Canadian Coast Guard | Garde côtière canadienne

Environment Response – Western Region

MARINE POLLUTION RESPONSE ASSESSMENT GUIDE

This guide has been developed to assist our supporting agencies when required to conduct assessments on behalf of Environmental Response. While we appreciate your co-operation, our primary focus is maintaining your safety. If at any time, the situation becomes unsafe or you are unsure please withdraw from the scene and notify the Regional Operations Centre at 1-800-889-8852 as soon as possible.

Recognizing our assessment Partners

- Coastal First Nations
- Department of Fisheries and Oceans
- Canadian Coast Guard
- B.C. Provincial Parks
- B.C. Ministry of Environment and Climate Change
- Port and Harbour Authorities
- Transport Canada

Marine Pollution Response Assessment Guide

Initial Assessment

As an assisting agency or personnel, you will likely be tasked to conduct a spill assessment at some point. By delivering a good assessment, you will allow Environmental Response(ER) crews to make a well informed decision and start responding quickly.

A good assessment will start to determine:

- If the spill is within CCGs mandate (ship sourced, mystery, oil handling facility);
- If an evacuation is required;
- If the product is recoverable;
- Priority of response locations; and,
- What actions are being taken or planned by owner;
- Pollution counter measures: contain pollutant, protect geographical response sites, and recover pollution on water.

Regional Operations Center (ROC) 1-800-889-8852

If you don't know all the information, pass on what you have.
Information needs to be sent in as fast as possible, even if it isn't complete.

When you are tasked to conduct an assessment, this is the information you should try to collect:

SAFETY – Are there any obvious hazards?

- Are there nearby sources of hazardous chemicals? Is there a massive chemical plant that's collapsing into the river?

- Are there reports of dead wildlife in the immediate area? Dead fish and birds indicates a highly toxic chemical has been spilled.

- Are there reports of human impacts in the immediate area? Are people around the incident site complaining of headaches, feeling dizzy, or nauseous?

- Are there any sensory cues (visual or smell)? Do you get an overwhelming smell of fuel, rotten eggs, or similar?

If you answered YES to <u>any</u> of these questions, EVACUATE everyone from the area and call the ROC for assistance immediately.

SOURCE – Where is the spill coming from?

Type of source	Additional information
Vessel	• Name of the vessel and registration number • Contact information of owner / master • Vessel details (size, description, **fuel capacity,** type of fuel, etc.) • Do you know this vessel from previous encounters?
Marine Environment	• Location (latitude/longitude, general vicinity, local name) • Any nearby likely sources? For example: sewer outfall, fuel dock, vessel traffic in the area, etc.

HISTORY – General description of the incident.

- When did the incident take place?
- Is the incident still in progress?
- What (if any) cleanup measures are being taken?
- Is there anyone closer to the incident who has more information? Request their contact details and/or ask them to contact the ROC.
- Do you know who the polluter is?

Note: We want to work with people, not make them angry. Avoid being confrontational or assigning blame.

PRODUCT – What is it and how much is there?

Note: We do not attempt to collect gasoline or boom gasoline due to safety.

Origin of Product	Type	Quantity
Vessel (or similar)	The vessel should know what type of product was on board, call directly and ask.	The vessel should know how much fuel was on board, or at least the size of their tanks (maximum potential spilled volume). If they don't, make sure you report the size and type of vessel.
Mystery Sheen	Make your best guess unless you can see a likely source.	Report the size of the sheen and the color, this will allow for a volume calculation.

OIL COLOR AND APPEARANCE TERMS:

Sheen: Sheen is a very thin layer of oil (less than 0.0002 inches or 0.005 mm) floating on the water surface and is the most common form of oil seen in the later stages of a spill. According to their thickness, sheens vary in color from rainbows, for the thicker layers, to silver/gray for thinner layers ,to almost transparent for the thinnest layers.

Metallic: The next distinct oil color, thicker than rainbow, that tends to reflect the color of the sky, but withsome element of oil color, often between a light gray and a dull brown. Metallic is a “mirror to the sky.”

Transitional Dark (or True) color: The next distinct oil on water layer thickness after metallic, that tends to reflect a transitional dark or true oil color. At the “Transitional” stage most of the oil will be just thick enough to look like its natural color (typically a few thousandths of an inch, or few hundredths of a millimeter), and yet thin enough in places to appear somewhat patchy.

Dark (or True) Color: Represents a continuous true oil color (i.e., its natural color), commonly occurring at thicknesses of at least a hundredth of an inch (or, a little over a tenth of a millimeter). Oil thickness at this “Dark” stage (especially in a calm and/or contained state) could range over several orders of magnitude. At sea, however, after reaching an equilibrium condition, most oils would not achieve an average thickness beyond a few millimeters. Heavy fuel oils and highly weathered or emulsified oils (especially on very cold water) could, ofcourse, reach equilibrium states considerably greater than a few millimeters.

Emulsified oil or mousse: Water-in-oil mixture that appears as various shades of orange, brown, and/or red.

OIL STRUCTURE/DISTRIBUTION TERMS:

Streamers: Narrow bands or lines of oil (sheens, dark or emulsified) with relatively clean water on each side. Streamers may be caused by wind and/or currents, but should not be confused with multiple parallel bands of oil associated with windrows, or with convergence zones or lines commonly associated with temperature and/or salinity discontinuities.

Convergence Zone: A long narrow band of oil (and possibly other materials) often caused by the convergence of two bodies of water with different temperatures and/or salinities. Unlike windrows and streamers, commonly associated with wind, convergence zones are normally associated with the interface between differing water masses ,or with the effects of tidal and depth changes that cause currents to converge due to density differences or due to large bathymetric changes. Such zones may be several kilometers in length, and consist of dark or emulsified oil and heavy debris surrounded by sheens.

Windrows: Multiple bands or streaks of oil (sheens, dark, or mousse) that line up nearly parallel with the wind. Such streaks (typically including seaweed, foam, and other organic material) are caused by a series of counter rotating vortices in the surface layers that produce alternating convergent and divergent zones. Sometimes referred to as Langmuir vortices (after a researcher in 1938), the resulting windrows begin to form with wind speeds of approximately six knots or more.

Patches: An oil configuration or structure that reflects a broad range of shapes and dimensions. Numerous tarballs could combine to form a “patch”; oil of various colors and consistency could form a patch or single layer10s of cm to 10s (or even 100s) of meters in diameter; and a large patch of dark or rainbow oil could have patches of emulsion within it. Patches of oily debris, barely able to float with sediment/plants in the, are called “tarmats,” circular patches at sea are called “pancakes”; and REALLY BIG patches can simply be called “continuous” slicks. But, they are all patches.

