) Oiled Liners & Boom Material

Oiled liners generated from the transportation of oily soil & debris and oily boom will be stockpiled at a staging area outlined in the Decontamination Plan. An appropriate type of secondary containment must be utilized to ensure impacted materials are properly contained. Samples of the oily materials will be collected for analysis as described in Section VII. The liner will be packaged in super sacks or other appropriate containers as needed. If super sacks are used, they will be secured to a hopper to aid in the packaging process. Oily booms will be transferred into lined roll-off containers or an equivalent container.

If there are any free oily liquids on the liners, "Floor-dry", cement or other appropriate material will be used as an absorption and binding agent in the shipping container. The liners will be transported to approved facilities identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.**

5) Oil Liquid
Oil and oily liquid will be collected from impacted waters in accordance with the IAP. Oily water will be transferred into truck-mounted totes or transported in vac trucks. The oil will be transported to the nearest staging area for short term storage. The oily liquid will be sampled and analyzed as described in Section VII. The oily liquids will be transported in DOT approved containers to approved facilities identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.**

6) Decontaminated Liquid

Oil-impacted liquid generated during decontamination of personal protective gear, equipment, vessels and vehicles will be collected in the lined containment areas and pumped into a vac-truck. The liquid will be hauled in vac-trucks to an approved disposal facility or to a staging area to be transferred to oily water tanks for transport to an approved disposal facility identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.** Additional tankage to handle any excess volume of decontamination liquid generated will be used as necessary.

7) Domestic Sewage

Port-a-potties located at shoreline cleanup areas will be pumped at regular intervals. The sewage collected will be transported to an

approved disposal facility identified in **SECTION I: WASTE TYPES, HANDLERS and DISPOSAL FACILITIES.**

8) Animal Carcasses

Any dead wildlife (oiled or not) collected incidentally as part of debris removal should be segregated and set aside for assessment by wildlife experts. None of the animal carcasses will be disposed of since it is evidence per the NRDA. The wildlife experts will collect, tag and store the animal carcasses as evidence.

C. TRACKING

Appropriate waste bills of lading, manifests and waste tracking forms will be used to track each shipment of waste transported off site. See Appendix B for examples. Each shipment will be assigned a unique number which shall appear on the waste tracking form and the bill of lading or manifest.

D. DECANTING

Decanting can only be authorized per Federal On-scene Coordinator (FOSC) direction and approval.

SECTION IV: DECONTAMINATION

Refer to the Mayflower, AR Pipeline Incident Decontamination Plan.

Decontamination zones are identified in the Incident Decontamination Plan. Decontamination is required of all impacted equipment and personnel, including, but not limited to, impacted vessels, vehicles, reusable equipment and personnel.

Personnel decontamination zones consist of a lined area or decon pool for foot wash, a visqueen area for PPE doffing equipped with lined drums for used PPE, a hand wash station with porta-potty and two attendants.

SECTION V: ANIMAL CARCASSES

Refer to Section III B-8 for specific animal carcasses handling instructions.

SECTION VI: AREAS OF OPERATION – GPS of these locations is being worked

Diner Storage - 558 Arkansas 365, Mayflower, AR

Hwy 89 E Storage - 14 Mimosa Avenue, Mayflower, AR

MEMS - 2 Ashmore Dr , Mayflower, AR

CTEH Air Monitoring Base - 1-89 Satterfield Rd Mayflower, AR

Interstate Dr. Storage - 71-01 Interstate Dr. Mayflower, AR

Mark Dr. Staging Area - 3 Mark Dr. Mayflower, AR

Bingo Hall Storage - 2-98 Sublett Circle. Mayflower, AR

Hill Top Storage - 851 HWY 365 Mayflower, AR

SECTION VII: Sampling Program

A. Oiled Solids

three representative soil samples from the source area were taken and submitted on April 1, 2013 for TCLP characterized for ignitability, corrosivity, reactivity, metals (TCLP extractable), total mercury (EPA SW846), volatile organic compounds (TCLP extractable) and semi-volatile organic compounds (TCLP extractable). All samples were analyzed by Lancaster Labs, 2430 New Holland Pike Lancaster, PA.

