FEBRUARY 28 | 2023

Appendix Q: Oil Spill Response Plan

Coastal Virginia Offshore Wind Commercial Project

Dominion Energy®

Submitted by:
Dominion Energy Services, Inc.
600 East Canal Street,
Richmond, VA 23219

Prepared by:
Tetra Tech, Inc.
4101 Cox Road, Suite 120
Glen Allen, VA 23060

Submitted to:
Bureau of Ocean Energy Management
45600 Woodland Road
Sterling, VA 20166

COASTAL VIRGINIA OFFSHORE WIND (CVOW) COMMERCIAL PROJECT

OIL SPILL RESPONSE PLAN (OSRP) Rev. 3

TABLE OF CONTENTS

1 INTRODUCTION

[30 CFR § 254.22]

This Oil Spill Response Plan (OSRP) encompasses the work activities performed by Dominion Energy and its contractors associated with the operation activities of the Coastal Virginia Offshore Wind (CVOW) Commercial Project (the Project) where the activities occur offshore or impacting coastal or territorial seas of the U.S. Where applicable, each contractor's Vessel Response Plan (VRP) or Shipboard Oil Pollution Emergency Procedure (SOPEP) shall be aligned with this OSRP to ensure appropriate notification of Dominion Energy and all applicable authority having jurisdictions (AHJ).

The purpose of this OSRP is to establish procedures, clarify roles and responsibilities, identify the lines of authority, and identify the sequence of communications to be followed in the event of an offshore oil spill event or marine pollution event. This OSRP is intended to provide the most viable guidance in the selection of contractors, resources, and procedures. This plan is available electronically and hard copies will be kept at the Dominion Energy Threat Response and Analysis Center (TRAC) and the System Operations Center.

The following references were consulted in the creation of this OSRP:

Regional Response Team III Regional Contingency Plan
https://www.nrt.org/sites/72/files/2019-11-20_Final_RRT3_%20RCP_rev1.pdf

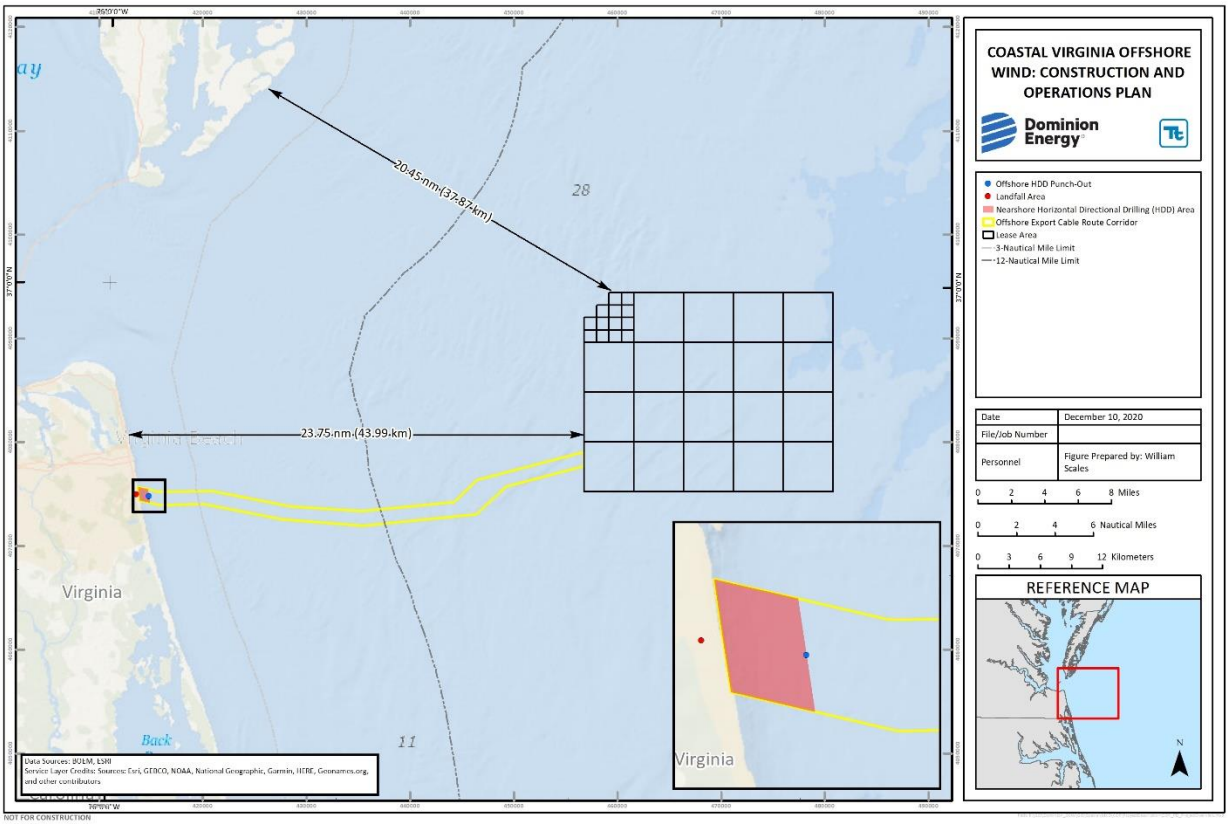
Virginia Area Contingency Plan
https://www.deq.virginia.gov/home/showpublisheddocument/10459/637647225838000000

Commonwealth of Virginia Emergency Operations Plan
https://www.vaemergency.gov/wp-content/uploads/2021/07/2021-COVEOP-Final-APPROVED-102021-1.pdf

USCG Incident Management Handbook
https://www.atlanticarea.uscg.mil/Portals/7/Ninth%20District/Documents/USCG_IMH_2014_COMDTPUB_P3120.17B.pdf?ver=2017-06-14-122531-930

1.1 Facility Information

In 2025, Dominion Energy will begin operations of the Project that will consist of up to 205 Wind Turbine Generators (WTGs) that will be capable of producing between 2,500 and 3,000 megawatts (MW) of clean, reliable offshore wind energy, and two or three Offshore Substations, each to include a helideck. The boundary of the Lease Area is located 20.5 nm (37.9 km) from the northwest corner to the Eastern Shore Peninsula and 23.8 nm (44.0 km) from Virginia Beach, Virginia. The Lease Area itself is 13.0 nm (24.1 km) from the westernmost to easternmost edge, and 10.4 nm (19.3 km) from the northernmost to southernmost edge. The Lease Area is 112,799 total ac (45,648.1 ha).



1.2 Record of Change

Date of Revision	Description of Revision
12/5/2020	CVOW Commercial Project Team review and edits
10/29/2021	General update and response to comments with revised COP submittal
4/13/2022	General update and response to comments from COP submittal.
1/19/2023	General update and response to comments from COP submittal. Addition of helidecks.

2 EMERGENCY RESPONSE ACTION PLAN

[30 CFR § 254.23]

2.1 Qualified Individuals (QI)

Dominion Energy has identified a Qualified Individual (QI) as identified under 30 CFR § 254.23. The QI representing Dominion Energy will also serve as the Incident Commander (IC) as defined in the Oil Pollution Act of 1990 (OPA-90). In this capacity, the QI/IC has the responsibility and authority to:

- Initiate spill clean-up operations
- Obligate any funds necessary to carry out all required and/or directed Oil Spill Response activities
- Activate and contract with required oil spill removal organizations (OSROs)
- Act as a liaison with the Federal On-Scene Coordinator (FOSC)
- Authorize immediate notification of Federal, State, and Local agencies

All QIs will be sufficiently trained and will have full authority to implement removal actions and ensure immediate notification of appropriate Federal officials and response personnel.

Qualified Individual (QI)	Company	Address	Phone Number	Email
Kevin Carroll (Primary)	Dominion Energy	707 E Main St, Richmond, VA	757-979-0440	Kevin.M.Carroll@dominionenergy.com
Tony Taylor (Alternate)	Dominion Energy	707 E Main St, Richmond, VA	804-366-8472	Anthony.D.Taylor@dominionenergy.com
Jennifer Donnell (Alternate)	Dominion Energy	707 E Main St, Richmond, VA	804-807-0164	Jennifer.L.Donnell@dominionenergy.com

Dominion Energy grants full authority to the above QIs to obligate funds, implement response actions, and immediately notify appropriate Federal officials and response organizations.

Duties of the QI and Alternate QI include:

- Notify all response personnel, as needed.
- Identify the character, exact source, amount, and extent of the release, as well as the other items needed for notification.
- Notify and provide necessary information to the appropriate Federal, State, and Local authorities with designated response roles, including the National Response Center (NRC), Bureau of Safety and Environmental Enforcement (BSEE), State Emergency Response Commission (SERC), and local response agencies.

- Assess the interaction of the spilled substance with water and/or other substances stored at the Facility and notify response personnel at the scene of that assessment.
- Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).
- Assess and implement prompt removal actions to contain and remove the substance released.
- Coordinate rescue and response actions as previously arranged with all response personnel.
- Activate contracted oil spill removal organizations.
- Use authority to obligate Company funds to implement removal.
- Direct clean-up activities until properly relieved of this responsibility.
- Refer to Appendix VI, Training Information, for a description of the training the QI has received.

2.2 Spill Management Team (SMT)

The appointed SMT includes a designated Oil Spill Response Coordinator (OSRC)/QI/IC and alternates. The QI/IC has been delegated the responsibility and authority to direct and coordinate response operations by Dominion Energy.

The SMT's are not all employees of Dominion Energy but have been contracted to respond as necessary. Refer to Appendix II, Contractual Agreements.

Refer to Appendix VI, Training Information, for training the SMT members responsible for spill management decision making have received.

Name/Title	Company	Address	Phone Number	Email
Kevin Carroll (Primary)	Dominion Energy	707 E Main St, Richmond, VA	757-979-0440	Kevin.M.Carroll@dominionenergy.com
Tony Taylor (Alternate)	Dominion Energy	707 E Main St, Richmond, VA	804-366-8472	Anthony.D.Taylor@dominionenergy.com
Jennifer Donnell (Alternate)	Dominion Energy	707 E Main St, Richmond, VA	804-807-0164	Jennifer.L.Donnell@dominionenergy.com
Oil Spill Response Organization (OSRO)	MSRC	220 Spring Street, Suite 500 Herndon, VA 20170	800-645-7745 or 800-259-6772	www.msrc.org customer.service@msrc.org

The responsibilities of the SMT are:

- Operations, Planning, Logistics, and Finance report directly to Command.

- When IC does not assign a position, IC retains that responsibility.
- The five (5) functional areas of the SMT are modular in design and can be expanded with additional staff, reporting under the main areas, to meet the requirements of large scale or complex emergencies.
- The IC can set up functional groups or assign groups that are assigned to geographical areas.
- Training requirements for response personnel are attached in Appendix B, Initial Notification Pro-Forma.
- Additional roles and responsibilities may be found In the USCG Incident Management Handbook.

2.3 Spill-Response Operating Team

The Spill Response Operating Team (SROT) will consist of trained individuals who are available on a 24-hour per day basis. Dominion Energy will rely on the Oil Spill Response Organization (OSRO) for the personnel required to operate and deploy spill response equipment. See table above for OSRO information.

2.4 Spill-Response Operations Center

Company	Address	Phone Number	Responsibilities
Dominion Energy	Lambert's Point Operations Base, Norfolk VA	800-645-7745 or 800-259-6772 (OSRO)	Spill response activities will be coordinated through this location (street address to be determined).

The primary communication system will be phone and alternate communication system will be VHF radio and/or satellite phones.

Contact	Phone Number
Treat Response and Analysis Center (TRAC)	(888) DOM-TRAC, select "option 1" (888) 366-7788, select "option 1"
System Operations Center (SOC)	804-273-4404 or 4405

2.5 Oil Container Tables

WTG Oil/Fuel/Lubricant Parameters

Up to 205 WTGs each with the following oil-based products:

Location	Oil/Fuel/Lubricant	Expected Capacity
Nacelle - Yaw pinion lubrication system	Grease (Optipit/Castrol)	82 gal (310 l)
Nacelle - Yaw gear	Gear oil (Castrol Optigear Synthetic X 320)	63 gal (238 l)
Nacelle - Transformer	Ester oil (Midel 7131)	1,717 gal (6,500 l)
Hollow Shaft (Generator) - Hydraulic system (Pitch, low-speed brake)	Hydraulic oil (Castrol Hyspin AWH-M32)	132 gal (500 l)
Hub - Pitch lubrication system incl. blade bearings	Grease (Shell Rhodina BBZ)	48 gal (180 l)
Hub - Pitch system hydraulic accumulators	Hydraulic oil (Castrol Hyspin AWH-M32)	92 gal (350 l)
	Total	**2,134 gal**

2.6 Offshore Substation Oil/Fuel/Lubricant Parameters

Two to three Offshore Substations each with the following oil-based products:

Location	Oil/Fuel/Lubricant	Expected Capacity
Transformer	Mineral oil (Shell Diala S4 ZX-1)	55,500 gal (210,000 l)
Shunt Reactor	Mineral oil	26,400 gal (100,000 l)
Earthing Transformer	Dielectric insulating fluid (MIDEL 7131)	4,200 gal (15,750 l)
Diesel Generator Tank	Marine Diesel	6,604 gal (47,620 lb / 21,600 kg)
	Total	**92,704 gal**

See Appendix VII, Safety Data Sheets, for more information on the contents of the WTGs and Offshore Substations.

2.7 Procedures for Early Detection of a Spill

The WTGs and Offshore Substations will be remotely monitored, and the TRAC and/or SOC will be notified if there is a failure. The helidecks are not at risk for a spill unless a helicopter is present. Personnel will always accompany a helicopter on the helidecks and will be capable of detecting a spill. There will be no refueling or maintenance of the helicopter while on the helidecks.

In addition, the service operations vessel will have a routine presence in the Lease Area performing routine maintenance with an anticipated frequency of one trip every two weeks. Personnel on this vessel will include credentialed mariners capable of identifying a sheen or emulsion in the water.

2.8 Spill Response Procedures

A contained release within the WTG or Offshore Substations is the most likely marine pollution incident to occur. All oil / hazardous substances within a WTG or Offshore Substation are expected to be contained. Each fluid source within an offshore WTG or Offshore Substation has drip trays, pans, or other systems to collect any discharged/released fluids. Each pan or tray has a drain system leading down the tower to a collection point in the lower storage space.