Tarballs: Discrete, and usually pliable, globules of weathered oil, ranging from mostly oil to highly emulsified with varying amount of debris and/or sediment. Tarballs may vary in size from millimeters to 20–30 centimetersacross. Depending on exactly how weathered, or hardened, the outer layer of the tarballs is, sheen may or may not be present.

No Structure: Random eddies or swirls of oil at any one or more thicknesses. This distribution of oil is normally the result of little to no winds and/or currents.

OTHER OIL SLICK TERMS:

Black oil: A black or very dark brown-colored layer of oil. Depending on the quantity spilled, oil tends to spread out quickly over the water surface to a thickness of about one millimeter. However, from the air it is impossible to tell how thick a black oil layer is. The minimum thicknesses for a continuous black oil layer would commonly be around a hundredth of an inch or about two tenths of a millimeter. Dark (or Black) oils just begin to look theirnatural color at around a thousandth of an inch (or, a few hundredths of a millimeter).

Dispersion: The breaking up of an oil slick into small droplets that are mixed into the water column as a result of sea surface turbulence. For response purposes, dispersed oil is defined as oil droplets that are too small to refloat back to the surface. The physical properties of the oil and the sea state are the main factors that determine how much oil is dispersed. Chemical dispersants can be used to change the chemical properties of the oil and enhance oil dispersion.

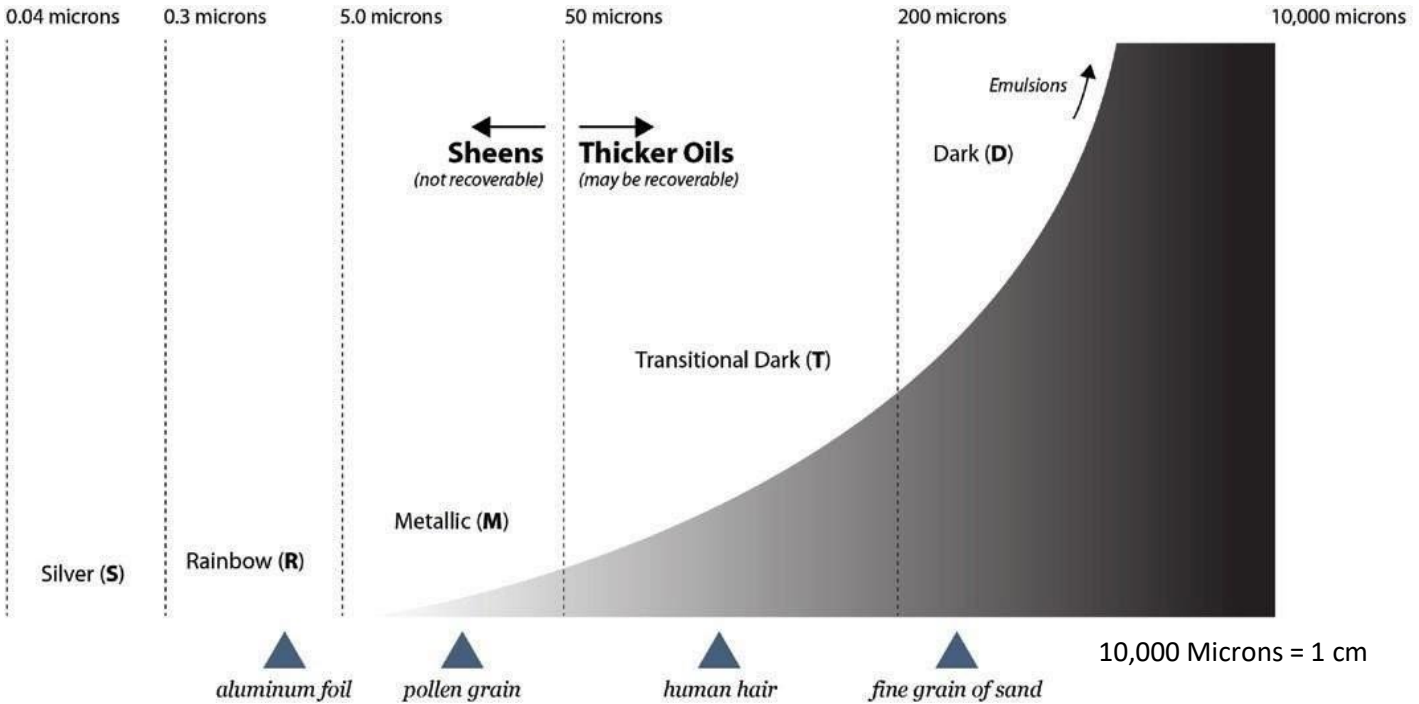
Emulsification: The formation of a water-in-oil mixture. The tendency for emulsification to occur varies with different oils and is much more likely to occur under high energy conditions (winds and waves). This mixture is frequently referred to as “mousse.” Emulsification will impact the cleanup by significantly increasing the volume and viscosity of the oil to be collected.

Weathering: A combination of physical and environmental processes such as evaporation, dissolution,dispersion, photo- oxidation, and emulsification that act on oil and change its physical properties and composition.

Recoverable Oil: Oil that is in a thick enough layer on the water to be recovered by conventional techniques and equipment. Only black or dark brown oil, mousse, and heavy metallic layers are generally considered thick enough to be effectively recovered by skimmers. Thinner films may be recoverable with sorbents and/or concentrated with booms or chemical herders to enhance their recovery. As a rule of thumb, quite often about 90% of the oil slick volume is in 10% of the observable slick area.

Slick: Oil spilled on the water that absorbs energy and dampens out the surface waves making the oil appear smoother or "slicker" than the surrounding water. Slicks refer to oil layers that are thicker than Rainbow and Silver/Gray sheens. Natural slicks from plants or animals also may occur on the water surface and may be mistaken for oil slicks.