After the waste characterization of these three soil samples are complete, a sampling procedure will be developed with the Arkansas DEQ for sampling of all remaining oiled solid wastes.

B. Oily Liquids or Decontamination Mixture

Five frac tank liquid samples were obtained from five different frac tanks with large amounts of recovered crude oil on April 2, 2013. These samples were taken for TCLP characterization of ignitability, corrosivity, reactivity, metals (TCLP extractable), total mercury (EPA SW846), volatile organic compounds (TCLP extractable) and semi-volatile organic compounds (TCLP extractable). All samples will be collected by CTEH and analyzed at Lancaster Labs. All samples are to be "rush" analyzed in order for ExxonMobil to receive results within 3 days of submittal to Lancaster Labs.

After the waste characterization of the first five frac tanks are complete, a sampling procedure will be developed with the Arkansas DEQ for sampling of all remaining frac tanks.

All samples will be collected by CTEH and analyzed at Lancaster Labs. All samples are to be "rush" analyzed in order for ExxonMobil to receive results within 3 days of submittal to Lancaster Labs.

Appendix A: Impacted Water Transfer Plan – Post 4/2/13

ExxonMobil Pipeline
Mayflower Pipeline Incident

April 2, 2013
7:00 Hours

Impacted Water Transfer Plan

Due to logistical concerns with the storage of recovered impacted water associated with the Mayflower Pipeline Incident, all parties agree to the following:

- As a result of the emergency response plan, impacted water recovered from Segments A, B, and C after 4/2/13 can be collected in vacuum trucks or tanker trucks and transported to the ExxonMobil Conway Terminal and transferred into a frac tank.
- The vacuum trucks or tanker trucks will be preliminarily manifested as non-hazardous waste using generator knowledge and stored at the Conway Terminal until the profiling has been completed.
- Water samples collected on 4/2/2013 out of the existing Frac tanks will be profiled by submitting samples to Lancaster Labs.
- The Frac tanks will be stored in the Conway Terminal with secondary containment.
- Based on the results of the profiling, the waste will be transported to the appropriate approved disposal facilities.

Approved by Federal OSC: USEPA Region XI

Print Name NICOLAS BURTON Signature _____ Date 04-02-13

Approved by State OSC: Arkansas DEQ

Print Name DEAN F. VANDECHOFF Signature _____ Date 04-02-13

Approved by Planning Section Chief

Print Name Peter A. Jensen Signature _____ Date 4-2-13

Approved by ExxonMobil Law

Print Name Vic Ryle, III Signature _____ Date 4/2/13

RECEIVED
APR - 3 2013
BY: 0755

Attachment B: Residential Soil and Debris Transfer Plan

Residential Impacted Soil Transfer Plan

Due to logistical concerns with storage of approximately 2,100 cubic yards of impacted soil on the residential properties in the North Woods subdivision of Mayflower, Arkansas all parties agree to the following:

- As a result of the emergency response plan, impacted soil from designated residences in the North Woods subdivision will be collected and stored in lined roll off boxes.
- The lined roll off boxes will be preliminary manifested as hazardous waste.
- Soil samples collected on 4/1/2013 at the source area will be submitted to Lancaster Labs for RCRA profiling.
- The lined roll off boxes will be transported from the North Woods subdivision to the ExxonMobil Conway Terminal. The Conway Terminal is not a RCRA approved TSD facility nor is it intended to be used as a RCRA approved TSD facility.
- The lined roll off boxes will be stored in the Conway Terminal with secondary containment until RCRA profiling is completed.
- Based on the results of the RCRA profiling, the waste will be transported to the appropriate RCRA approved disposal facilities.
- Under no conditions will the Conway Terminal become a RCRA TSD facility and/or transfer station due to any result of profiling.