Each WTG or Offshore Substation contains a spill kit for the clean-up of small, contained spills. Dominion Energy personnel and its contractors that perform maintenance on the WTGs or Offshore Substations will be trained to clean up small spills that are contained within the WTG or Offshore Substation. In the unlikely event that a spill does get to water including a worst-case discharge, the effects of the spill to people or the environment would be minimal. See Appendix III for the full analysis of a worst-case discharge.

The helidecks also contain spill kits for the clean-up of small spills or drips from the helicopter. The personnel who accompany the helicopter will be capable of either cleaning up the spill using the spill kit or notifying the appropriate personnel in the unlikely event that the spill gets to water.

Every attempt will be made to prevent a spill from impacting the shoreline, including diverting a spill to prevent it from impacting the sensitive environmental resources identified in Appendix III. Regardless of an estimated low probability of a spill impacting the shoreline, Dominion Energy has existing contracts with USCG certified OSROs who would immediately be notified in the event of an oil spill. Our OSROs are available on a 24-hour basis and they maintain spill response equipment and have the experience and expertise to respond to an oil spill event. The OSROs are required to conduct testing and drills using their equipment and Dominion Energy conducts table-top exercises with our OSROs. Specific actions to be taken will depend on the individual spill event but may include the following:

- Containment booming – This method is used for spills on water and involves deploying boom around free oil. The boom may be anchored or left to move with the oil.
- Diversion booming – Also used for spills on water, in this method the boom is deployed at an angle to the approaching oil to divert the spill to a less sensitive area.
- Oil skimming recovery – This is primarily used in conjunction with booming to skim the oil off of the water. Oil skimming is used primarily for more significant oil contamination.

- Sorbents – Sorbents can be used on water or shorelines. On water this is used with booming on quiet water. Sorbents are used primarily for minor oil contamination.
- Manual removal/scraping – This is used on shorelines or land and involves physical removal primarily with hand tools.
- Flushing and washing – These methods are used on shorelines and involve flushing and washing (using warm water) to remove oil entrenched in soils or vegetation. These methods are typically used for larger spills on land and can cause disturbance to the soil and vegetation. They should not be needed for this site and should only be used in consultation with the regulating entities.

Additional details on these cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response."

Spills that get to water or have been suspected to have gotten to water need to follow the notification procedures listed below.

2.8.1 Spill Response Personnel

See Section 2.1, Qualified Individuals (QI), for the list of QI(s), Spill-Response Coordinator and alternate(s) and other SMT Members, and OSRO(s).

2.8.2 Federal Spill Reporting Requirements

For WTG, Offshore Substation, or helideck discharges, provide immediate notification to the National Response Center (NRC) for any spill which causes a film or sheen upon, or discoloration of the surface of the water; or causes a sludge or emulsion to be deposited beneath the surface of the water.

For vessel discharges, check that the vessel has immediately reported the discharge.

Report to National Response Center

(800) 424-8802 (24-hour)

(202) 267-2675 (24-hour)

Report to Division Chief/National Program Manager (Michael Idziorek Acting)

Safety & Incident Investigations Division, BSEE, US Dept. of the Interior

Office: 703-787-1033

The oil discharge report shall include:

a. Time of the discharge.

b. Identity of the material discharged.
c. Approximate quantity discharged.
d. Location and source of the discharged.
e. Cause and circumstances of the discharge.
f. Existing or potential hazards (fire, explosion, etc.), if any.
g. Personal injuries or casualties, if any.
h. Corrective action being taken and an approximate timetable to control, contain, and clean up the spill.
i. Name(s) and telephone number(s) of individual(s) who discovered and/or reported the spill.
j. Other unique or unusual circumstances.
k. Who was responsible for the spill?
l. What are their contact details?
m. Was the spill inshore or offshore?
n. What color was the sheen?
o. How large was the sheen?
p. Were efforts made to contain the spill?
q. Did the spill come from the vessel or from the remotely operated vehicle (ROV)?
r. What were the weather conditions like?
s. What is the IMO number of the vessel?
t. Is it a US flagged vessel?
u. Was the spill planned or accidental?

If direct reporting to the NRC is not practicable, reports may be made to USCG Sector Virginia, provided that the person-in-charge of the vessel or facility notifies the NRC as soon as possible.

For facilities operating in the Outer Continental Shelf (OCS), immediately report to:

National Response Center

(800) 424-8802 (24-hour)

If spills are 1 barrel (42 gallons / 159 Liters) or more

In addition, report all OCS discharges of oil to the appropriate BSEE District without delay, if spills are 1 barrel or more. This includes discharges of unknown origin but thought to be 1 barrel or more.

BSEE Region/District

Gulf of Mexico & Atlantic Region

1201 Elmwood Park Boulevard

New Orleans, LA 70123-2394
(800) 200-4853

All discharge reports shall be confirmed in writing to the District above. The written confirmation shall be submitted within 15 days after the discharge stops and include (for all reports):

- Cause of the discharge.
- Location of the discharge.
- Volume of the discharge.
- Action taken.

For discharge of more than 50 barrels (2,100 Gallons / 7,950 Liters), also report:

- Information on sea state.
- Meteorological conditions.
- Size and appearance of slick.

2.8.3 Virginia Spill Reporting Requirements

Provide notice by the quickest available means in the event of any unplanned off-site discharge or sheen upon the water. Notify:

National Response Center
(800) 424-8802
Virginia Department of Emergency Management
Emergency Operations Center

(804) 674-2400	(24-hour)
(800) 468-8892	(24-hour, In-state)
(804) 897-6500	(Office hours)
(804) 897-6506	(Fax)

2.8.4 Spill Response Procedures

It is most likely that any spill would be identified by either Crew Transfer Vessel (CTV) personnel, Siemens personnel or the general boating public. The person who discovered the spill should notify the QI as soon as possible and assist the QI with completion of the Dominion Energy Environmental Spill Report Form. The QI should then notify Dominion Energy TRAC and/or SOC and the appropriate notification to Dominion Energy Environmental Services (DEES), external agencies, and the OSRO.

In the initial stages of the response, the QI maintains responsibility for liaison with any external agencies (FOSC, SOSC or local responders). The QI provides direction and may activate the SMT or OSRO resources in coordination with the FOSC, SOSC and local responders. If necessary, the SMT/OSRO is activated and deployed to site.

The QI will be responsible for notifying the applicable federal and state agencies.

2.8.5 Spill Report Forms

See following page for the Dominion Energy Environmental Spill Report Form.

OIL SPILL REPORT FORM

Information for notification of National Response Center, BSEE and other response personnel.
Initial notification not to be delayed pending collection of all information.

OIL SPILL REPORT FORM	
Reporter's Name (Last, First, M.I.):	
Position:	
Day Phone:	**Evening Phone:**
Company:	**Organization Type:**
Address:	**City, State, Zip:**
Were Materials Discharged? ☐ Yes ☐ No	
If NO, is there a potential for discharge? ☐ Yes ☐ No	
Is this a Confidential Report? ☐ Yes ☐ No	
Who is the Suspected Responsible Party for the spill (Dominion/Contractor/Unknown/Etc.)?	
Are you calling for Responsible Party? ☐ Yes ☐ No	**Meeting Federal obligations to report?** ☐ Yes ☐ No
Date Called:	**Time Called:**
Source and/or Cause of Incident:	
Date of Incident:	**Time of Incident:**
☐ **Discovered** ☐ **Occurred** ☐ **Planned**	
Container Type (Above Ground, Below Ground, Vessel, Unknown):	
Incident Cause (Equipt. Failure/Transport Accident/Unknown/Etc.):	
Incident Location (Description):	
Nearest City / State / Zip / County:	
Distance from City/Shore:	
Direction from City/Shore:	
Tank Oil Storage Capacity:	**Current Weather:**
Spill Latitude:	**Spill Longitude:**
Mile Post or River Mile (if applicable):	
Page 1 of 2	

OIL SPILL REPORT FORM, CONTINUED

OIL SPILL REPORT FORM, CONTINUED	
Material Discharged (including color of sheen):	
CHRIS (Chemical Hazards Response Information System) Code **(or Type substance if Code Unknown)**	_____ OTW (Oils, Fuel: 2) _____ ODS (Oils: diesel) _____ GAT (Gasolines: automotive) _____ KRS (Kerosene) _____ OLB (Oils, miscellaneous: lubricating)
Discharged Quantity	**Unit of Measure**
Material Discharged to Water? ☐ Yes ☐ No	
Amount Discharged to Water	**Unit of Measure**
Response Actions Taken:	

Number of Injuries:	**Number of Deaths:**
Were there Evacuations? ☐ Yes ☐ No	**Number Evacuated:**
Were there any Damages? ☐ Yes ☐ No	**Damage in Dollars (approx.):**

Medium (air, land, or water) affected:

Any information about the incident not recorded elsewhere in the report:

Agencies Notified:	NRC? ☐ Yes ☐ No	BSEE? ☐ Yes ☐ No
	State? ☐ Yes ☐ No	Other? ☐ Yes ☐ No

Describe:
Page 2 of 2

2.8.6 Methods to Predict Spill Movement

An oil spill would flow tidally around the WTG, Offshore Substation, or helidecks due to the location being 23.5 nm (43.5 km) off the coast. The General NOAA Operation Modeling Environment (GNOME) was used to determine how a spill would move during worst-case circumstances and is discussed in Appendix III.

Dominion Energy and/or the OSRO will also monitor weather conditions to predict any other spill movements.

2.8.7 Methods to Identify and Prioritize Areas of Environmental Importance

The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) Greater Atlantic Regional Fisheries Office (GARFO) Endangered Species Act (ESA) Section 7 Mapper database was consulted to determine if any endangered or threatened species are in the area.

Due to the location, quantity and oil type within the WTGs, Offshore Substations, and helidecks, our spill modeling shows that a spill is not expected to reach shallow waters or the shoreline. However, in the unlikely event that a spill does reach the shoreline, the US Fish and Wildlife Services IPaC program was used to determine the endangered and threatened species and wildlife refuges that might be affected.

See Appendix III for more details on the species and wildlife refuges that could be affected.

2.8.8 Methods to Protect Areas of Environmental Importance

Due to the location, quantity and oil type within the WTGs, Offshore Substations, and helidecks, our spill modeling shows that a spill is not expected to reach shallow waters or the shoreline. Dominion Energy maintains an active master agreement with an OSRO for emergency spill response and oil clean-up. Dominion Energy and the OSRO will clean up a spill before it reaches the shoreline or will divert a spill to prevent it from impacting the sensitive environmental resources identified in Appendix III. In the unlikely event that a spill does reach the shoreline, the OSRO maintains equipment for shoreline cleanup. See Section 2.8 above for more details on oil spill cleanup techniques that could be used.

See Appendix II for a list of equipment provided by the OSRO to clean up a spill on water or onshore.

2.8.9 Methods to Ensure Preparedness for Oil Spill Response

Dominion Energy maintains an active master agreement with an OSRO for emergency spill response and oil clean-up. All spill-response equipment will be inspected monthly. Tabletop exercises and equipment deployment drills will be conducted as required in 30 CFR § 254.42. See Appendix VI, Training and Drills, for more details.

2.8.10 Methods to Ensure Storage for Recovered Oil

Dominion Energy will maintain an active master agreement with an OSRO. The contract will require the OSRO to provide sufficient storage for containment and recovery operations for all spill scenarios.

See Appendix III for the storage needed during a response to a worst-case discharge.

See Appendix II for a list of equipment provided by the OSRO that can be used to store recovered oil.

2.8.11 Procedures for Oil Clean Up

Due to the location, quantity and oil type within the WTGs and Offshore Substations, our spill modeling shows that a spill is not expected to reach shallow waters or the shoreline.

Regardless of an estimated low probability of a spill impacting the shoreline, Dominion Energy has existing contracts with USCG certified OSROs who would immediately be notified in the event of an oil spill. The OSRO will clean up a spill before it reaches the shoreline or will divert a spill to prevent it from impacting the sensitive environmental resources identified in Appendix III. See Section 2.8 above for more details on oil spill cleanup techniques that could be used.

It is highly unlikely that any birds will be affected, but if they are the local US Fish and Wildlife Office will be contacted for assistance in rehabilitating the oiled birds.

Virginia Ecological Services Field Office – Gloucester, VA …… 804-693-6694

2.8.12 Procedures for Waste Disposal

Dominion Energy will maintain an active master agreement with an OSRO. The contract will require the OSRO to store, transfer, and dispose of recovered oil and oil-contaminated materials and to ensure that all disposal is in accordance with Federal, State, and local requirements.

2.8.13 Methods to Implement "Dispersant Use Plan" and "In Situ Burning Plan"

Due to the location, quantity, and type of oil within the WTGs, Offshore Substations, and helideck, Dispersant Use Plans and In Situ Burning Plans are not practical for any spill scenario.