Oil Code Color and Relative Thickness Values

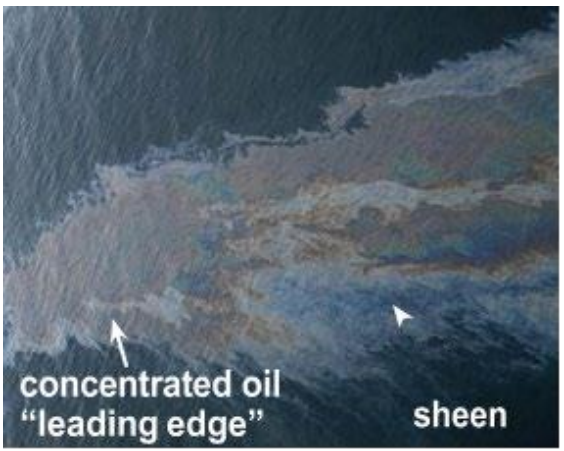


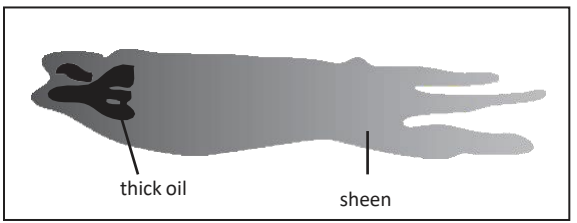
10,000 Microns = 1 cm

90/10 Rule of Thumb: (90% of the oil is located in 10% of observable oil)

Oil that is thicker than a sheen is more susceptible to environmental influences, such as wind and surface currents, causing the oil to move across the water's surface and spread. The concentrated portion of the slickwith dark oil is pushed by environmental conditions, leaving behind a thin film creating a visible sheen.

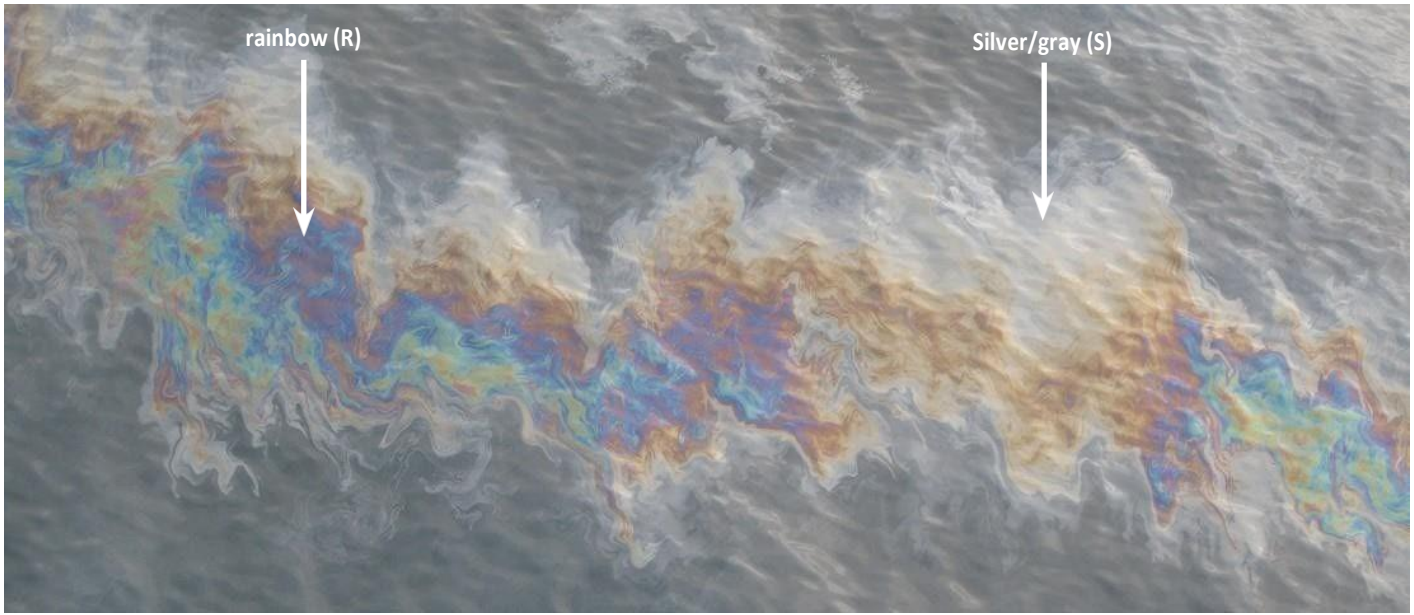
The overflight observer can assist response operations by reporting where the "thick" oil is for recovery and where sheens persist for notification purposes.





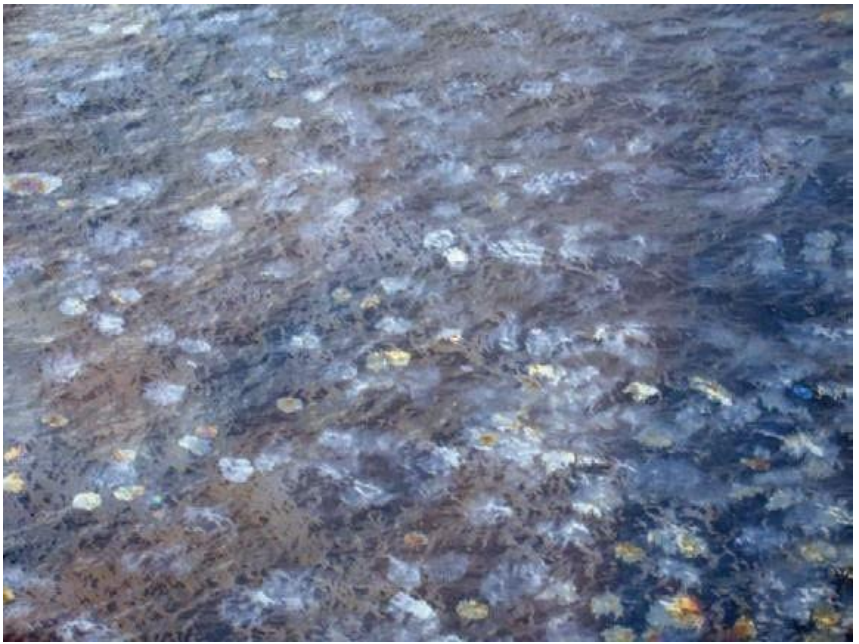
Silver/gray (S) and Rainbow (R) Sheen Oil Colors

Patches of **Silver/gray (S)** and **rainbow (R)** sheens.



SHEEN SURFACING FROM SUNKEN VESSEL

Patches of **Silver/gray (S)** and minimal amounts of **rainbow (R)** and **metallic (M)** dull brown sheens.