Approved by Federal OSC: USEPA Region XI

Print Name William Rhoberts Signature [signature] Date 4/2/13

Approved by State OSC: Arkansas DEQ

Print Name DEAN F. VANDERHOFF Signature [signature] Date 04/02/13

Approved by Planning Section Chief

Print Name Peter A. Jeansen Signature [signature] Date 4/2/13

Approved by ExxonMobil Law

Print Name Vic Pyle Signature [signature] Date 4/2/13

Appendix C: Material Safety Data Sheet

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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **WABASCA HEAVY CRUDE OIL**
Product Description: Petroleum Crude Oil
Product Code: 949802-00, 97F826
Intended Use: Crude oil

COMPANY IDENTIFICATION

Supplier: **EXXONMOBIL UPSTREAM PRODUCTION**
EXXONMOBIL BUILDING
800 BELL STREET
HOUSTON, TX. 77002 USA

24 Hour Health Emergency 609-737-4411
ExxonMobil Transportation No. 281-834-3296 / EMERGENCY 800-424-9300

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
PETROLEUM CRUDE OIL	8002-05-9	100 %

Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
BENZENE	71-43-2	1 - 5%
CYCLOHEXANE	110-82-7	1 - 5%
ETHYL BENZENE	100-41-4	0.1 - 1%
HYDROGEN SULFIDE	7783-06-4	> 0.005 %
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	1 - 5%
POLYNUCLEAR AROMATIC HYDROCARBONS		> 0.1%
SULFUR	7704-34-9	> 1.0 %
TOLUENE	108-88-3	1 - 5%
XYLENES	1330-20-7	1 - 5%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an ignition.

POTENTIAL HEALTH EFFECTS

May cause cancer. Danger of adverse health effects by prolonged exposure. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. Hydrogen sulfide, a highly toxic gas, is expected to be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. May be irritating to the eyes, nose, throat, and lungs. Aliphatic hydrocarbon gases may build up in confined spaces and may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in narcosis, unconsciousness, and possibly lead to death. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11).

Target Organs: Nervous system | Blood and/or blood-forming organs | Lung | Skin |

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	2	Flammability:	3	Reactivity:	0
HMIS Hazard ID:	Health:	2*	Flammability:	3	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Highly flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Exposure to fire can generate toxic fumes. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Hydrogen sulfide, Smoke, Fume, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: <21°C (70°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic

vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Chemical goggles are recommended if splashes or contact with eyes is possible. Work gloves that are resistant to aromatic hydrocarbons are recommended. If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated. Note: gloves made of PVA are not water-resistant, and are not suitable for emergency use. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic and, if necessary, heat resistant and thermal insulated material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where indicated in local oil spill contingency plans.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Use booms as a barrier to protect shorelines. Use containment booms when the ambient temperature is below the flash point of the material. Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

H2S is present. Avoid all personal contact. Crude oils can contain trace levels of natural impurities including heavy metals, such as mercury, nickel or lead, as well as naturally occurring radioactive material. As the impurity content may concentrate during refining/processing, process operations, including equipment, materials and products should be evaluated to identify and manage any potential risks to health, safety or the environment or regulatory concerns.
Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. The toxic and olfactory (sense of smell) fatigue properties of hydrogen sulfide require that air monitoring alarms and respiratory protection be used where the concentration might be expected to reach a harmful level, such as in an enclosed space, heated transport vessel, or in a spill or leak situation.
Material may contain trace amounts of naturally occurring radioactive material (NORM), which will accumulate in process equipment and storage vessels. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection

Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			NOTE	Source
BENZENE		OSHA Action level	0.5 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm		N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	1 ppm		N/A	ExxonMobil
BENZENE		TWA	0.5 ppm		N/A	ExxonMobil
BENZENE		STEL	2.5 ppm		Skin	ACGIH
BENZENE		TWA	0.5 ppm		Skin	ACGIH
CYCLOHEXANE		TWA	1050 mg/m3	300 ppm	N/A	OSHA Z1
CYCLOHEXANE		TWA	100 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
HYDROGEN SULFIDE		Ceiling	20 ppm		N/A	OSHA Z2
HYDROGEN SULFIDE		Maximum concentration	50 ppm		N/A	OSHA Z2
HYDROGEN SULFIDE		STEL	14 mg/m3	10 ppm	N/A	ExxonMobil
HYDROGEN SULFIDE		TWA	7 mg/m3	5 ppm	N/A	ExxonMobil
HYDROGEN SULFIDE		STEL	5 ppm		N/A	ACGIH
HYDROGEN SULFIDE		TWA	1 ppm		N/A	ACGIH
N-HEXANE		TWA	1800 mg/m3	500 ppm	N/A	OSHA Z1
N-HEXANE		TWA	50 ppm		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