APPENDIX I: RESPONSE EQUIPMENT INVENTORY

[30 CFR § 254.24, 254.43]

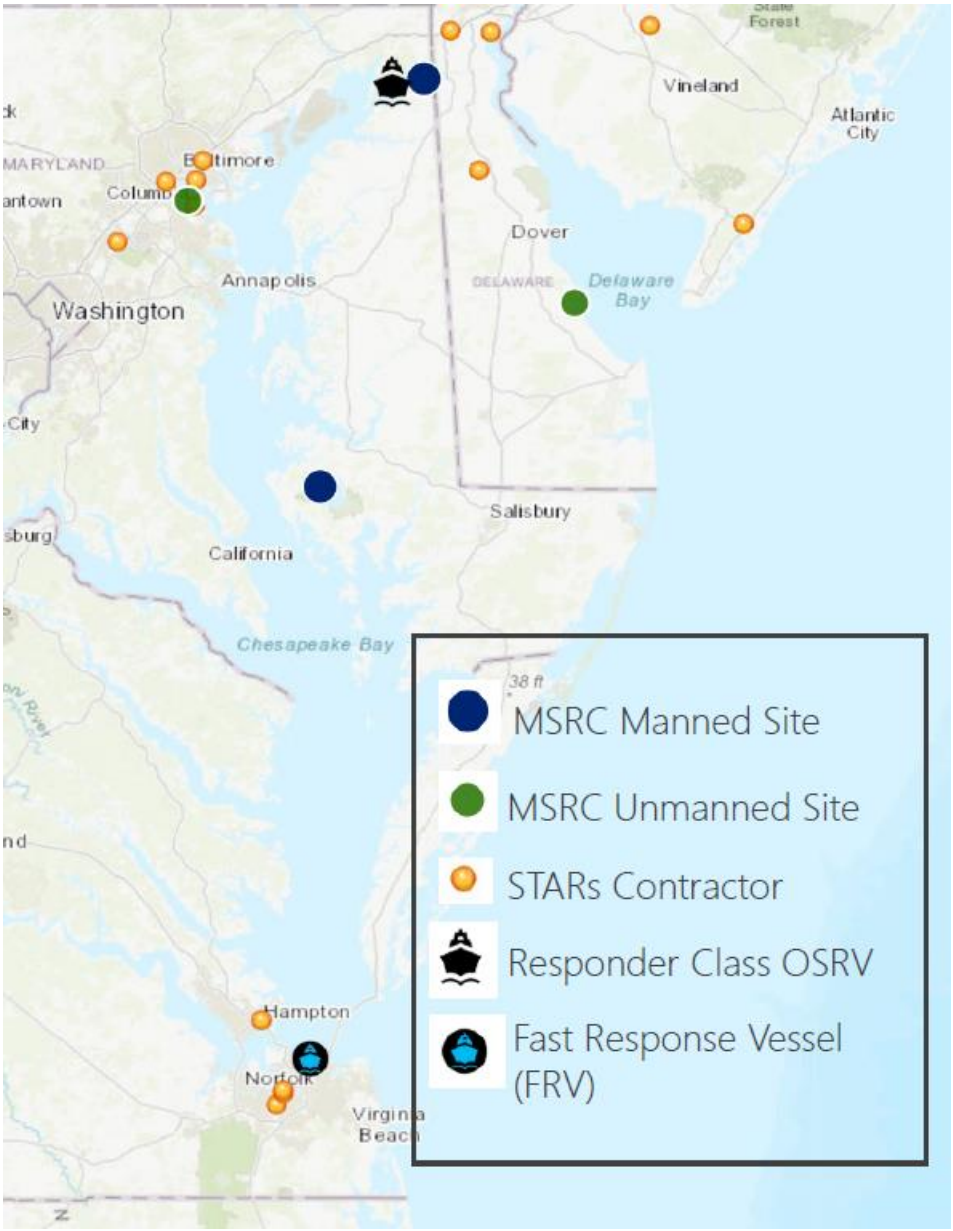
1.0 Facility Response Equipment

The response equipment described in the table below belongs to Dominion Energy. The response equipment owned by the OSRO is described in the OSRO contract in Appendix II, Contractual Agreements.

Response Equipment	Quantity/Absorption	Storage Location	Operational Status
IP Phone	1	WTG	Operational
VHF/AIS/EPIRB satellite or cell phone capability	1	WTG	Operational
VHF Radios and Mobile Phones	1 per offshore working party	WTG	Operational
Sill Response Kits	1 per WTG/Substation/Helideck	WTG/Substation/Helideck	Operational

2.0 Response Contractor(s) Equipment List and Response Times

The response equipment owned by the Oil Spill Response Organization (OSRO) is described in the OSRO contract in Appendix II and is stored in multiple locations along the US East Coast.



Company/Contractor	Equipment	Response Time (hrs)
Marine Spill Response Corporation (MSRC)	Full Response Capabilities	12

3.0 Inspection and Maintenance of Spill-Response Equipment

In accordance with 30 CFR § 254.42, spill-response equipment owned by Dominion Energy listed in this OSRP (see Facility Response Equipment) will be inspected monthly and the records of those inspections will be maintained for at least 2 years. The OSRO will be responsible for inspecting and maintaining their spill-response equipment according to the same requirements. The OSRO will supply a letter to Dominion Energy annually stating that the applicable inspections, maintenance and exercises have been completed.

APPENDIX II: CONTRACTUAL AGREEMENTS

[30 CFR § 254.25]

1.0 Marine Spill Response Contractor (OSRO)

The following contract only includes the response resources for the Marine Spill Response Corporation (MSRC) locations near Virginia Beach, VA. A copy of the full contract with response resources at all locations can be supplied upon request. The annual renewal contract, certification records, and current equipment list are kept electronically and are available upon request. The OSRO personnel and equipment are available on a 24-hour-per-day basis.

SERVICE AGREEMENT EXECUTION INSTRUMENT

The MSRC SERVICE AGREEEMENT attached hereto (together with this execution instrument, the "Agreement"), a standard form of agreement amended and restated as of September 27, 1996, is hereby entered into by and between

Dominion Energy, Inc.

[Name of COMPANY]

a Corporation, Virginia

[Type of entity and place of organization]

with its principal offices located at 120 Tredegar Street, Richmond, VA 23219 (the "COMPANY"), and MARINE SPILL RESPONSE CORPORATION, a nonprofit corporation organized under the laws of Tennessee ("MSRC"), and shall be identified as

IN WITNESS WHEREOF, the parties hereto each have caused this Agreement to be duly executed and effective as of 10/14/2020.

By: DocuSigned by: Scott Lawton [signature]

Scott Lawton [print name]

Title: Environmental Technical Advisor

Address: 120 Tredegar St Richmond,VA 23219

Telephone: (804) 273-2600 email: Scott.lawton@dominionenergy.com

MARINE SPILL RESPONSE CORPORATION:

By: DocuSigned by: Ceren Karaer

Ceren Karaer
Business Development & Customer Relationship Manager
karaer@msrc.org
3838 N Sam Houston Pkwy E
Suite 400, Houston TX 77032
(703) 304-9688

MSRC Major Equipment List

NOTES & DISCLAIMERS:

(1) THE CUSTOMER AND ITS PLANWRITER HAVE SOLE RESPONSIBILITY FOR ALL PLANWRITING. THE FOLLOWING IS INTENDED ONLY AS INFORMATION ABOUT POTENTIALLY AVAILABLE MSRC RESOURCES THAT MAY BE CITED IN THAT PLAN, SUBJECT TO THE CONTRACT TERMS BETWEEN MSRC AND ITS CUSTOMER.

(2) THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

(3) MSRC CANNOT AND DOES NOT REPRESENT OR GUARANTEE THAT ALL OR ANY OF THE FOLLOWING RESOURCES WILL BE AVAILABLE AT ANY ONE TIME, DUE TO OTHER SPILLS, DRYDOCKS, PERIODIC MAINTENANCE REQUIREMENTS, REPAIR, ETC. IF RESOURCES BECOME UNAVAILABLE, MSRC HAS NO OBLIGATION TO NOTIFY CUSTOMERS OR THEIR PLANWRITERS, BUT WILL (a) PROVIDE OSRO REDUCTION NOTICES TO THE USCG AS REQUIRED BY USCG REGULATION, AND (b) NOTIFY CUSTOMERS IF MATERIAL CHANGES OCCUR THAT WOULD REDUCE MSRC'S FEDERAL OSRO CLASSIFICATION.

(4) The following lists the resources POTENTIALLY available. Actual availability depends on circumstances, including commitments to prior spill responses and other circumstances such as noted above. Use and availability of specific equipment will also depend on local conditions, availability of contractors, traffic, weather, safe navigation and other conditions permitting.

(5) Listed resources may not be appropriate for all operating environments (e.g., offshore vs. nearshore vs. inland), and the customer and its planwriter must plan for and allocate resources accordingly.

(6) Resources may be deployed in various combinations as directed by customer and dictated by circumstances. For example, skimmers and boom may be deployed with different vessels than those listed (including, potentially, appropriate vessels of opportunity (VOO) as identified by MSRC, the customer or its planwriter). The customer and its planwriter accept responsibility for plan reference and/or reliance on specific VOOs, given they may or may not be available at the time of an incident.

(7) Estimates provided re: resources (EDRC, storage capacity, etc.) are NOT performance guarantees or warranties. Actual recovery rates, storage capacities, etc. will vary and will depend on the specifics of the individual response, the type of oil involved, etc.

(8) EDRC is the Coast Guard and BSEE-prescribed measurement of skimming capability for planning purposes, and may not represent actual performance.

(9) Preparation and implementation of plans remains the responsibility of the customer and its planwriter. The following is only a summary of potentially available MSRC resources, subject to above notes and disclaimers, and subject to other contract terms between MSRC and the customer. The customer and its planwriter are solely responsible for determining the total package of resources needed for planning purposes (MSRC and other) and for arranging for all necessary resources.

(10) The MEL is a comprehensive list of resources nation-wide within MSRC's three regions, i.e. Atlantic, Gulf, and Pacific regions. Due to various state regulations in California and Washington, the resources listed in the Pacific region cannot be listed in a Gulf region plan without the express written permission of MSRC. These exclusions do not apply to dispersant aircraft or dispersant inventory.

Baltimore, MD

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Baltimore, MD Equipment Site MSRC Equipment Site	1 GT-185 Skimmer (with Adapter) (1,371 bbl/day)	50 ft 18" Curtain Internal Foam		1 Shallow Water Barge (non-self propelled/400 bbl) (400 bbl)	1 Shallow Water Push Boat (28' Munson)
Site Totals:	1 Skimmers (1,371 bbl/day)	50 ft Boom		400 bbl Storage	

Slaughter Beach, DE

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
Slaughter Beach, DE Equipment Site MSRC Equipment Site			330 gal Corexit 9500		
Site Totals:			330 gal Dispersants		

Chesapeake, Virginia

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
MSRC 690 Oil Spill Response Barge (OSRB)	1 Crucial Disc 88/30 (11,122 bbl/day) 1 Stress I (15,840 bbl/day)	2,640 ft 67" Curtain Pressure-Inflatable		68,000 bbl Onboard Storage	
30 ft. Kvichak Kvichak Marco Skimming Vessel	1 Marco I (3,588 bbl/day)			24 bbl Onboard Storage	
Virginia Warehouse MSRC Equipment Site	1 AardVac (3,840 bbl/day) 1 GT-185 Skimmer (with Adapter) (1,371 bbl/day) 1 Stress I (15,840 bbl/day)	50 ft 18" Curtain Internal Foam 3,000 ft 26" Tidal Seal 3,520 ft 67" Curtain Pressure-Inflatable		1 Shallow Water Barge (self propelled/400 bbl) (400 bbl) 1 500 bbl Towable Storage Bladder (500 bbl) 2 10 bbl Fastanks (20 bbl) 2 55 bbl Fastanks (110 bbl) 1 100 bbl Towable Storage Bladder (100 bbl)	1 Fast Advancing Encounter System #2
Site Totals:	6 Skimmers (51,601 bbl/day)	9,210 ft Boom		69,154 bbl Storage	

Norfolk, VA

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
MSRC RELENTLESS Fast Response Vessel (FRV)	2 LORI Brush Pack (5,000 bbl/day)	40 ft Tapered Fence		50 bbl Onboard Storage	
Site Totals:	2 Skimmers (5,000 bbl/day)	40 ft Boom		50 bbl Storage	

Wilmington, NC (Buckeye Terminal)

	Skimmers (EDRC bbl/day)	Boom	Dispersants	Storage	Small Boats & Other Equipment
SBS set GT-185 Skimmer (with Adapter)	1 GT-185 Skimmer (with Adapter) (1,371 bbl/day)	50 ft 18" Curtain Internal Foam		1 Shallow Water Barge (non-self propelled/400 bbl) (400 bbl)	1 Shallow Water Push Boat (28' Munson)
Site Totals:	1 Skimmers (1,371 bbl/day)	50 ft Boom		400 bbl Storage	

APPENDIX III: WORST-CASE DISCHARGE SCENARIO

[30 CFR § 254.26]

1.0 Volume of Worst-Case Discharge

[30 CFR § 254.26 (a)]

A worst-case discharge would result if there was a catastrophic failure to a WTG or Offshore Substation and its containment. In the unlikely case that a worst-case discharge did occur, the volume of oil that would be discharged would be 2,134 gallons of oil/fuel/lubricant for the WTG and 92,704 gal of oil/fuel/lubricant for the Offshore Substation. Since a discharge from an Offshore Substation would be greater than that of a WTG, our worst-case analysis will focus on a discharge from an Offshore Substation.

There will be no refueling or maintenance of the helicopter while on the helidecks therefore the spill potential from a helicopter is minimal. Personnel are also always present when a helicopter is present.

2.0 Trajectory Analysis

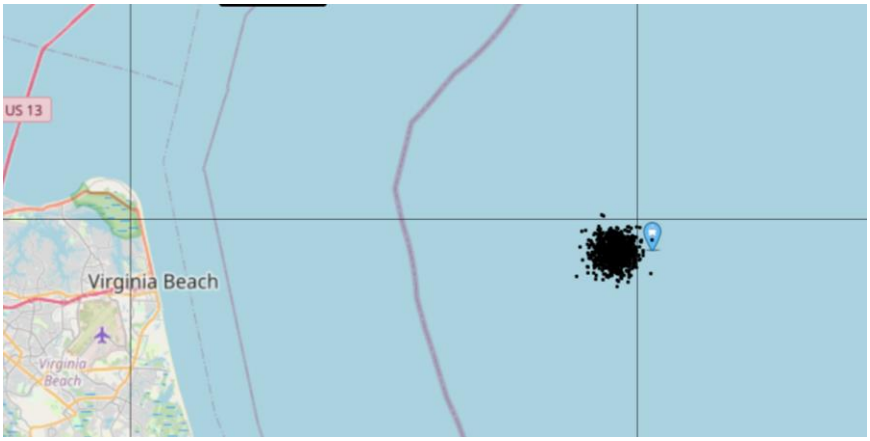
[30 CFR § 254.26 (b)]

NOAA's GNOME modeling program was used to perform a trajectory analysis for a worst-case discharge. For this facility, a worst-case discharge would be if 92,704 gallons (entire oil contents of all containers at a single Offshore Substation) was instantaneously discharged into the Atlantic Ocean. A light oil with similar characteristics (API Gravity: 26) to the Transformer Oil was used for this analysis since it most closely represents the contents of the WTGs and the Offshore Substations. Modeling was done using multiple wind speeds all pointing directly towards the shoreline.