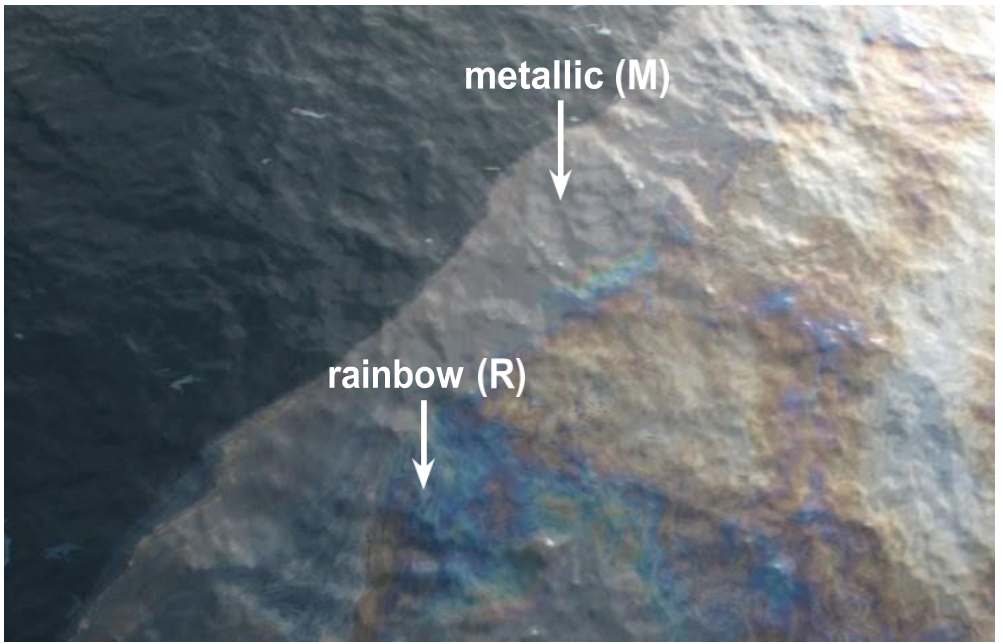


Observation altitude:
50 – 100 ft.

Platform:
Helicopter

METALLIC (M) OIL SLICK COLOR/APPEARANCE

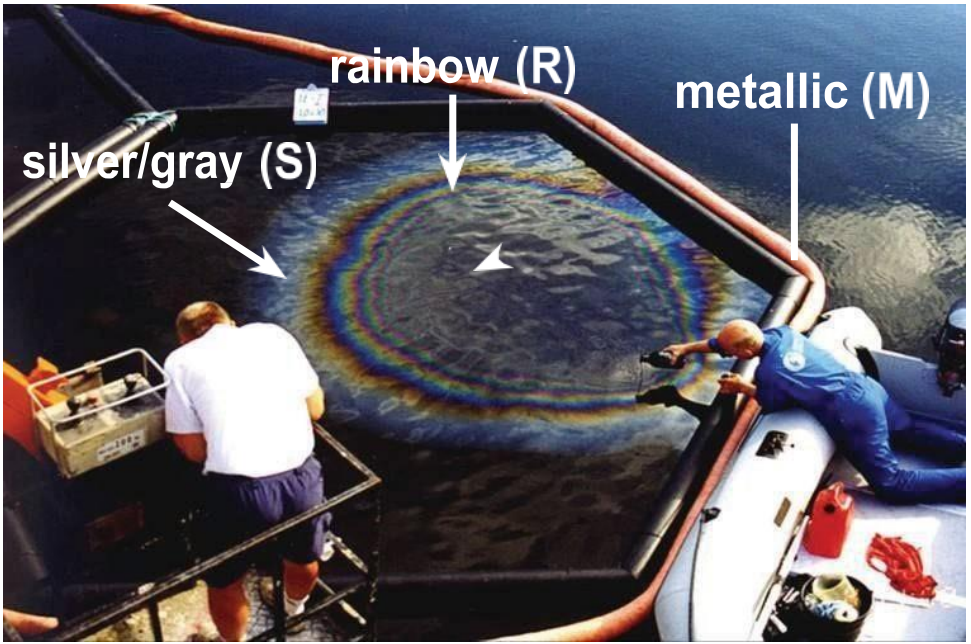
Oil layers that look metallic reflect the color of the sky, but with some element of oil color.



Observation altitude:
300 ft.

Platform:
Helicopter

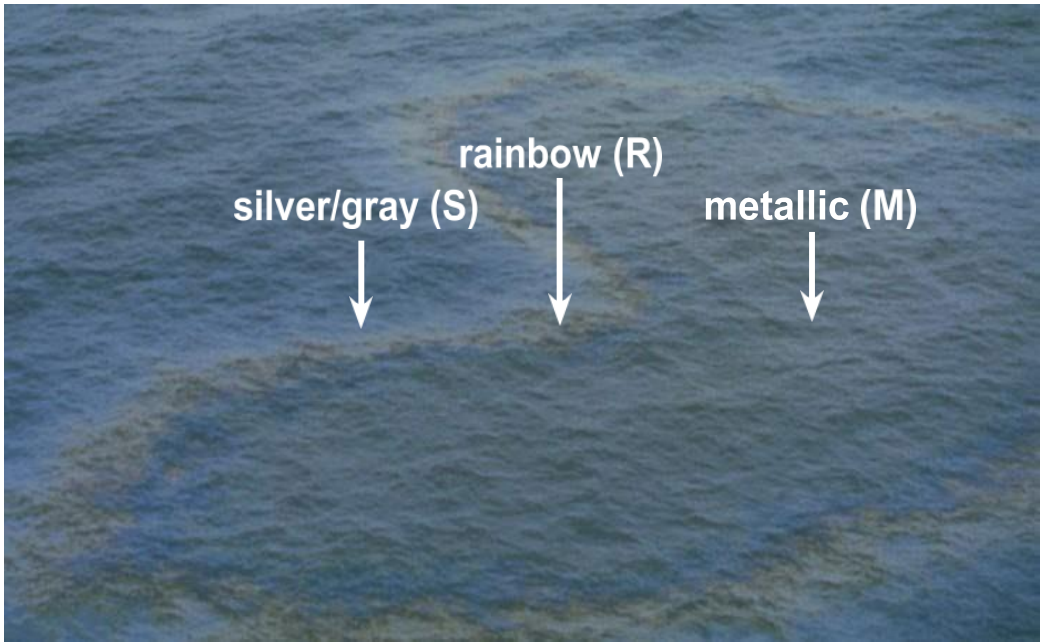
SILVER/GRAY SHEEN (S), RAINBOW (R), AND METALLIC (M) OIL COLORS



Source: Alun Lewis & SINTEF (Dec. 2002)

FRESH DIESEL SLICK

Metallic (M) dull brown slick in center fading to **rainbow (R)** and **Silver/gray (S)** along the edges.