TOLUENE		Ceiling	300 ppm		N/A	OSHA Z2
TOLUENE		Maximum concentration	500 ppm		N/A	OSHA Z2
TOLUENE		TWA	200 ppm		N/A	OSHA Z2
TOLUENE		TWA	20 ppm		N/A	ACGIH
XYLENES		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
XYLENES		STEL	150 ppm		N/A	ACGIH
XYLENES		TWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Positive-pressure, air-supplied respirator in areas where H2S vapors may accumulate is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: Chemical goggles are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical / oil resistant clothing if contact with material is likely.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after

handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Dark Brown
Odor: Rotten Egg
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.661 - 1.013
Flash Point [Method]: <21°C (70°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 35°C (95°F)
Vapor Density (Air = 1): N/D
Vapor Pressure: 0 kPa (0 mm Hg) at 20 C - 106.4 kPa (800 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: >0.42 cSt (0.42 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -73°C (-100°F) - 48°C (118°F)
Decomposition Temperature: N/D

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): No end point data for material.	Not determined.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	May dry the skin leading to discomfort and dermatitis. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	Irritating and will injure eye tissue. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.
May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage.
Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.
Crude oil: Contains polycyclic aromatic compounds (PACs). Prolonged and / or repeated exposure by skin or inhalation of certain PACs may cause cancer of the skin, lung, and of other sites of the body. In animal studies, some crudes produced skin tumors in mice, while other crudes produced no tumors. Developmental studies of crude oil in lab animals showed reduced fetal weight and increased fetal resorptions at maternally toxic levels. Repeated dermal exposure to crude oils in rats resulted in toxicity to the blood, liver, thymus, and bone morrow.

Contains:

BENZENE: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. HYDROGEN SULFIDE : Chronic health effects due to repeated exposures to low levels of H_2S have not been established. High level (700 ppm) acute exposure can result in sudden death. High

concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of overexposure to H2S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucous membranes and the respiratory system and have been implicated in some eye damage.
NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.
N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.
TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.
ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHALENE	91-20-3	2, 5
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Low molecular wt. component -- Expected to be inherently biodegradable

High molecular wt. component -- Expected to biodegrade slowly.

Photolysis:

More water soluble component -- Expected to degrade at a moderate rate in water when exposed to sunlight.

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Components -- Has the potential to bioaccumulate.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Hazard Class & Division: 3
ID Number: 3494
Packing Group: II
ERG Number: 131
Label(s): 3 (6.1)
Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1), PG II

LAND (TDG)

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Hazard Class & Division: 3 (6.1)
UN Number: 3494
Packing Group: II

Footnote: If shipped over water, product TDG classification as shown below for SEA (IMDG).

SEA (IMDG)

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Hazard Class & Division: 3
EMS Number: F-E, S-E
UN Number: 3494
Packing Group: II
Marine Pollutant: Yes
Label(s): 3 (6.1)
Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1), PG II, (21°C c.c.), MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC
Hazard Class & Division: 3
UN Number: 3494
Packing Group: II
Label(s) / Mark(s): 3 (6.1)
Transport Document Name: UN3494, PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC, 3 (6.1), PG II

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

Complies with the following national/regional chemical inventory requirements:: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
POLYNUCLEAR AROMATIC HYDROCARBONS		> 0.1%

NAPHTHALENE	91-20-3	1 - 5%
N-HEXANE	110-54-3	1 - 5%
BENZENE	71-43-2	1 - 5%
CYCLOHEXANE	110-82-7	1 - 5%
XYLENES	1330-20-7	1 - 5%
PETROLEUM CRUDE OIL	8002-05-9	100 %

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
CYCLOHEXANE	110-82-7	1, 4, 13, 16, 17, 18, 19
ETHYL BENZENE	100-41-4	1, 4, 10
HYDROGEN SULFIDE	7783-06-4	1, 4
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 9, 10, 13, 16, 17, 18, 19
PETROLEUM CRUDE OIL	8002-05-9	13, 16, 17, 18, 19
SULFUR	7704-34-9	17, 19
TOLUENE	108-88-3	1, 4, 11, 13, 15, 16, 17, 18, 19
XYLENES	1330-20-7	1, 4, 9, 13, 15, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL
2 = ACGIH A1
3 = ACGIH A2
4 = OSHA Z
5 = TSCA 4
6 = TSCA 5a2
7 = TSCA 5e
8 = TSCA 6
9 = TSCA 12b
10 = CA P65 CARC
11 = CA P65 REPRO
12 = CA RTK
13 = IL RTK
14 = LA RTK
15 = MI 293
16 = MN RTK
17 = NJ RTK
18 = PA RTK
19 = RI RTK