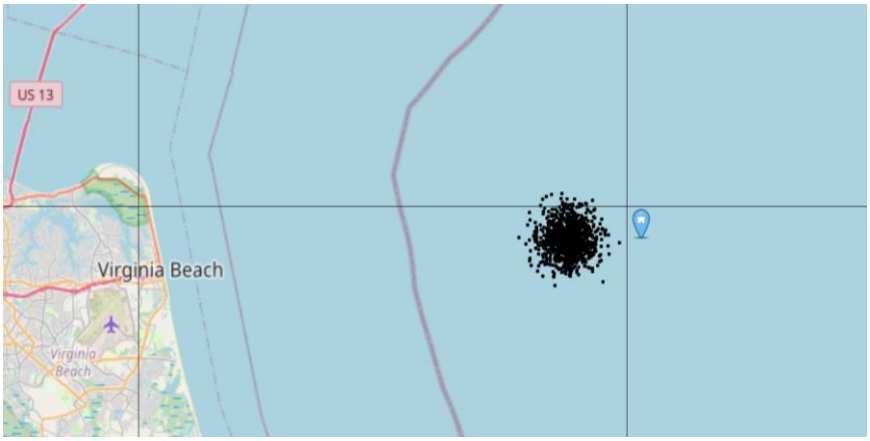
The modeling showed that at normal wind speeds for the area, a worst-case discharge will evaporate/dissipate before reaching the shoreline. However, in the unlikely scenario of constant winds between 18 and 23 knots directly towards the shoreline, a very minimal amount may reach the shoreline. Winds greater than 23 knots will cause faster evaporation/dissipation and the spill is not expected to reach the shoreline. See pictures below for information on the worst-case discharge analysis for winds at 6, 12, 18, and 24 knots.

6 knots East

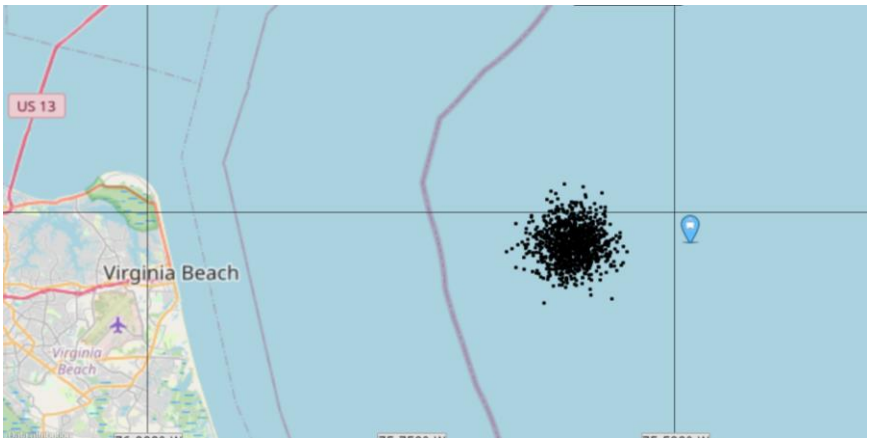
12 hours – Average distance (from spill) – 3.5 km



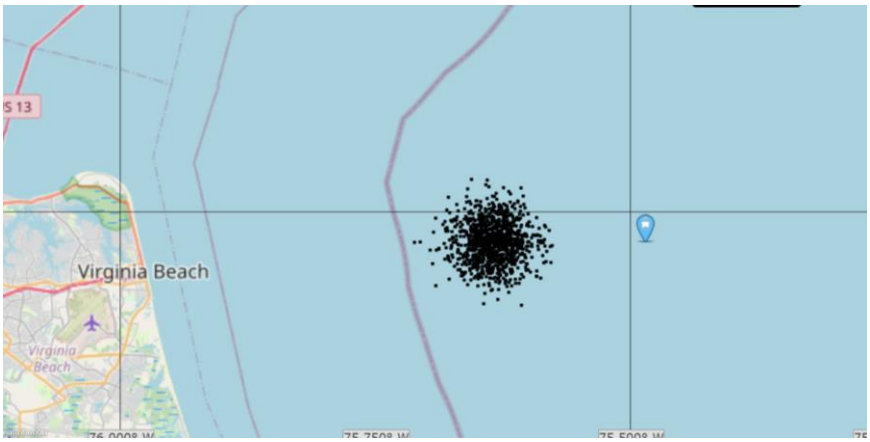
24 hours – Average distance (from spill) – 5.5 km

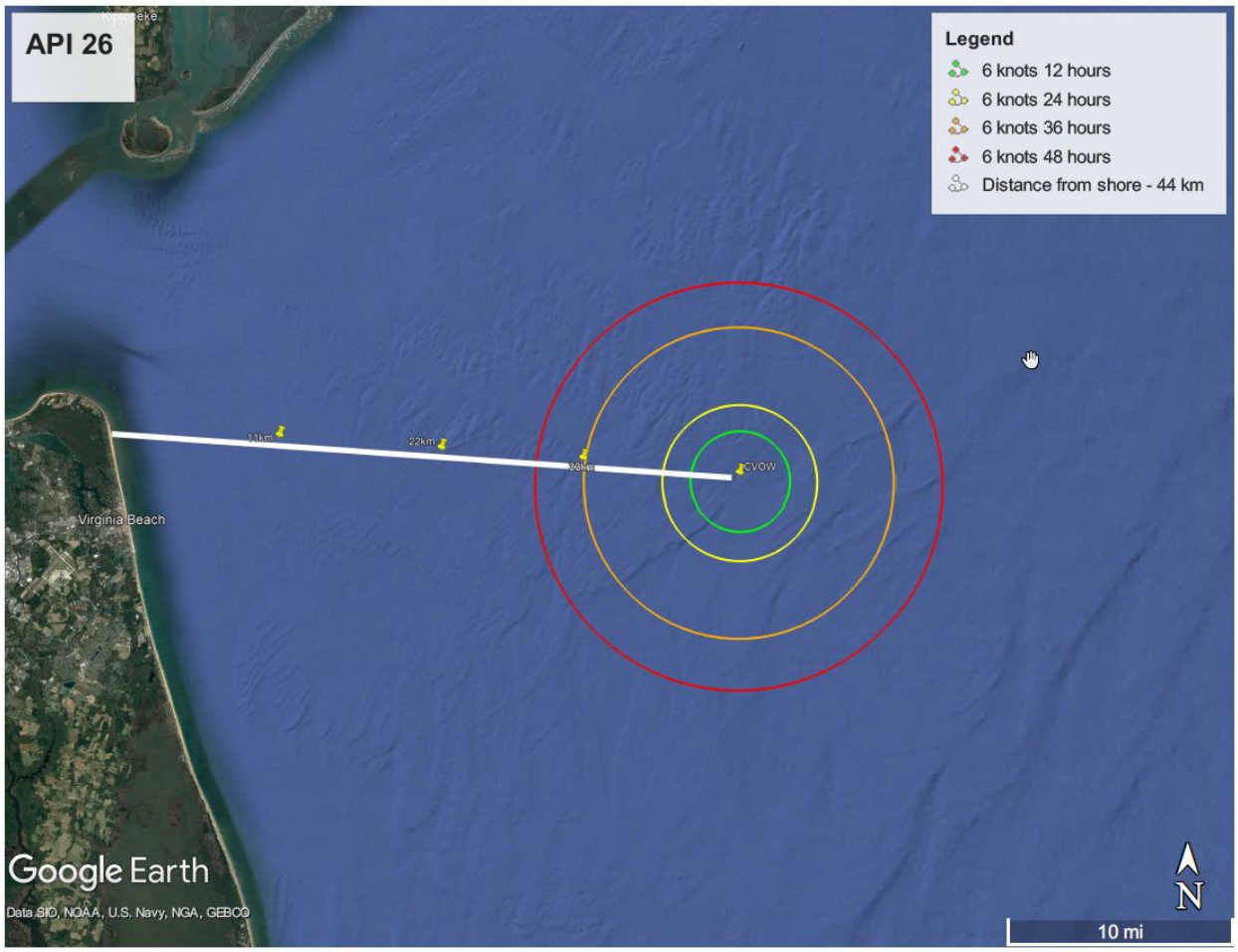


36 hours – Average distance (from spill) – 11 km



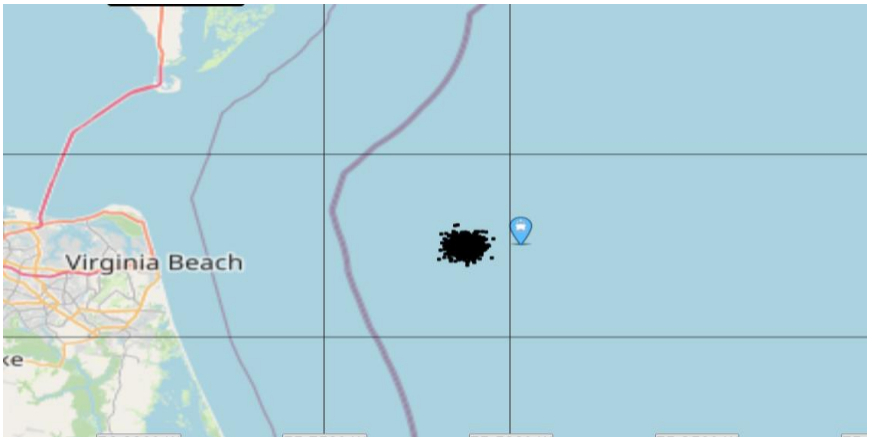
48 hours – Average distance (from spill) – 14.5 km



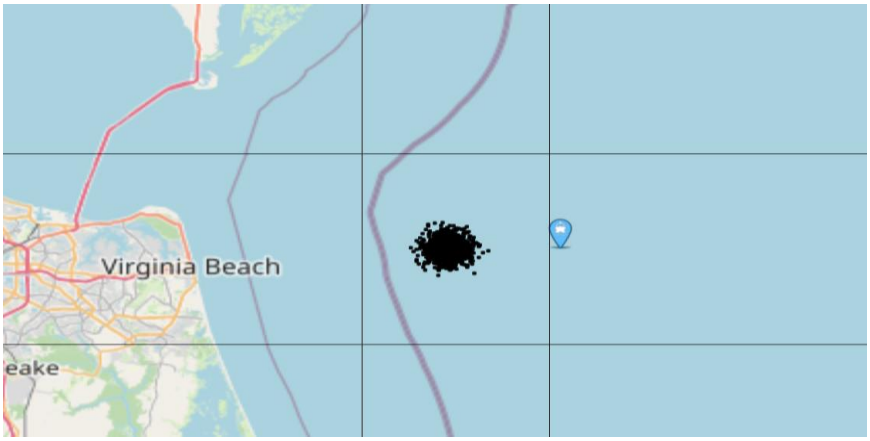


12 knots East

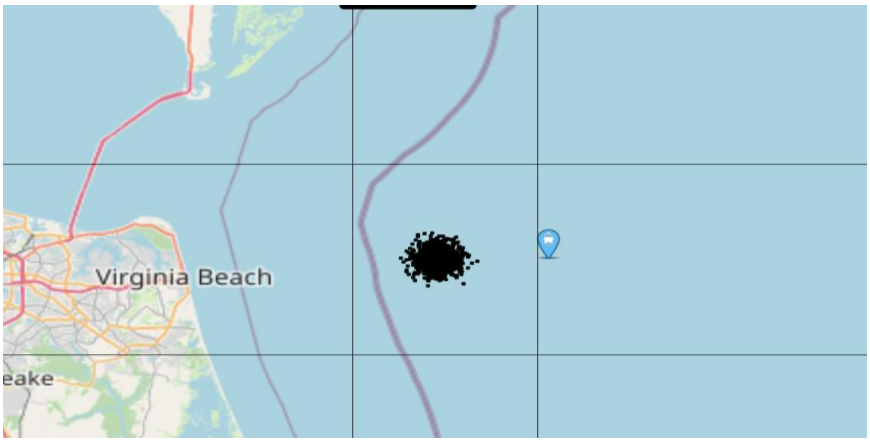
12 hours – Average distance (from spill) – 5.5 km



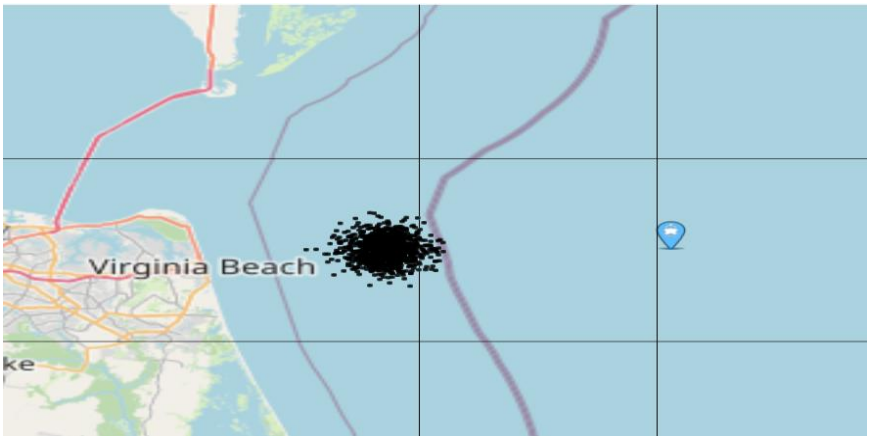
24 hours – Average distance (from spill) – 13.2 km