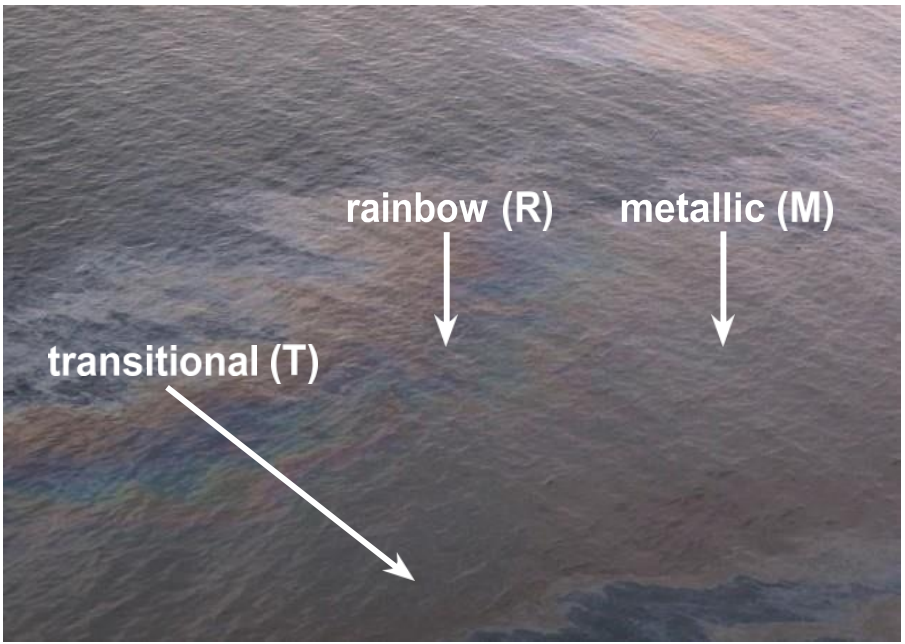


Observation altitude:
300 ft.

Platform:
Helicopter

PATCH OF TRANSITIONAL (T) OIL

Transitional (T) oil color patch in bottom half of photo. Note light **Silver/gray (S)** and **Rainbow (R)** sheen along edges.

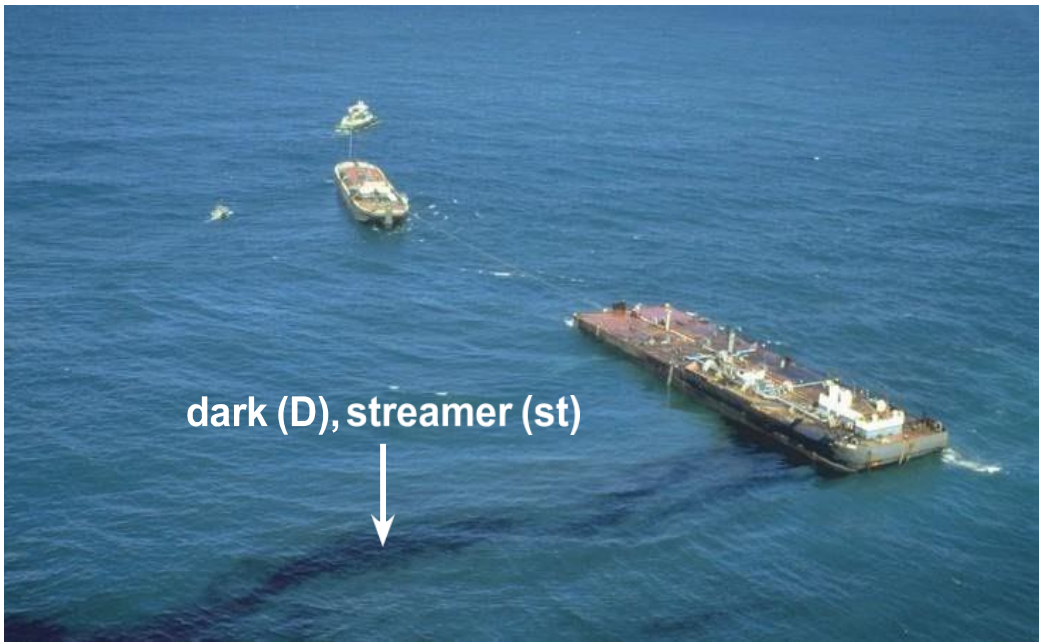


Observation altitude:
300 ft.

Platform:
Helicopter

BLACK DARK (D) OIL LEAKING FROM BARGE

Black dark (D) oil forming **streamer (st)** from barge.

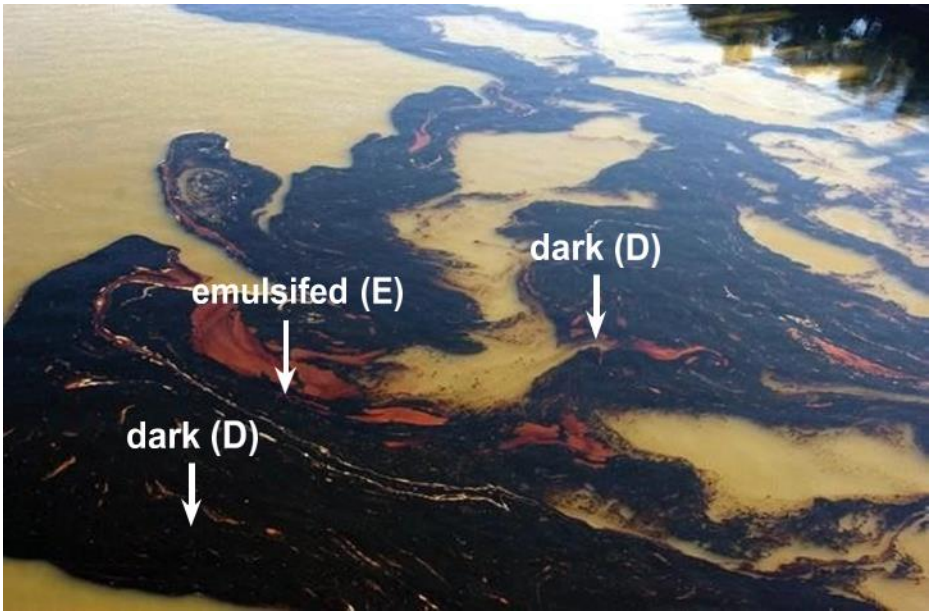


Observation altitude:
400 ft.

Platform:
Helicopter

BLACK DARK (D) OIL ON THE MISSISSIPPI RIVER

Note the small orangish streaks and patches of **emulsified (E)** oil. A true or **dark (D)** oil can have a thickness greater than 200 microns, giving volume estimates a very large range. This has a **no structure (ns)** slick configuration.