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Protective Measures was modified.
Section 09: Boiling Point C(F) was modified.
Section 09: Pour Point C(F) was modified.
Section 09: Vapor Pressure was modified.
Hazard Identification: Health Hazards was modified.
Section 09: Relative Density - Header was modified.
Section 09: Flash Point C(F) was modified.
Section 09: Viscosity was modified.
Section 14: Transport Document Name was modified.
Composition: Component table was modified.
Section 15: List Citations Table was modified.
Section 11: Tox List Cited Table was modified.
Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table was modified.

Composition: Component table was modified.
Section 16: Health Hazards was modified.
Section 08: Exposure Limits Table was modified.
Section 11: Chronic Tox - Component was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 04: Pre-existing medical conditions which may be aggravated by exposure - Header was deleted.
Section 04: First Aid Pre-exsiting Medical Conditions was deleted.
THIS MSDS COVERS THE FOLLOWING MATERIALS: CRUDE OIL SOUR ("Sour" applied by definition of Society of Petroleum Engineers for oils containing sulfur compounds >1%)

PRECAUTIONARY LABEL TEXT:
Contains: PETROLEUM CRUDE OIL
DANGER!

HEALTH HAZARDS
May cause cancer. Danger of adverse health effects by prolonged exposure. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Section 11). Hydrogen sulfide may concentrate in confined spaces and cause irritation, unconsciousness and/or death.
Target Organs: Nervous system | Blood and/or blood-forming organs | Lung | Skin |

PHYSICAL HAZARDS
Extremely flammable. Material can accumulate static charges which may cause an ignition.

PRECAUTIONS
H2S is present. Avoid contact with skin. Avoid contact with eyes. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. The toxic and olfactory (sense of smell) fatigue properties of hydrogen sulfide require that air monitoring alarms and respiratory protection be used where the concentration might be expected to reach a harmful level, such as in an enclosed space, heated transport vessel, or in a spill or leak situation.

FIRST AID
Inhalation: Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

Eye: Flush thoroughly with water for at least 15 minutes. Get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

Appendix D: Mayflower, AR Pipeline Incident Decontamination Plan

Incident Decontamination Plan

Mayflower, AR Pipeline Incident

March 31, 2013

Overview

The March 29, 2013 Mayflower, AR Pegasus Pipeline oil spill has impacted portions of the Mayflower, AR community with API Gravity 19 Crude Oil. Response activities to this release could result in oil contamination of vessels, personnel, vehicles and re-useable equipment such as containment boom.

This Incident Decontamination Plan is intended to:

- Prevent or minimize environmental impacts resulting from oil contamination of response equipment, and
- Provide a methodology for the decontamination of personnel and personal vehicles.

This plan should be used to guide decontamination of personnel in staging areas, private vehicles, vehicles used to collect and/or transport waste, personnel and equipment on site, response vessels upon demobilization and re-usable equipment such as containment boom and ATV's. In addition, this plan is intended to help non-emergency response boat owners prevent damage and water quality impacts which may result from fouling of their vessels.

ON SHORE DECONTAMINATION

On shore decontamination stations for personnel, heavy equipment, transport vehicles, light craft and miscellaneous equipment will be designated by Operations and are deployed at all active work zones and where vacuum operations are occurring.

Decontamination operations will be sized to effectively meet site-specific needs, including medical oversight if required.

A) Personnel Decontamination

Appropriate decontamination stations for personal decontamination, both wet and dry as needed, will be established at the locations identified by Operations. Personnel exiting the exclusion or "hot" zone will pass through a decontamination station prior to coming into contact with uncontaminated areas. The decontamination process and steps are as described in the Health and Safety Plan.