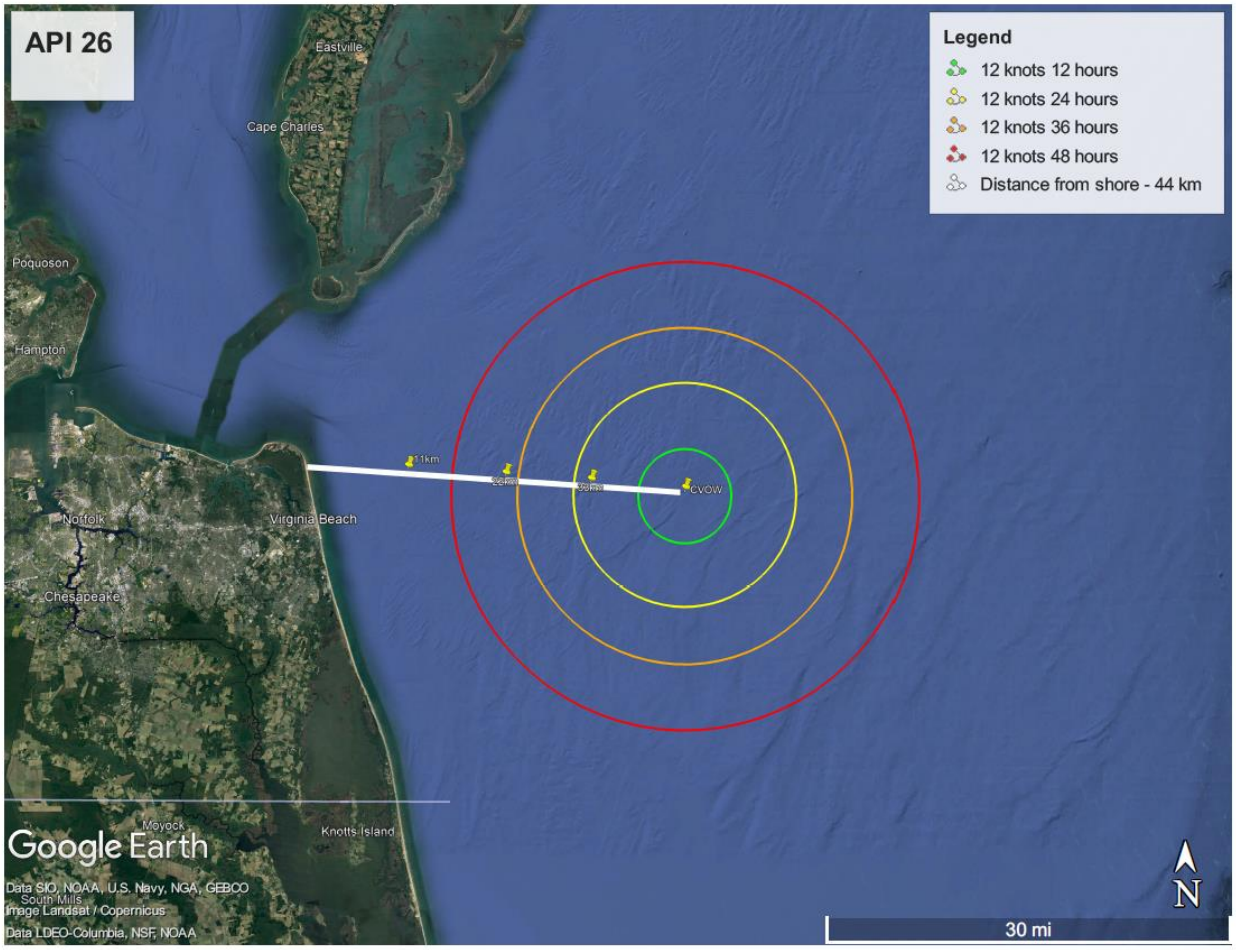


36 hours – Average distance (from spill) – 19.8 km



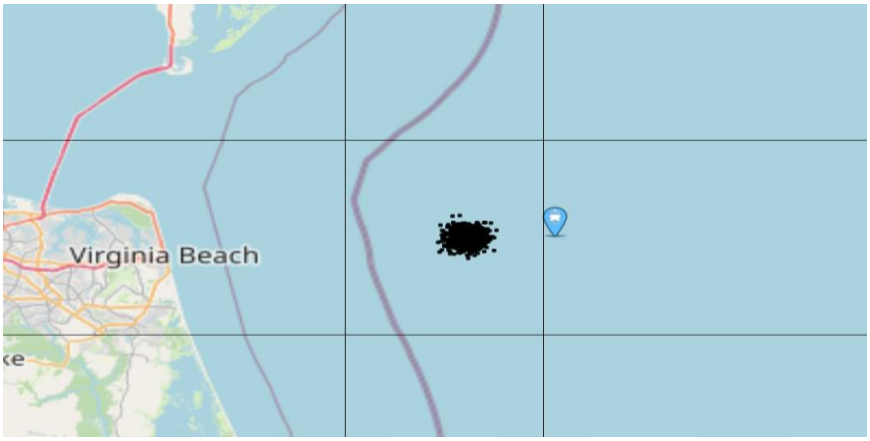
48 hours – Average distance (from spill) – 27.7 km



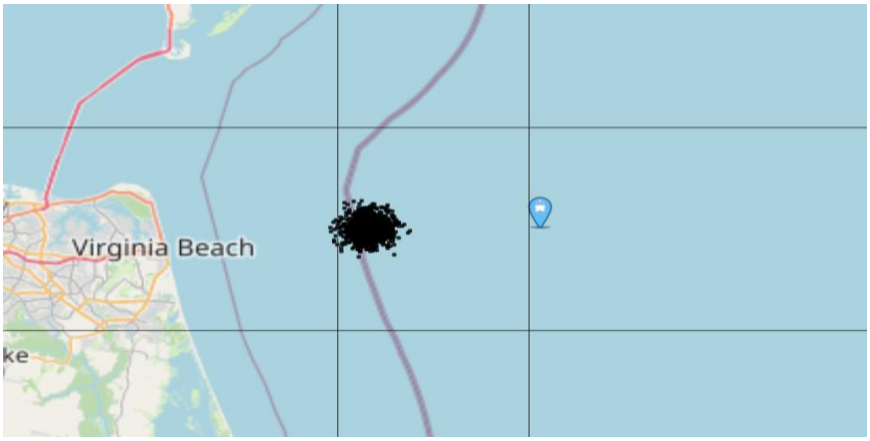


18 knots East

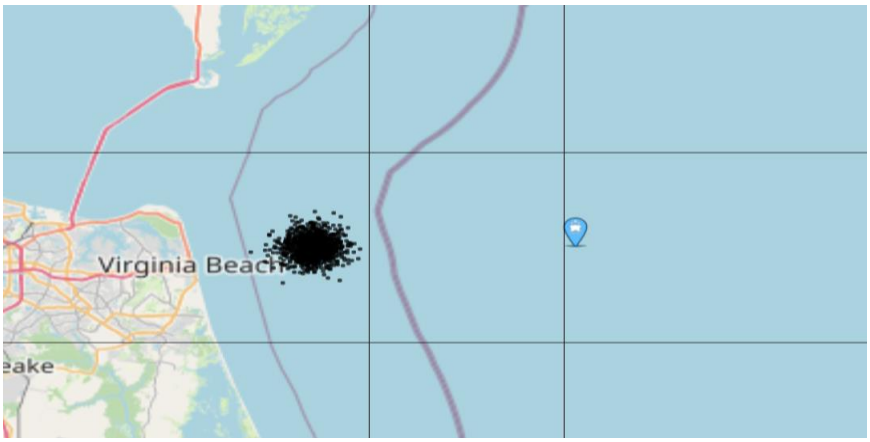
12 hours – Average distance (from spill) – 11 km



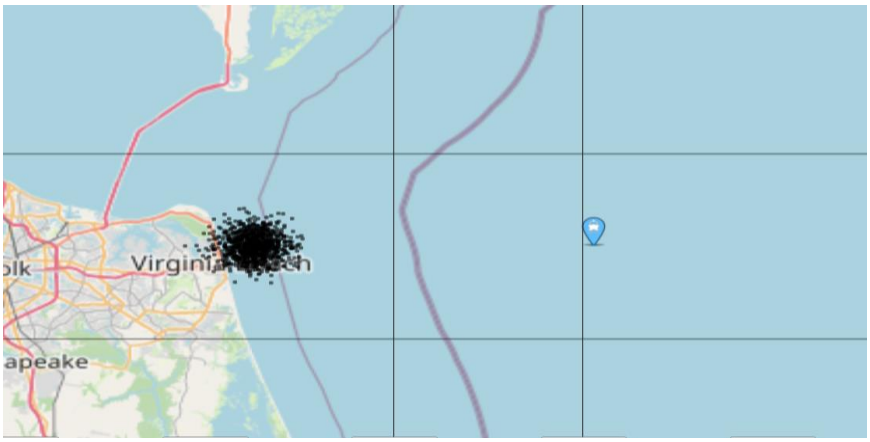
24 hours – Average distance (from spill) – 19.8 km

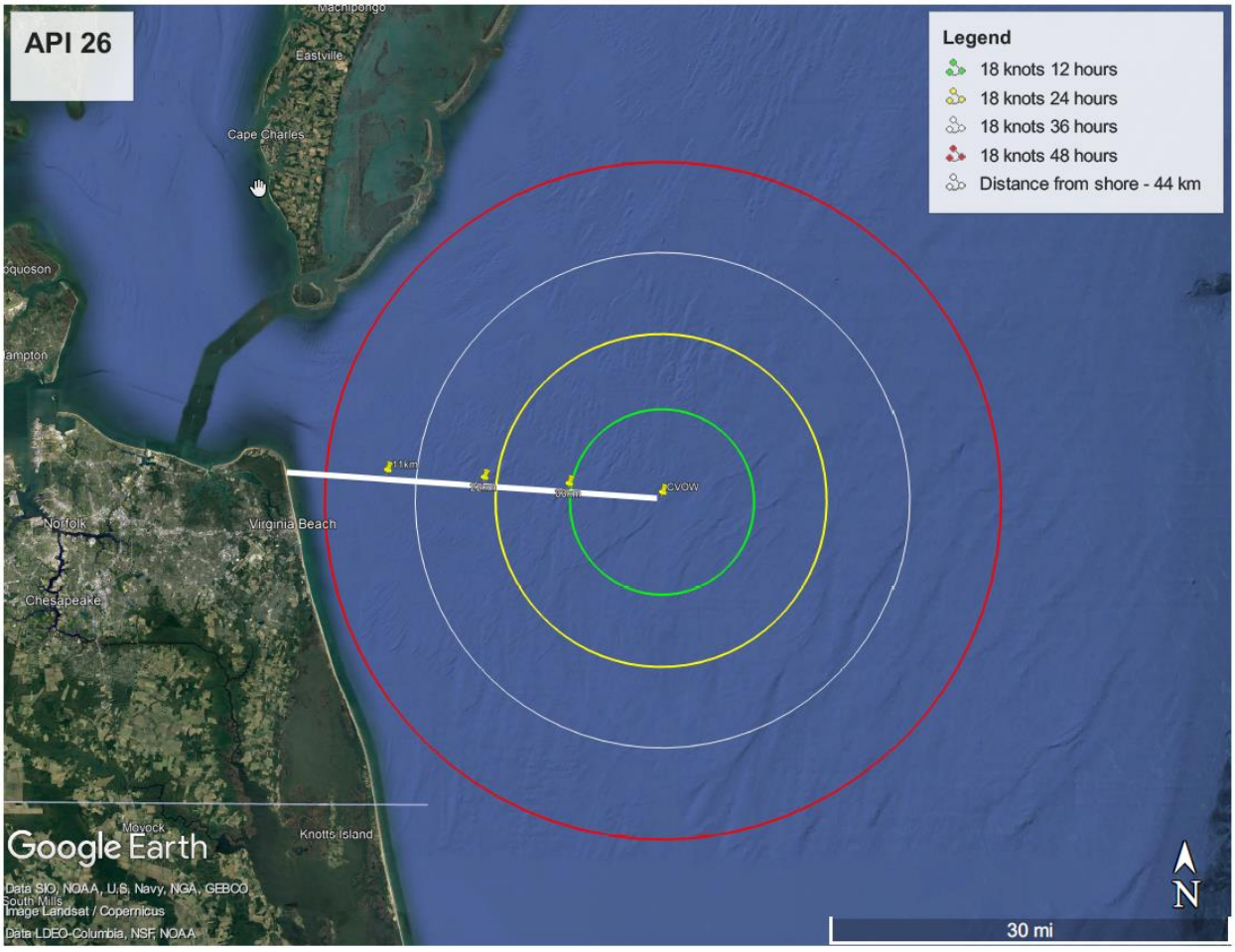


36 hours – Average distance (from spill) – 29.5 km



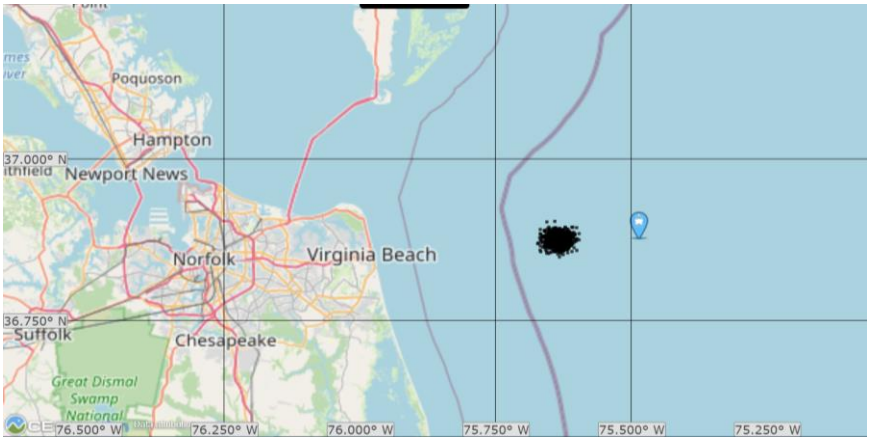
48 hours – Average distance (from spill) – 40.4 km



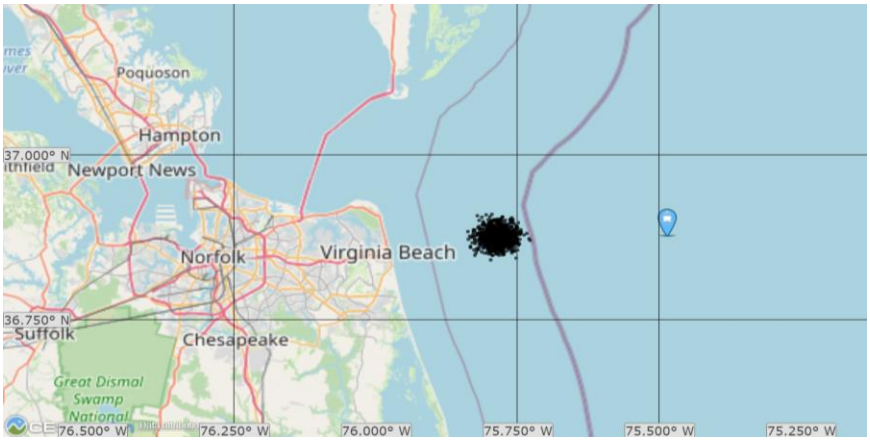


24 knots East

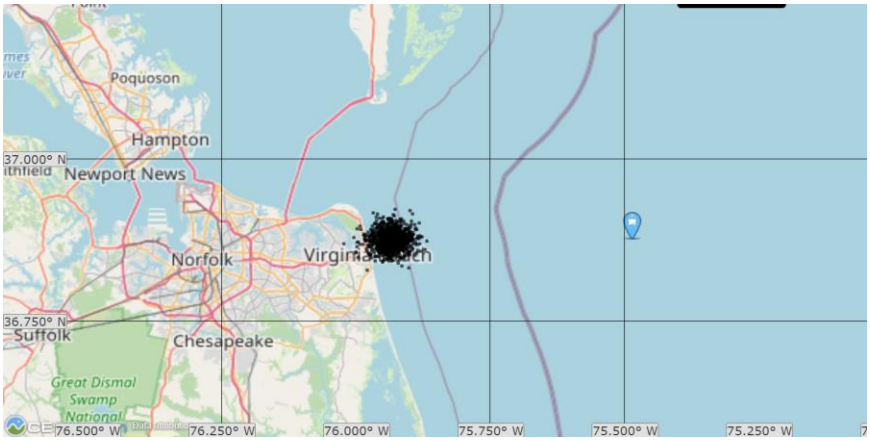
12 hours – Average distance (from spill) – 12.75 km