DIESEL SPILL IN MARINA

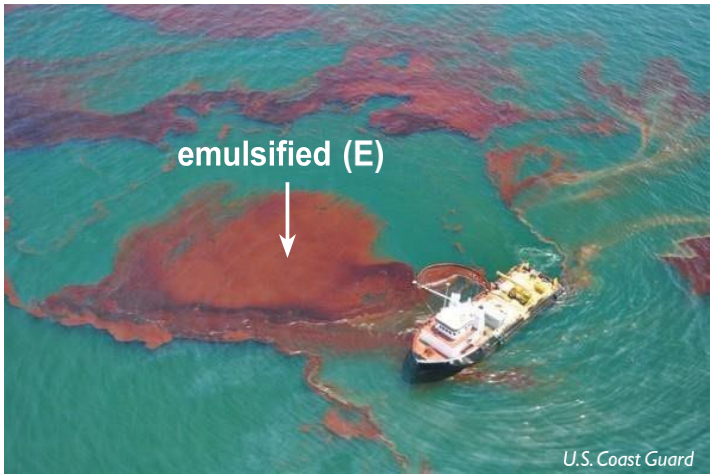
Oil spreading out into **metallic (M)** or dull brown layer, **rainbow (R)** and **Silver/gray (S)** sheens in and around piers. Very light wind and currents.

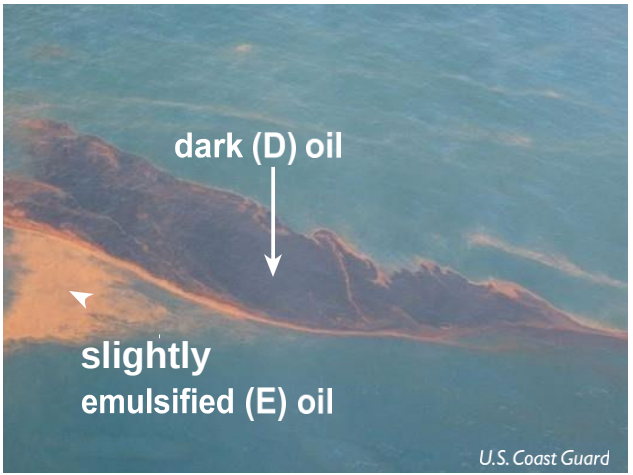
Observation altitude:
500 ft.

Platform:
Helicopter

EMULSIFIED (E) OIL

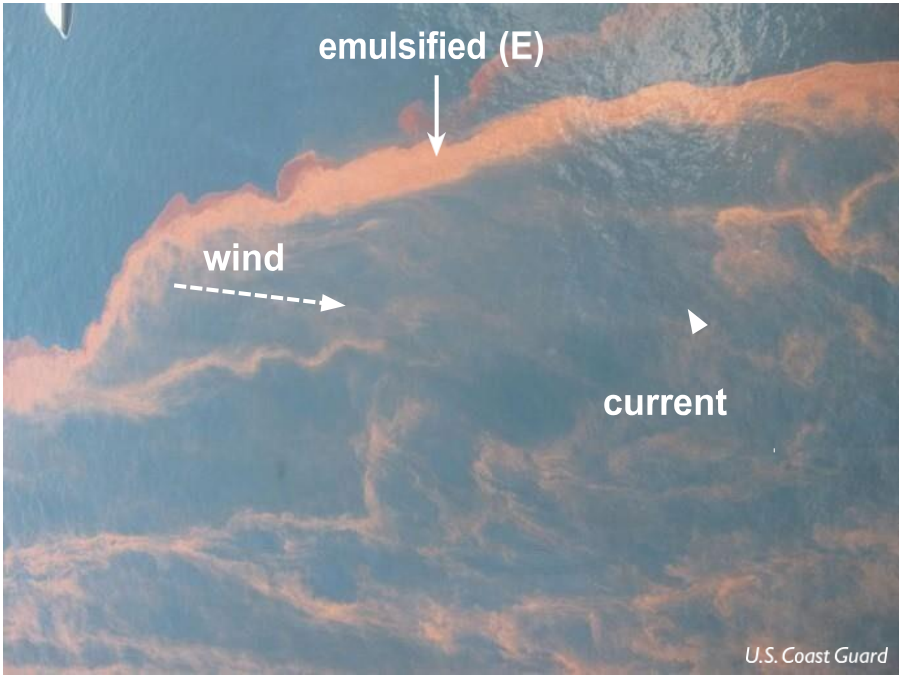
These photos shows various stages of emulsification, seen as different shades of brown. Slightly **emulsified (E)** oil is lighter brown and **emulsified (E)** oil is darker brown. Photos from the Deepwater Horizon MC-252oil spill in the Gulf of Mexico, 2010.





EMULSIFIED (E) OIL – LEADING EDGE

This type of streamer occurs when the current and the wind oppose each other. The current affects the oil more than the wind. When the oil is affected by the wind at an opposing angle, the oil tends to re-coalesce and thicken at the leading edge. So the oil gathers on the front edge and feathers on the back portion of the slick.



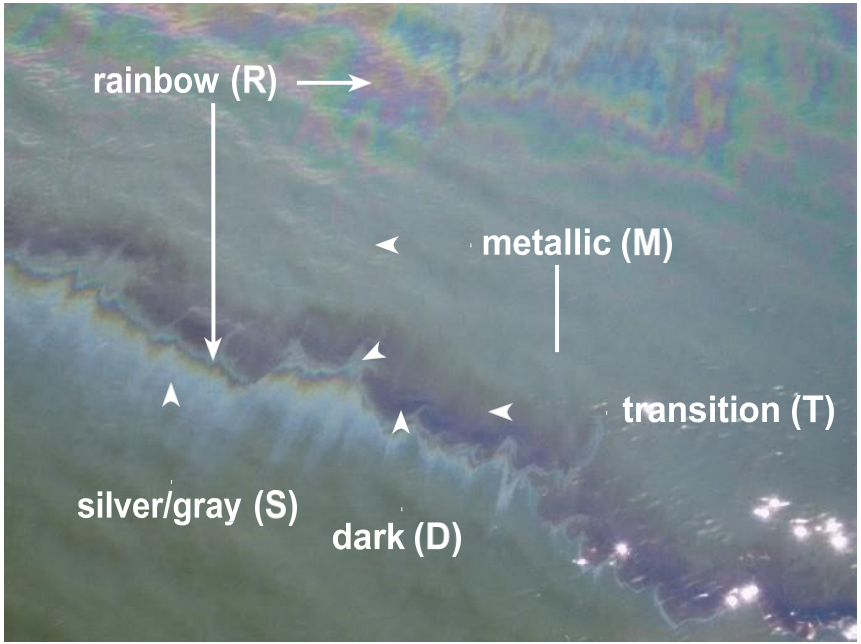
RED-DYED DIESEL ON WATER

North America has a two-tiered diesel system such that diesel used for highway vehicles has a special tax while diesel used for vessels, farm equipment, etc. is exempt from that tax. Often the latter is dyed red and can appear on water as shown by these two photos.