Each incident staging area will include a decontamination zone with a decontamination kit sized to effectively meet the site-specific needs. The decontamination kit could include the following items:

Quantity	Unit	Description
1	Each	Handheld Radios
3	Each	Plastic Pools/Tubs
1	Gallon	Soap (Liquid)
2	Each	Long Handled Brushes

2	Each	Water/Wash Sprayers
2	Each	Port-A-Potties
2	Each	55 Gallon Drums
1	Each	Drum Overpacks
1	Each	Backhoe / Loader
2	Each	Roll Off Bin, 20 cu.yd
12	Each	Waders
12	Each	Tyvek Suits - Level D PPE
1	Each	Temporary Storage Tank, 20,000-gallon
1	Each	Vacuum Truck (3,000 Gallon)
1	Each	Pickup Truck
1	Each	Flat Bed Truck
1	Each	Small Boat w/ Motor
2	Each	Long Handled Shovels
1	Box	Wipes, Box of 1000
1	Each	Decon Trailers
1	Box	Rags (25 lb box)
1	Gallon	Waterless Hand Cleaner
1	Roll	Barricade Tape
1	Each	First Aid Kit
1	Each	Fire Extinguisher
1	Each	Eyewash Station
1	Each	Water Cooler (5 gallon)
1	Roll	Visqueen (20 x 20)
1	Roll	Sorbent Blanket (100' roll)
2	Roll	Duct Tape
1	Roll	Drum Liners (36" x 60"), roll of 50
1	Each	Air Horn
8	Each	Stakes (rebar or wooden)

B) Re-usable Equipment Decontamination

Equipment used in recovery operations on land, on-water and involved in shoreline recovery operations (such as vacuum trucks, other transport vehicles, ATV's, gators, waders and containment boom) can be re-used after decontamination.

Decontamination of reusable equipment will consist of the following:

- Equipment, including boom, will be cleaned by water washing (could include water pressure washing) to remove oil and other contaminants.
- All rinsate and contaminants will be captured using containment basins, and/or absorbent materials.
- Waste minimization practices are required.

C) On-Water Vessel Decontamination

If any on-water responding vessels (emergency and pleasure craft) transiting a spill zone may have become impacted by residual oil contact. In addition, oil may contact and adhere to non-emergency response boat hulls. Contact with oil can allow mobilization of oil from the spill area into non-impacted portions of an a regional aquatic system with vessel travel and thereby cause further water quality impacts. Contact with oil can also cause aesthetic impacts or other damage to the vessel itself. Thus, removal of oil from the exterior of vessel hulls is necessary.

1. Requests for decontamination will be generated by Operations once an ICS Form 221 Demobilization Check-out form indicates that a vessel is scheduled for demobilization. The vessel will undergo a gross decontamination procedure consisting of the following:
2. Sorbent rags will be used to wipe hulls dry to remove any gross residue.
3. This process will be repeated to clean all sides of the vessel.
4. Upon completion, the vessel will travel to the designated onshore decontamination facility for additional decontamination.