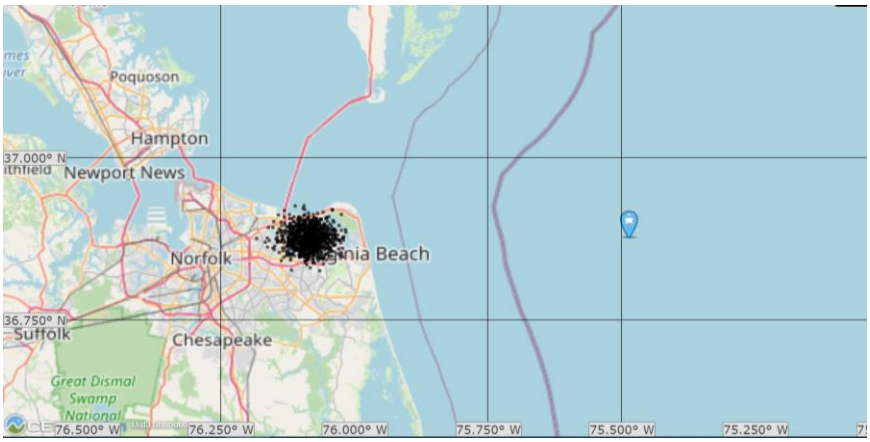
24 hours – Average distance (from spill) – 20.25 km

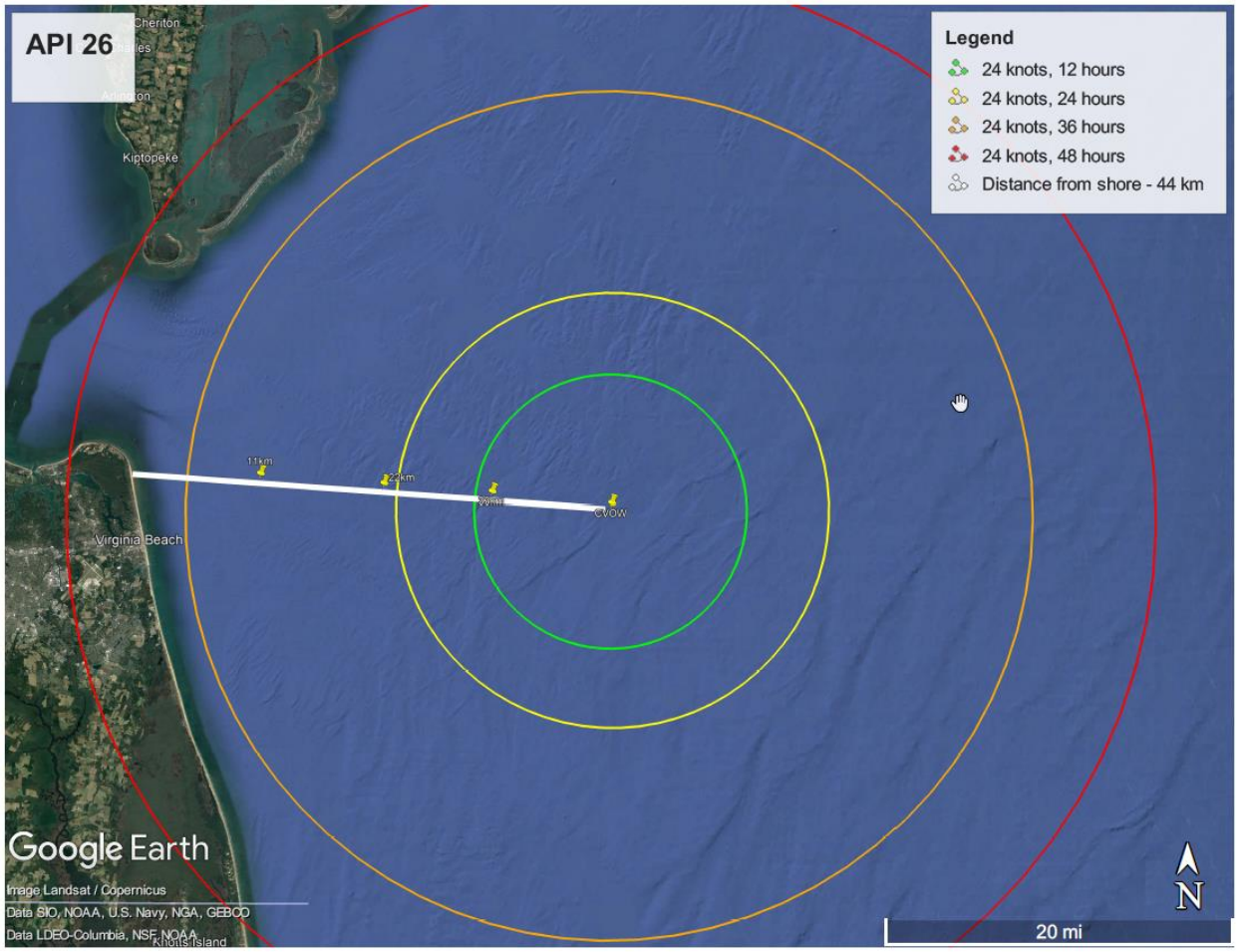


36 hours – Average distance (from spill) – 39.6 km



48 hours – Average distance (from spill) – 51 km





3.0 Resources of Special Economic or Environmental Importance

[30 CFR § 254.26 (c)]

The National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) Greater Atlantic Regional Fisheries Office (GARFO) Endangered Species Act (ESA) Section 7 Mapper was consulted to determine which endangered or threatened species are in the area off the coast of Virginia Beach. Those species are as follows:

-
- Atlantic Sturgeon
- Fin Whale
- Green Sea Turtle
- Kemp's Ridley Sea Turtle
- Leatherback Sea Turtle
- Loggerhead Sea Turtle
- North Atlantic Right Whale

Due to the location, quantity, and the type of oil within the WTGs and Offshore Substations, a spill is not expected to reach the shoreline. However, in the unlikely event that a spill does reach the shoreline, the US Fish and Wildlife Services Information for Planning and Consultation (IPaC) program was used to determine the additional endangered and threatened species that would be affected. Those species are as follows:

- Northern Long-eared Bat
- Eastern Black Rail
- Piping Plover
- Red Knot
- Roseate Tern
- Hawksbill Sea Turtle
- Monarch Butterfly
- Northeaster Beach Tiger Beetle

IPaC also identified 3 wildlife refuges along the coast that have the potential to be impacted should a spill reach the shoreline. Those are the Back Bay National Wildlife Refuge, the Eastern Shore of Virginia Wildlife Refuge, and the Fisherman Island National Wildlife Refuge.

A more detailed analysis, including a desktop review and various surveys, of the endangered/threatened species that could possibly be found in the offshore area can be found in Section 4.2, Biological Resources,

of the COP. This analysis includes resources potentially impacted by the construction, operation and decommissioning of both the onshore and offshore project areas. For example, the analysis in Section 4.2, Biological Resources, of the COP identified the Oceanic Whitetip Shark and the Scalloped Hammerhead Shark (both federally threatened species) as potentially occurring within the offshore area; however, they are not expected to linger in the area. These species were not identified by the NOAA GARFO ESA Section 7 Mapper that was used for the analysis in this section.

4.0 Response to a Worst-Case Discharge

Every attempt will be made to prevent a spill from impacting the shoreline, including diverting a spill to prevent it from impacting the sensitive environmental resources identified in this section. Regardless of an estimated low probability of a spill impacting the shoreline, Dominion Energy has existing contracts with USCG certified OSROs who would immediately be notified in the event of an oil spill. Our OSROs are available on a 24-hour basis and they maintain spill response equipment and have the experience and expertise to respond to an oil spill event. The OSROs are required to conduct testing and drills using their equipment and Dominion Energy conducts table-top exercises with our OSROs. Specific actions to be taken will depend on the individual spill event but may include the following:

- Containment booming – This method is used for spills on water and involves deploying boom around free oil. The boom may be anchored or left to move with the oil.
- Diversion booming – Also used for spills on water, in this method the boom is deployed at an angle to the approaching oil to divert the spill to a less sensitive area.
- Oil skimming recovery – This is primarily used in conjunction with booming to skim the oil off of the water. Oil skimming is used primarily for more significant oil contamination.
- Sorbents – Sorbents can be used on water or shorelines. On water this is used with booming on quiet water. Sorbents are used primarily for minor oil contamination.
- Manual removal/scraping – This is used on shorelines or land and involves physical removal primarily with hand tools.
- Flushing and washing – These methods are used on shorelines and involve flushing and washing (using warm water) to remove oil entrenched in soils or vegetation. These methods are typically used for larger spills on land and can cause disturbance to the soil and vegetation. They should not be needed for this site and should only be used in consultation with the regulating entities.

Additional details on these cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response."

4.1 Response Equipment

[30 CFR §254.26(d)(1), 254.44]

Dominion Energy will maintain an active master agreement with an OSRO. The OSRO will supply all the response equipment required to contain and clean up a worst-case discharge. To determine the OSROs effective daily recovery capacity, the manufacturer's rated daily throughput was multiplied by 20% to account for limitations. The closest OSRO office is in Norfolk and it has 4 skimmers with a recovery capacity of 5,000 bbls/day (210,000 gal/day) each so the effective daily recovery capacity of a single skimmer is 1,000 bbls/day (42,000 gal/day). Since our worst-case discharge is only 92,704 gal, our OSRO has more than enough resources to contain and clean up a worst-case discharge. See Appendix II for a list of the OSRO's response equipment.

4.2 Response Personnel

[30 CFR §254.26(d)(2)]

Dominion Energy will maintain an active master agreement with an OSRO. The OSRO will supply all of the personnel, materials, and support vessels required to deploy and operate the response equipment required for a worst-case discharge.

4.3. Oil Storage, Transfer, and Disposal Equipment

[30 CFR §254.26(d)(3)]

Dominion Energy will maintain an active master agreement with an OSRO. The OSRO will supply all the oil storage, transfer and disposal equipment required for a worst-case discharge. Due to the location, quantity, and oil type within the WTGs and Offshore Substations, a worst-case discharge is not expected to get to the shoreline therefore all clean up will be on the water. The OSRO will be onsite within 12 hours and has the oil storage, transfer, and disposal equipment capacity for the worst-case scenario. According to our worst-case scenario modeling, with a response time of 12 hours, the remaining oil floating on water would be 37,209 gallons (50%); however, it is still more than 30km from shore. See the Trajectory Analysis section in this Appendix for more information on remaining floating oil for varying scenarios.

In the unlikely event that a spill does reach the shoreline, the OSRO also maintains equipment for shoreline cleanup.

See Appendix II for a list of equipment provided by the OSRO that can be used to recover and store oil.

4.4 Estimated Timeline

[30 CFR §254.26(d)(4)]

Dominion Energy is relying on the OSRO for a response to a worst-case discharge and will be responsible for all of the response stages listed below. All necessary personnel and response items are included within the OSRO contract and therefore those personnel and items are already procured. The following is an estimated timeline for a response to a worst-case discharge:

Response	Estimated Time
Procurement of the identified containment, recovery, and storage equipment.	0 hrs
Procurement of equipment transportation vessel(s)	0 hrs
Procurement of personnel to load and operate the equipment	0 hrs
Equipment loadout	Within 12 hrs total (individual times may vary based on equipment needs and weather)
Travel to the deployment site	
Equipment deployment	

APPENDIX IV: DISPERSANT USE PLAN

[30 CFR § 254.27]

Dispersants are chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column. Due to the location and the small capacity of the WTG and Offshore Substation, a Dispersant Use Plan would not be practicable because an oil spill would disperse quickly without any aid from chemical dispersants.

APPENDIX V: IN SITU BURNING PLAN

[30 CFR § 254.28]

In Situ Burning is when oil or oily materials are burned to minimize material handling and disposal requirements. Due to the location and small capacity of the WTG and Offshore Substation, an In Situ Burning Plan would not be practicable because a spill will disperse quickly.

APPENDIX VI: TRAINING AND DRILLS

[30 CFR § 254.29, 254.41, 254.42, 254.43]

1.0 Personnel Training

[30 CFR § 254.41]

All QIs, SMT members, and SROT members must receive annual training on their specific roles and responsibilities as well as the execution of the procedures contained within this OSRP.

Training for SROT members must include:

- Deployment and operation of the response equipment they will use

Training for SMT members including QIs must include:

- Locations, intended use, deployment strategies, and the operational and logistical requirements of response equipment
- Spill reporting procedures
- Oil spill trajectory analysis and predicting spill movement
- Any other responsibilities the spill management team may have

Records of the type of training and the dates for each applicable individual will be kept by the Dominion Energy Power Generation Renewable Energy group or available electronically and will be maintained for at least 2 years.

2.0 Personnel and Equipment Exercises

[30 CFR § 254.42, 254.43, PREP Guidelines]

Dominion Energy response personnel, government agencies, contractors, and other resources must participate in response exercises required by Federal, State, or Local Regulations and as detailed in the "National Preparedness for Response Exercise Program (PREP) Guidelines." The Company will conduct announced and unannounced drills to maintain compliance. Dominion Energy must notify the Chief, OSPD of the date of each exercise 30 days prior. The following table lists the triennial exercise cycle for facilities (see PREP Guidelines for full details).

Triennial Cycle			
Total Number	**Frequency**	**Exercise Type/Description**	**Responsible Party**
36	Monthly	Response Equipment Inspection	OSRO
6	Semi-annual	Equipment Deployment Exercise (Facilities with equipment staged offshore)	N/A
3	Annual	QI Notification Exercise (24-hour manned facilities only)	Facility
3	Annual	Spill Management Team Tabletop Exercise	OSRO
3	Annual	Equipment Deployment Exercise (Facilities with equipment staged onshore)	OSRO
3	Annual	Unannounced Exercise (not a separate exercise) Actual response can be considered as an unannounced exercise.	OSRO

Note: All response plan components must be exercised at least once in the triennial cycle.