SUMMARY: FIVE PRIMARY COLOR CODES

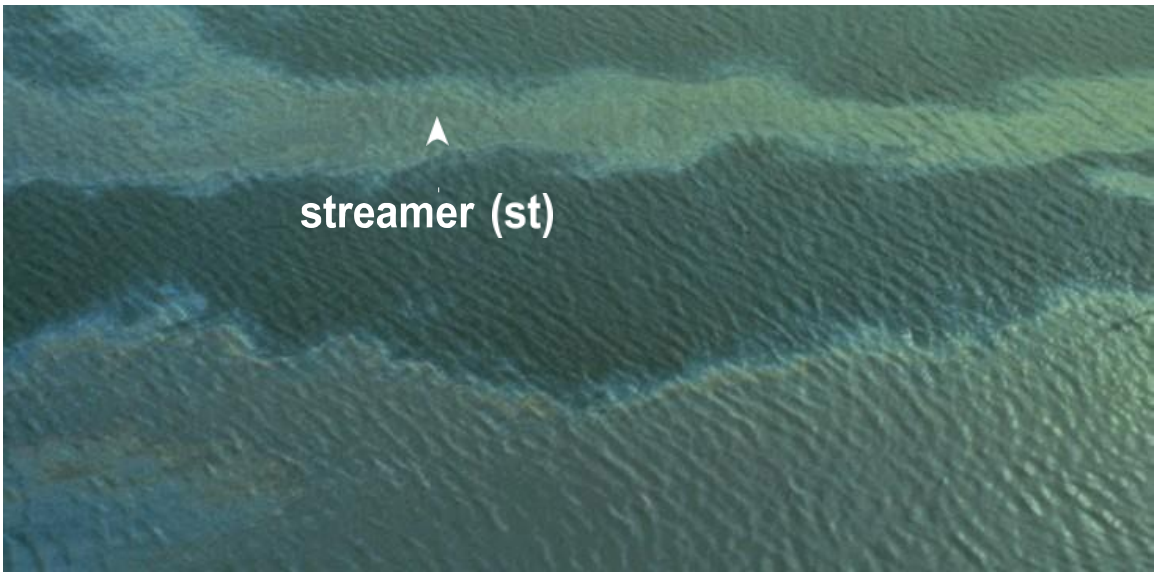
Common Descriptors	Code
Silver Sheen	S
Rainbow	R
Metallic	M
Transition	T
Dark	D
Emulsified	E

Note: “Structure” uses two lower-case letters, and “Color Codes” use single-letter capitals (R,S, M,T, D,E).



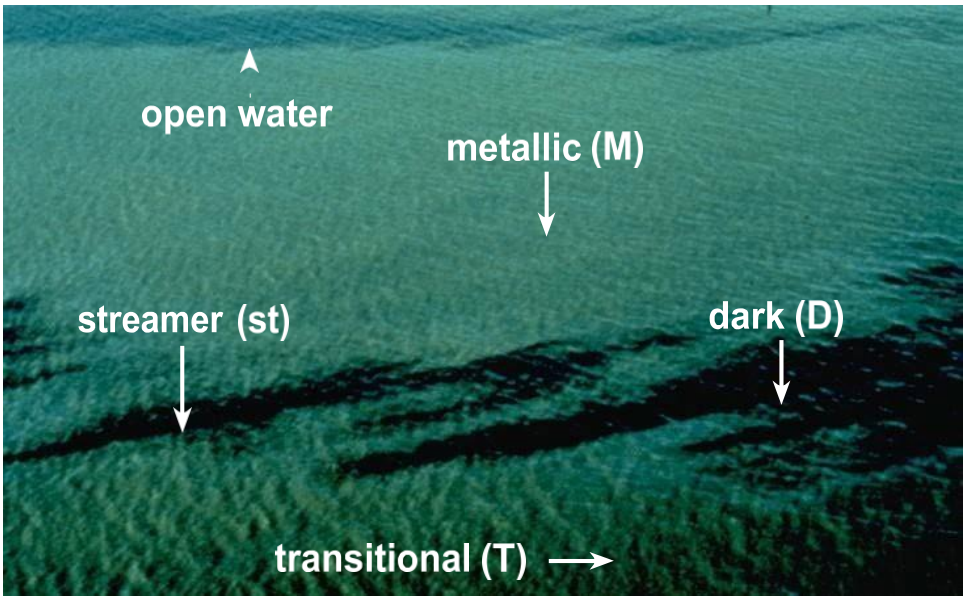
STREAMERS (st)

Narrow bands or lines of oil (sheens, dark or emulsified) with clean water on each side. Sometimes referred to as “fingers” or “ribbons.” **Streamers (st)** may be caused by wind and/or currents, but should not be confused with multiple parallel bands of oil associated with “windrows,” or with “convergence zones or lines ”commonly associated with temperature and/or salinity discontinuities.



STREAMERS (st) OF BLACK OIL

Streamers (st) of **black oil (D)** are breaking up into **Windrows (wr)** . Note **transitional (T)** and **metallic (M)** oil layers.

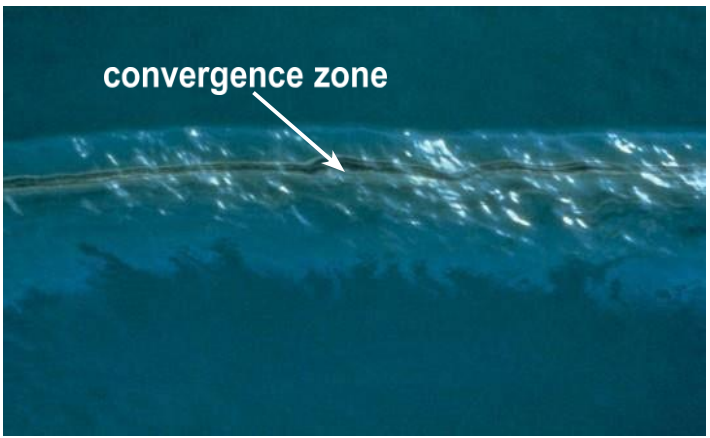


Observation altitude:
300 ft.