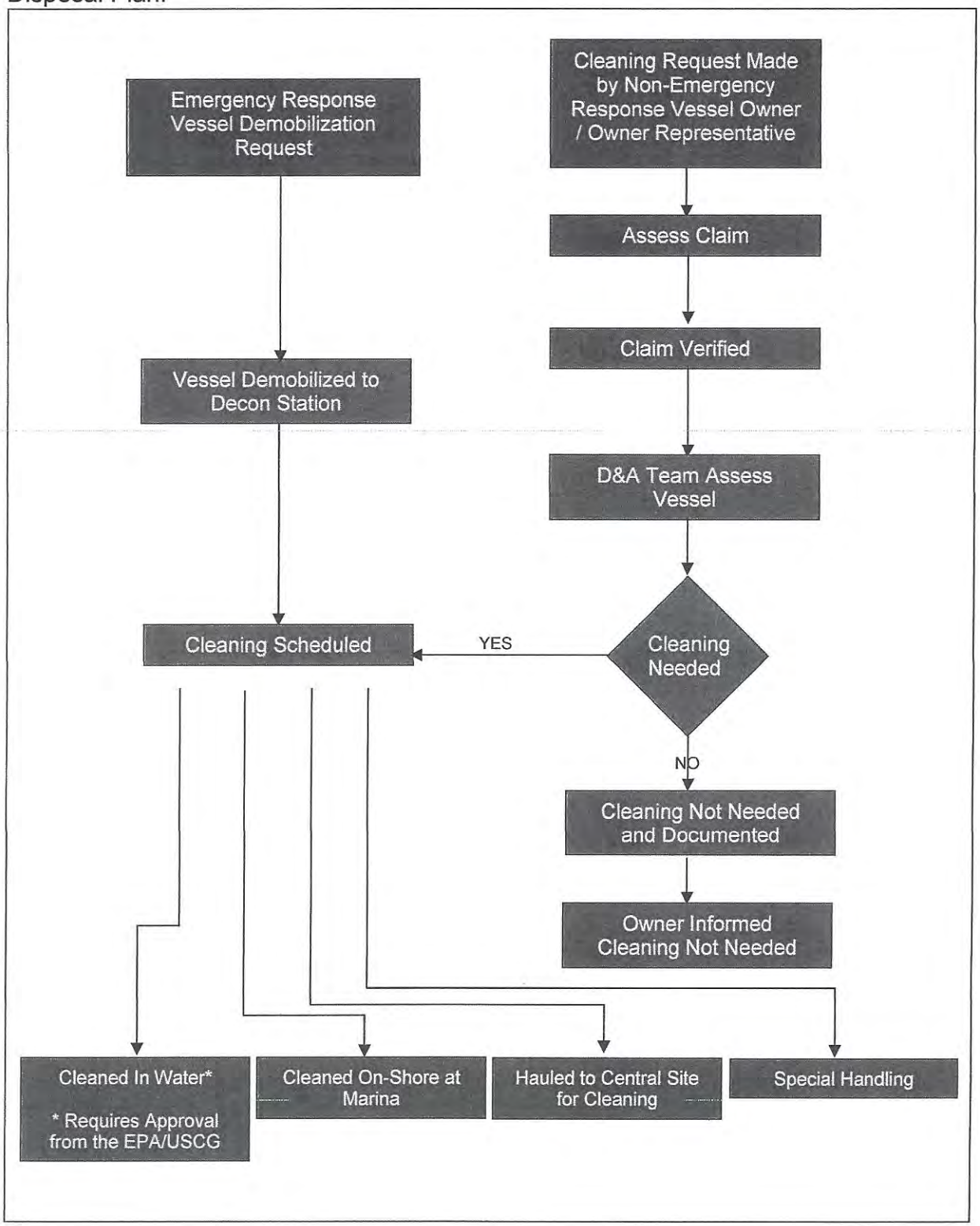
Enroute to the designated decontamination facility, cleaning assessments will be performed and additional cleaning measures undertaken on the water to ensure a clean vessel will dock at the closest vessel decontamination location identified by Operations (see list above). Cleaning procedures on water will follow the gross decontamination guidelines outlined above.

Decontamination procedures employed for vessels at vessel decontamination locations are as follows:

1. Vessels will be lifted out of the water by an on-site crane and placed in a lined containment area.
2. Manual scraping will be utilized as necessary to prepare the vessel hull for pressure washing.
3. Each vessel will be cleaned by hot water pressure washing to remove oil and other contaminants.
4. All rinsate and contaminants will be captured using containment basins, pumps and vacuum trucks.
5. Waste minimization practices are required.

Vessel containment/catch basins or diversionary structures will be constructed of suitable materials to prevent leaking of wash fluids and contaminants into the environment. They will be suitably sized to accommodate the equipment being cleaned. The Decontamination Group Supervisor will be tasked with documenting all clean up operations.

All contaminated debris and sludge created during the cleaning process will be removed and properly disposed per the Mayflower, AR Pegasus Incident Waste Disposal Plan.



D) Resident Automobile Decontamination
If any resident automobiles require decontamination, such activity will occur at appropriate decontamination stations established for on-shore vehicle decontamination.

Submittal and Approval:

Operations Section Chief

Planning Section Chief

Logistics Section Chief

Finance Section Chief

Approved by EPA Region 6: _____ Date: _____

Approved by Arkansas DEM: _____ Date: _____

Approved by Responsible Party: _____ Date: _____

Approved by other Local Government: _____ Date: _____