2.1 Monthly Response Equipment Inspection

[30 CFR § 254.43]

Scope: Ensure that the response equipment listed in the OSRP is inspected at least monthly and is maintained, as necessary, to ensure optimal performance.

Objective: Ensure that the OSRO performs monthly inspections on their response equipment.

General: Keep inspection and maintenance records for at least 2 years and are made available to any authorized BSEE representative upon request.

2.2 Semi-Annual Equipment Deployment Exercise (Facilities with equipment staged offshore)

[30 CFR § 254.42 (b)(4), PREP Guidelines]

This exercise only applies to facilities/OSROs with equipment staged offshore, therefore this requirement is not applicable.

2.3 Annual QI Notification Exercise

[30 CFR § 254.42 (b)(3), PREP Guidelines]

This exercise only applies to 24-hour manned facilities; therefore, this facility is exempt from this requirement. However, the facility will perform this exercise as a best management practice.

Scope: Exercise and test communications between personnel on each facility manned on a 24-hour basis and qualified individual; information to be provided in the event of a spill must be simulated during this exercise.

Objective: Voice contact must be made with the qualified individual. Test the ability of facility personnel to communicate pertinent information in a timely manner to the QI.

General: You must maintain the records for training and exercises for 3 years and the records must be provided to BSEE or BOEM upon request.

2.4 Annual Equipment Deployment Exercise (Facilities with equipment staged onshore)

[30 CFR § 254.42 (b)(2), PREP Guidelines]

Scope: Verify that the OSRO(s) has completed the equipment deployment exercise requirements and monthly inspection requirements and has maintained the necessary documentation.

Objective: Demonstrate the ability of the personnel to deploy and operate response equipment. Ensure that the response equipment is in proper working condition.

General: The OSRO may deploy equipment at any location, so long as it occurs within an operating environment similar to the Facility's.

2.5 Annual SMT Tabletop Exercise

[30 CFR § 254.42 (b)(1), PREP Guidelines]

Scope: Exercise the SMT's organization, communication, and decision making in managing a response. You must not reveal the spill scenario to team members before the exercise starts.

Objective: Exercise the SMT in a review of the following:

- Knowledge of the Plan.
- Proper notifications.
- Communications system.
- Ability to access an OSRO.
- Coordination of OSRO containment and recovery activity.
- Coordination of organization or agency personnel with responsibility for spill response.
- Ability to effectively coordinate response activity with the National Response System (NRS) Infrastructure.
- Ability to access information in the Area Contingency Plan.

General: You must exercise the entire OSRP (worst-case discharge) at least once every 3 years.

2.6 Unannounced Exercise

[30 CFR § 254.42 (g), PREP Guidelines]

2.6.1 Plan Holder Initiated Unannounced Exercise

An unannounced exercise is not a separate exercise. Any of the previously described exercises may be used as an unannounced exercise, except for the QI Notification and annual OSRO-owned Equipment Deployment. An unannounced exercise is where the exercise participants do not have prior knowledge of the exercise, as would be the situation in an actual spill incident.

2.6.2 Government Initiated Unannounced Exercise

Scope: The Facility may be required to participate in only one unannounced exercise every 36 months from the date of the last government-initiated unannounced exercise.

- Exercises are limited to approximately four hours in duration.
- Exercises would involve response to a Small/Average Most Probable Discharge scenario.
- Exercise would involve equipment deployment to respond to a spill scenario.

Objective: Conduct proper notifications to respond to unannounced scenario of a Small/Average Most Probable Discharge. Demonstrate that the response is timely, conducted with an adequate amount of equipment for the scenario, and properly conducted.

General: This exercise is only applicable to those facilities that are randomly chosen.

2.6 Area Level Exercises

[PREP Guidelines]

Objective: The purpose of the Area FE/FSE is to exercise the ACP and the response community in a particular Area. The response community is comprised of the federal, state, and local government, industry, and tribal invitees. The Area FE/FSEs are also designed to exercise the government and industry interface for spill response or response to a significant threat of a spill.

General: The goal of the PREP is to conduct an Area FE/FSE for each ACP during each quadrennial cycle. The design and execution of such exercises is a collaborative process involving the FOSC, the Area Committee, and industry. Division of labor and level of effort among all government and industry stakeholders is exercise specific. The lead exercise planning role may be filled by either USCG or EPA, industry, or a combination thereof. However, it is important that the design team composition includes all appropriate stakeholders. A joint exercise design team should be comprised of representatives from the federal, state, and local government agencies, the local response community, and an industry plan holder. If applicable, tribal entities will be invited to participate. The lead planning element, if one is designated, will coordinate the overall execution of the Area FE/FSE; however, it remains the ultimate responsibility of the Area Committee under the direction of the FOSC. The lead planning partner and the Area Committee Chair will share the final decision-making authority for the design of the exercise, including the scope and scenario.

2.7 Exercise Documentation

[30 CFR § 254.42 (e)]

All exercises should be documented and maintained at the Facility; documentation should specify:

- The type of exercise;
- Date and time of the exercise;
- A description of the exercise;
- The objectives met in the exercise;
- The components of the response plan exercised; and
- Lessons Learned.

Exercise documentation should be kept on file for the required length of time depending on the regulating agency (three (3) years for the BSEE.)

APPENDIX VII: SAFETY DATA SHEETS

See attached Safety Data Sheets (SDSs) for more information on the products stored in the WTG and OSS.

1.0 Transformer Oil SDS

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

1.1 Product identifier

Trade name : Diala S4 ZX-I
Product code : 001E8701

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

Use of the Substance/Mixture : Insulating oil.
Uses advised against :
This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : **Shell UK Oil Products Limited**
Shell Centre
London
SE1 7NA
United Kingdom
Telephone : (+44) 08007318888
Telefax :
Email Contact for Safety Data Sheet : If you have any enquiries about the content of this SDS please email lubricantSDS@shell.com

1.4 Emergency telephone number
: +44-(0) 151-350-4595

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Aspiration hazard, Category 1 — H304: May be fatal if swallowed and enters airways.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements	:		PHYSICAL HAZARDS: Not classified as a physical hazard according to CLP criteria. HEALTH HAZARDS:
		H304	May be fatal if swallowed and enters airways.
			ENVIRONMENTAL HAZARDS: Not classified as environmental hazard according to CLP criteria.
Precautionary statements	:	**Prevention:**	
			No precautionary phrases.
		Response:	
		P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
		P331	Do NOT induce vomiting.
		Storage:	
		P405	Store locked up.
		Disposal:	
		P501	Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
Contains Distillates (Fischer - Tropsch), heavy, C18-50 - branched, cyclic and linear.

2.3 Other hazards

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.
Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Used oil may contain harmful impurities.
Not classified as flammable but will burn.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Fischer-Tropsch derived hydrocarbon base oil.

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
Distillates (Fischer - Tropsch), heavy, C18-50 – branched, cyclic and linear	848301-69-9 482-220-0 01-0000020163-82	Asp. Tox.1; H304	95 - 100
Butylated hydroxytoluene	128-37-0 204-881-4	Aquatic Chronic1; H410	0.1 - 0.24

	01-2119565113-46	Aquatic Acute1; H400	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : No treatment necessary under normal conditions of use.
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.

If swallowed : Call emergency number for your location / facility.
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
The onset of respiratory symptoms may be delayed for several hours after exposure.
Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.
Ingestion may result in nausea, vomiting and/or diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Notes to doctor/physician:
Potential for chemical pneumonitis.
Call a doctor or poison control center for guidance.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	:	Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	6.1.1 For non emergency personnel: Avoid contact with skin and eyes. 6.1.2 For emergency responders: Avoid contact with skin and eyes.

6.2 Environmental precautions

Environmental precautions	:	Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.

SECTION 7: Handling and storage

General Precautions	:	Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Product Transfer	:	Proper grounding and bonding procedures should be used during all bulk transfer operations to avoid static accumulation.

7.2 Conditions for safe storage, including any incompatibilities

Other data	:	Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers. Store at ambient temperature. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product. The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance may be obtained from the local environmental agency office.
Packaging material	:	Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: PVC.
Container Advice	:	Polyethylene containers should not be exposed to high

temperatures because of possible risk of distortion.

7.3 Specific end use(s)

Specific use(s) : Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Oil mist, mineral		TWA	5 mg/m3	US. ACGIH Threshold Limit Values
Butylated hydroxytoluene	128-37-0	TWA	10 mg/m3	GB EH40
Further information	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			

Biological occupational exposure limits

No biological limit allocated.
Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.
Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA) , Germany http://www.dguv.de/inhalt/index.jsp

L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

8.2 Exposure controls

Engineering measures The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.
Always observe good personal hygiene measures, such as washing hands 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.
Do not ingest. If swallowed then seek immediate medical assistance

Personal protective equipment

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection	:	If material is handled such that it could be splashed into eyes, protective eyewear is recommended. Approved to EU Standard EN166.
Hand protection		
Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For

short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.
It is good practice to wear chemical resistant gloves.

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
Select a filter suitable for combined particulate/organic gases and vapours [Type A/Type P boiling point > 65°C (149°F)] meeting EN14387 and EN143.

Thermal hazards : Not applicable

Hygiene measures : Exposure to this product should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication "COSHH Essentials".

Environmental exposure controls

General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid at room temperature.
Colour	:	colourless
Odour	:	Slight hydrocarbon
Odour Threshold	:	Data not available
pH	:	Not applicable
pour point	:	<= -40 °CMethod: ISO 3016
Initial boiling point and boiling range	:	> 280 °Cestimated value(s)
Flash point	:	191 °C Method: ISO 2719
Evaporation rate	:	Data not available
Flammability (solid, gas)	:	Data not available
Upper explosion limit	:	Typical 10 %(V)
Lower explosion limit	:	Typical 1 %(V)
Vapour pressure	:	< 0.5 Pa (20 °C) estimated value(s)
Relative vapour density	:	> 1estimated value(s)
Relative density	:	0.805 (20 °C)
Density	:	<= 895 kg/m3 (20 °C) Method: ISO 3675
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: > 6(based on information on similar products)
Auto-ignition temperature	:	> 320 °C
Decomposition temperature	:	Data not available

Viscosity		
Viscosity, dynamic	:	Data not available
Viscosity, kinematic	:	<= 12.00 mm2/s (40.0 °C) Method: ISO 3104
Explosive properties	:	Not classified
Oxidizing properties	:	Data not available

9.2 Other information

Conductivity	:	This material is not expected to be a static accumulator.

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

Stable.
No hazardous reaction is expected when handled and stored according to provisions

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid	:	Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Basis for assessment	:	Information given is based on data on the components and the toxicology of similar products.Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure	:	Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	:	LD50 rat: > 5,000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met. Remarks: Aspiration into the lungs may cause chemical pneumonitis which can be fatal.
Acute inhalation toxicity	:	Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	LD50 Rabbit: > 5,000 mg/kg Remarks: Low toxicity: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Product:

Remarks: For respiratory and skin sensitisation:, Not a sensitiser., Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

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

Carcinogenicity

Product:

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

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Material	GHS/CLP Carcinogenicity Classification
Distillates (Fischer - Tropsch), heavy, C18-50 – branched, cyclic and linear	No carcinogenicity classification.
Butylated hydroxytoluene	No carcinogenicity classification.

Material	Other Carcinogenicity Classification
Butylated hydroxytoluene	IARC: Group 3: Not classifiable as to its carcinogenicity to humans

Reproductive toxicity

Product:

:

Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are not met.

STOT - single exposure

Product:

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

STOT - repeated exposure

Product:

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

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which

can be fatal.

Further information

Product:

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Slightly irritating to respiratory system.

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

Summary on evaluation of the CMR properties

Germ cell mutagenicity-Assessment	:	This product does not meet the criteria for classification in categories 1A/1B.
Carcinogenicity - Assessment	:	This product does not meet the criteria for classification in categories 1A/1B.
Reproductive toxicity - Assessment	:	This product does not meet the criteria for classification in categories 1A/1B.

SECTION 12: Ecological information

12.1 Toxicity

Basis for assessment	:	Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

Product:

Toxicity to fish (Acute toxicity)	:	Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to crustacean (Acute toxicity)	:	Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.

Toxicity to algae/aquatic plants (Acute toxicity)	:	Remarks: LL/EL/IL50 > 100 mg/l Practically non toxic: Based on available data, the classification criteria are not met.
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to crustacean (Chronic toxicity)	:	Remarks: Data not available
Toxicity to microorganisms (Acute toxicity)	:	Remarks: Data not available

Components:
Butylated hydroxytoluene :

M-Factor (Short-term (acute) aquatic hazard)	:	1

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Not readily biodegradable., Major constituents are inherently biodegradable, but contains components that may persist in the environment.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Contains components with the potential to bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: > 6Remarks: (based on information on similar products)

12.4 Mobility in soil

Product:

Mobility	:	Remarks: Liquid under most environmental conditions., If it enters soil, it will adsorb to soil particles and will not be mobile. Remarks: Floats on water.

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Product:

Additional ecological information	:	Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential., Product

is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.
Poorly soluble mixture., Causes physical fouling of aquatic organisms.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Waste, spills or used product is dangerous waste.
Contaminated packaging	:	Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local legislation		
Waste catalogue	:	EU Waste Disposal Code (EWC):
Waste Code	:	13 03 07*
Remarks	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Classification of waste is always the responsibility of the end user. Hazardous Waste (England and Wales) Regulations 2005.

SECTION 14: Transport information

14.1 UN number

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.2 Proper shipping name

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.3 Transport hazard class

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.5 Environmental hazards

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good

14.6 Special precautions for user

Remarks	:	Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

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

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Product is not subject to Authorisation under REACH.
Volatile organic compounds	:	0 %

Other regulations	:	The regulatory information is not intended to be comprehensive. Other regulations may apply to this material. Environmental Protection Act 1990 (as amended). Health and Safety at Work etc. Act 1974. Consumers Protection Act 1987. Pollution Prevention and Control Act 1999. Environment Act 1995. Factories Act 1961. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (as amended). Personal Protective Equipment Regulations 2002. Personal Protective Equipment at Work Regulations 1992. Hazardous Waste (England and Wales) Regulations 2005(as amended). Control of Major Accident Hazards Regulations 1999 (as amended). Renewable Transport Fuel Obligations Order 2007 (as amended). Energy Act 2011. Environmental Permitting (England and Wales) Regulations 2010 (as amended). Waste (England and Wales) Regulations 2011 (as amended). Planning (Hazardous Substances) Act 1990 and associated regulations. The Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2011. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XIV. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), annex XVII. Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (Seveso III). Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work and its amendments. Directive 1994/33/EC on the protection of young people at work and its amendments. Council Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding and its amendments.

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

EINECS/ELINCS/EC	:	All components listed or polymer exempt.
TSCA	:	All components listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

REGULATION (EC) No 1272/2008
Aspiration hazard, Category 1, H304

Classification procedure:
Expert judgement and weight of evidence determination.

Full text of H-Statements

H304	May be fatal if swallowed and enters airways.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	Short-term (acute) aquatic hazard
Aquatic Chronic	Long-term (chronic) aquatic hazard
Asp. Tox.	Aspiration hazard

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut fur Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code

GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level
OE_HPV = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of Chemicals
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

Further information

Training advice :

Provide adequate information, instruction and training for operators.

Other information : This product is classified as H304 (May be fatal if swallowed and enters airways). The risk relates to potential for aspiration. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Chapter 8 of the SDS. An exposure scenario is not presented.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

2.0 Engine Coolant SDS

BASF
The Chemical Company

Safety data sheet

BASF Safety data sheet according to Regulation (EC) No. 1907/2006 as amended from time to time.
Date / Revised: 27.10.2014 Version: 8.0
Product: **Glysantin® G30®**
(ID no. 30279144/SDS_GEN_GB/EN)
Date of print 28.10.2014

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

1.1. Product identifier

Glysantin® G30®

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

Relevant identified uses: engine coolant

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF plc
PO Box 4, Earl Road, Cheadle Hulme,
Cheadle, Cheshire
SK8 6QG, UNITED KINGDOM

Telephone: +44 161 485-6222
E-mail address: product-safety-north@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4 (oral)
STOT RE (Kidney) 2

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:
Harmful if swallowed.
Harmful: danger of serious damage to health by prolonged exposure if swallowed.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:

H302	Harmful if swallowed.
H373	May cause damage to organs (Kidney) through prolonged or repeated exposure.

Precautionary Statements (Prevention):

P260	Do not breathe dust/gas/mist/vapours.
P270	Do not eat, drink or smoke when using this product.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P311	Call a POISON CENTER or doctor/physician.
P301 + P330	IF SWALLOWED: rinse mouth.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: ETHANE-1,2-DIOL/ETHYLENEGLYCOL

According to Directive 67/548/EEC or 1999/45/EC

Directive 1999/45/EC ('Preparation Directive')

Hazard symbol(s)

Xn Harmful.

R-phrase(s)

R22	Harmful if swallowed.
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.

S-phrase(s)

S2	Keep out of the reach of children.
S24/25	Avoid contact with skin and eyes.
S46	If swallowed, seek medical advice immediately and show this container or label.

Hazard determining component(s) for labelling: ETHANE-1,2-DIOL/ETHYLENEGLYCOL

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

ethanediol; ethylene glycol

inhibitors

Hazardous ingredients (GHS)
according to Regulation (EC) No. 1272/2008

ethanediol; ethylene glycol

Content (W/W): > 90 % CAS Number: 107-21-1 EC-Number: 203-473-3 REACH registration number: 01-2119456816-28 INDEX-Number: 603-027-00-1	Acute Tox. 4 (oral) STOT RE (Kidney) 2 H302, H373

Hazardous ingredients
according to Directive 1999/45/EC

ethanediol; ethylene glycol
Content (W/W): > 90 %
CAS Number: 107-21-1
EC-Number: 203-473-3
REACH registration number: 01-2119456816-28
INDEX-Number: 603-027-00-1
Hazard symbol(s): Xn
R-phrase(s): 22, 48/22

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth immediately and then drink plenty of water, seek medical attention. Administer 50 ml of pure ethanol in a drinkable concentration.

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

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

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

Treatment: Symptomatic treatment (decontamination, vital functions).

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media
Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam

5.2. Special hazards arising from the substance or mixture
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective clothing.

6.2. Environmental precautions
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
Ensure thorough ventilation of stores and work areas. Shut containers immediately after taking product because product takes up the humidity of air.

Protection against fire and explosion:
No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Storage in galvanized containers is not recommended.

7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

Refer to the current edition of HSE Guidance Note EH40 Occupational Exposure Limits (United Kingdom).

107-21-1: ethanediol; ethylene glycol
TWA value 52 mg/m3 ; 20 ppm (OEL (EU))
indicative
STEL value 104 mg/m3 ; 40 ppm (OEL (EU))
indicative
Skin Designation (OEL (EU))
The substance can be absorbed through the skin.
TWA value 10 mg/m3 (WEL/EH 40 (UK)), Particulate
TWA value 52 mg/m3 ; 20 ppm (WEL/EH 40 (UK)), vapour
STEL value 104 mg/m3 ; 40 ppm (WEL/EH 40 (UK)), vapour
Skin Designation (WEL/EH 40 (UK)), Particulate
The substance can be absorbed through the skin.
Skin Designation (WEL/EH 40 (UK)), vapour
The substance can be absorbed through the skin.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Respiratory protection in case of vapour/aerosol release. Combination filter for gases/vapours of organic compounds and solid and liquid particles (f.e. EN 14387 Type A-P2)

Hand protection:
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
nitrile rubber (NBR) - 0.4 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Do not inhale gases/vapours/aerosols. Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid	
Colour:	according to specification	
Odour:	product specific	
Odour threshold:	No applicable information available.	
pH value:	8.2 - 8.6	
solidification temperature:	< -18 °C	(DIN ISO 3016)
Boiling point:	> 160 °C	(ASTM D1120)
Flash point:	> 124 °C	(DIN EN 22719; ISO 2719)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability:	not flammable	
Lower explosion limit:	3.4 %(V) (20 °C)	(air)
Upper explosion limit:	15.1 %(V) (20 °C)	(air)
Ignition temperature:	420 °C	(DIN 51794)
Vapour pressure:	0.2 mbar (20 °C) 13 mbar (50 °C)	
Density:	1.124 g/cm3 (20 °C)	
Solubility (qualitative) solvent(s):	polar solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	Study scientifically not justified.	
Self ignition:	not self-igniting	
Thermal decomposition:	No decomposition if correctly stored and handled.	
Viscosity, kinematic:	20 - 30 mm2/s (20 °C)	(DIN 51562)

Explosion hazard: not explosive
Fire promoting properties: not fire-propagating

9.2. Other information

Miscibility with water:
miscible in all proportions
Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

SECTION 10: Stability and Reactivity

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions.

10.4. Conditions to avoid
No conditions to avoid anticipated.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, alkali metal hydroxides

10.6. Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of moderate toxicity after single ingestion. Of low toxicity after short-term skin contact.

Experimental/calculated data:
LD (human) (oral): approx. 1,600 mg/kg

Irritation

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant

Serious eye damage/irritation rabbit: non-irritant

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. Human data do not fully exclude a skin sensitizing potential.

Carcinogenicity

Assessment of carcinogenicity:
The whole of the information assessable provides no indication of a carcinogenic effect.

Developmental toxicity

Information on: ethanediol; ethylene glycol
Assessment of teratogenicity:
In animal studies the substance caused malformations when given at high doses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Information on: ethanediol; ethylene glycol
Assessment of repeated dose toxicity:
The substance may cause damage to the kidney after repeated ingestion. The substance may cause damage to the kidney after repeated skin contact with high doses.

Other relevant toxicity information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity to fish:
LC50 (96 h) > 100 mg/l, Leuciscus idus

Aquatic invertebrates:
EC50 (48 h) > 100 mg/l, Daphnia magna

Aquatic plants:
EC50 (72 h) > 100 mg/l, algae

Microorganisms/Effect on activated sludge:
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

12.2. Persistence and degradability

Elimination information:
> 70 % DOC reduction (28 d) (OECD 301 A (new version)) Readily biodegradable.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: No data available.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

Other ecotoxicological advice:
The product has not been tested. The statement has been derived from the properties of the individual components.

Do not release untreated into natural waters.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assigments.

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

This product and any uncleaned containers must be disposed of as hazardous waste in accordance with the 2005 Hazardous Waste Regulations and amendments (United Kingdom)

Waste key:
16 01 14¤ antifreeze fluids containing dangerous substances

Contaminated packaging:
Uncontaminated packaging can be re-used.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable

Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number
See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).
This product is classified under the Chemicals (Hazard Information and Packaging) Regulations, (CHIP) (United Kingdom).

15.2. Chemical Safety Assessment

Chemical Safety Assessment not yet performed due to registration timelines

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Acute Tox. 4 (oral)
STOT RE (Kidney) 2

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

Xn	Harmful.
22	Harmful if swallowed.

48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed.
Acute Tox.	Acute toxicity
STOT RE	Specific target organ toxicity — repeated exposure
H302	Harmful if swallowed.
H373	May cause damage to organs (Kidney) through prolonged or repeated exposure.

If you have any queries relating to this MSDS, it's contents or any other product safety related questions, please write to the following e-mail address: product-safety-north@basf.com

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.

3.0 Hydraulic Fluid SDS

SAFETY DATA SHEET

Section 1. Identification

Product name	Hyspin AWH-M 32
SDS #	456562
Historic SDS #:	MC25320
Code	456562-US31

Relevant identified uses of the substance or mixture and uses advised against

Product use	Hydraulic fluid For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Supplier	Castrol Industrial North America, Inc. 150 W. Warrenville Road Naperville, IL 60563 Product Information: +1-877-641-1600 BP Lubricants USA Inc. 1500 Valley Road Wayne, NJ 07470 Telephone: (973) 633-2200
EMERGENCY SPILL INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)

Section 2. Hazards identification

OSHA/HCS status	This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	Not classified.

GHS label elements

Signal word	No signal word.
Hazard statements	No known significant effects or critical hazards.
Precautionary statements	
Prevention	Not applicable.
Response	Not applicable.
Storage	Not applicable.
Disposal	Not applicable.
Hazards not otherwise classified	Defatting to the skin. Note: High Pressure Applications Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

Section 3. Composition/information on ingredients

Highly refined base oil (IP 346 DMSO extract < 3%). Proprietary performance additives.

Substance/mixture Mixture

Ingredient name	CAS number	%
Base oil - highly refined	Varies - See Key to abbreviations	≥75 - <90
Base oil - highly refined	Varies - See Key to abbreviations	≥5 - <10

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treatment should in general be symptomatic and directed to relieving any effects.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis.
Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

Specific treatments No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media Do not use water jet.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous combustion products
Combustion products may include the following:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters
Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

For emergency responders
If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill
Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill
Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures
Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Base oil - highly refined	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction **OSHA PEL (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993
Base oil - highly refined	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction **OSHA PEL (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/ manufacturer and with a full assessment of the working conditions.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Section 8. Exposure controls/personal protection

Body protection	Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Color	Brown.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Closed cup: >190°C (>374°F) [Pensky-Martens.]
Pour point	-39 °C
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Density	<1000 kg/m^3 (<1 g/cm^3) at 15°C
Solubility	insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Kinematic: 32 mm^2/s (32 cSt) at 40°C Kinematic: 6.3 mm^2/s (6.3 cSt) at 100°C

Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 10. Stability and reactivity

Conditions to avoid Avoid all possible sources of ignition (spark or flame).

Incompatible materials Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Aspiration hazard

Name	Result
Base oil - highly refined	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Skin contact No known significant effects or critical hazards.

Inhalation Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.

Ingestion No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact No specific data.

Skin contact Adverse symptoms may include the following:
irritation
dryness
cracking

Inhalation No specific data.

Ingestion No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Teratogenicity No known significant effects or critical hazards.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{OC})	Not available.
Mobility	Spillages may penetrate the soil causing ground water contamination.

Other adverse effects	No known significant effects or critical hazards.
Other ecological information	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

Special precautions for user Not available.

Section 14. Transport information

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

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b)	All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification	Not applicable.

SARA 313

Form R - Reporting requirements	This product does not contain any hazardous ingredients at or above regulated thresholds.
Supplier notification	This product does not contain any hazardous ingredients at or above regulated thresholds.

State regulations

Massachusetts	None of the components are listed.
New Jersey	The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED)
Pennsylvania	None of the components are listed.
California Prop. 65	**WARNING:** This product contains a chemical known to the State of California to cause cancer. Ethyl acrylate; arsenic **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Toluene **WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Benzene; Cadmium (Non-pyrophoric); lead

Other regulations

Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	All components are listed or exempted.
Japan inventory (ENCS)	All components are listed or exempted.
Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.
Taiwan inventory (CSNN)	Not determined.
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	1
Physical hazards	0
Personal protection	X

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

History

Date of issue/Date of revision	12/14/2015.
Date of previous issue	11/12/2014.
Prepared by	Product Stewardship
Key to abbreviations	ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell

Section 16. Other information

employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

APPENDIX VIII: References

Area Contingency Plans and associated references of the areas covered under this plan:

- Regional Response Team III Regional Contingency Plan

  https://www.nrt.org/sites/72/files/2019-11-20_Final_RRT3_%20RCP_rev1.pdf

- Virginia Area Contingency Plan

  https://www.deq.virginia.gov/home/showpublisheddocument/10459/637647225838000000

- Commonwealth of Virginia Emergency Operations Plan

  https://www.vaemergency.gov/wp-content/uploads/2021/07/2021-COVEOP-Final-APPROVED-102021-1.pdf

- USCG Incident Management Handbook

  https://www.atlanticarea.uscg.mil/Portals/7/Ninth%20District/Documents/USCG_IMH_2014_COMDTPUB_P3120.17B.pdf?ver=2017-06-14-122531-930

- Emergency Planning and Community Right-to-Know Act

  https://www.epa.gov/epcra

- Lead Acid Battery Reporting Under EPCRA

  https://www.epa.gov/sites/production/files/2013-08/documents/revised-lead-acid-memorandum.pdf

APPENDIX IX: Plan Revisions

This Plan will be reviewed at least every 6 months and approved by the Dominion Energy Offshore Wind Project Manager, Safety Department and Dominion Energy Environmental Services (DEES). If the resulting modification includes one of the criteria listed below, then the revised Plan shall be submitted to the BSEE Chief, Oil Spill Prevention Division (OSPD). If this review does not result in any of the modifications listed below, the BSEE Chief, OSPD, shall be notified in writing that there are no substantial changes.

OSRP revisions shall be submitted for approval within 15 days whenever:

1. A change occurs which significantly reduces your response capabilities;
2. A significant change occurs in the worst-case discharge scenario or in the type of oil being handled, stored, or transported at the facility;
3. There is a change in the name(s) or capabilities of the oil spill removal organizations cited in the OSRP; or
4. There is a significant change to the Area Contingency Plan(s).