Platform:
Helicopter

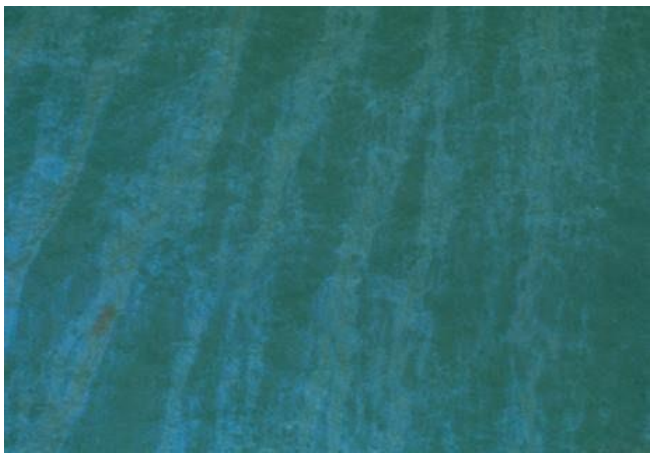
CONVERGENCE ZONE (co)

A long narrow band of oil (and possibly other materials) often caused by the convergence of two bodies of water with different temperatures and/or salinities. Unlike “windrows” and “streamers,” commonly associated with wind, convergence zones are normally associated with the interface between differing water masses, or with the effects of tidal and depth changes that cause currents to converge due to density differences or due to large bathymetric changes. Such zones may be several kilometers in length, and consist of **dark (D)** or **emulsified (E)** oil and heavy debris surrounded by sheens.



WINDROWS (wr)

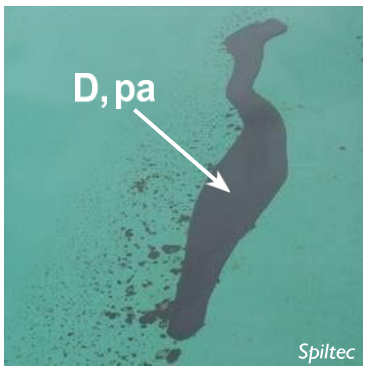
Multiple bands or streaks of oil (sheens, dark, or mousse) that line up nearly parallel with the wind. Such streaks (typically including seaweed, foam, and other organic material) are caused by a series of counter rotating vortices in the surface layers that produce alternating convergent and divergent zones. Sometimes referred to as Langmuir vortices (named after a researcher in 1938), the resulting “windrows” begin to form with wind speeds of approximately 6 knots or more. Bands are usually spaced a few meters to tens of meters apart; however, windrows have been observed with spacings of 100 meters or more.



PATCHES (pa)

An oil configuration or structure that reflects a broad range of shapes and dimensions. Numerous tarballs could combine to form a patch; oil of various colors and consistency could form a patch or single layer tens of centimeters to tens (or even hundreds) of meters in diameter; and a large patch of dark or rainbow oil could have patches of emulsion within it. Patches of oily debris, barely able to float with sediment/plants in them, are called “tarmats”; circular patches at sea are called “pancakes”; and REALLY BIG patches can simply be called “continuous” slicks. But, they are all patches.

1 meter (crude oil)



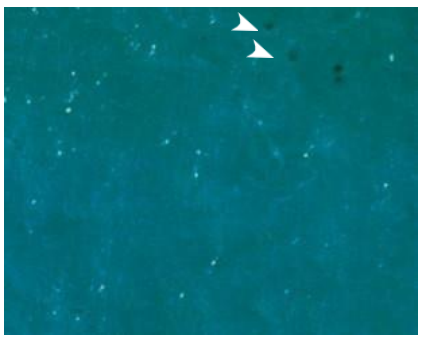
50 meters (diesel)

200 meters (crude oil)

TARBALLS (tb)

Discrete, and usually pliable, globules of weathered oil, ranging from mostly oil to highly emulsified with varying amount of debris and/or sediment. **Tarballs (tb)** may vary in size from millimeters to 20–30 centimeters across. Depending on exactly how "weathered," or hardened, the outer layer of the **tarballs (tb)** is, sheen may or may not be present.

Fist-sized tarballs



From helicopter (25–50 ft altitude)

Tarballs 1–5 cm

From boat

Tarballs 5 mm – 5 cm

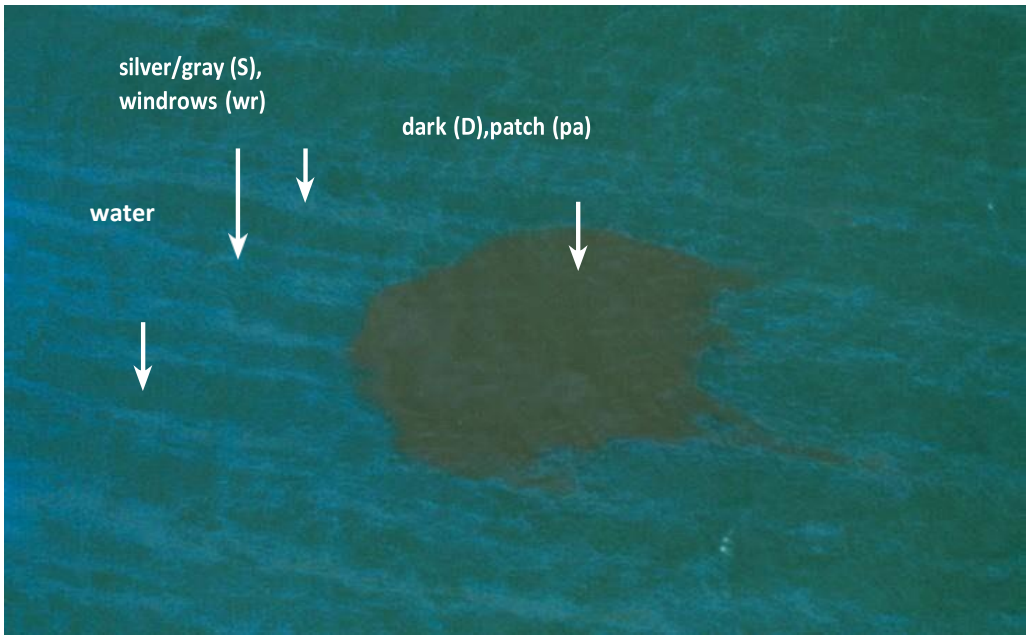
From ground level on beach

NO STRUCTURE (ns)

Random eddies or swirls of oil at any one or more thicknesses. This distribution of oil is normally the result of little to no winds and/or currents.

PATCH (pa) OF DARK (D) OIL

Isolated patch (pa) or pancake of dark (D) oil surrounded by Windrows (wr) of Silver/gray (S) sheen. Pancake 65 ft.in diameter.

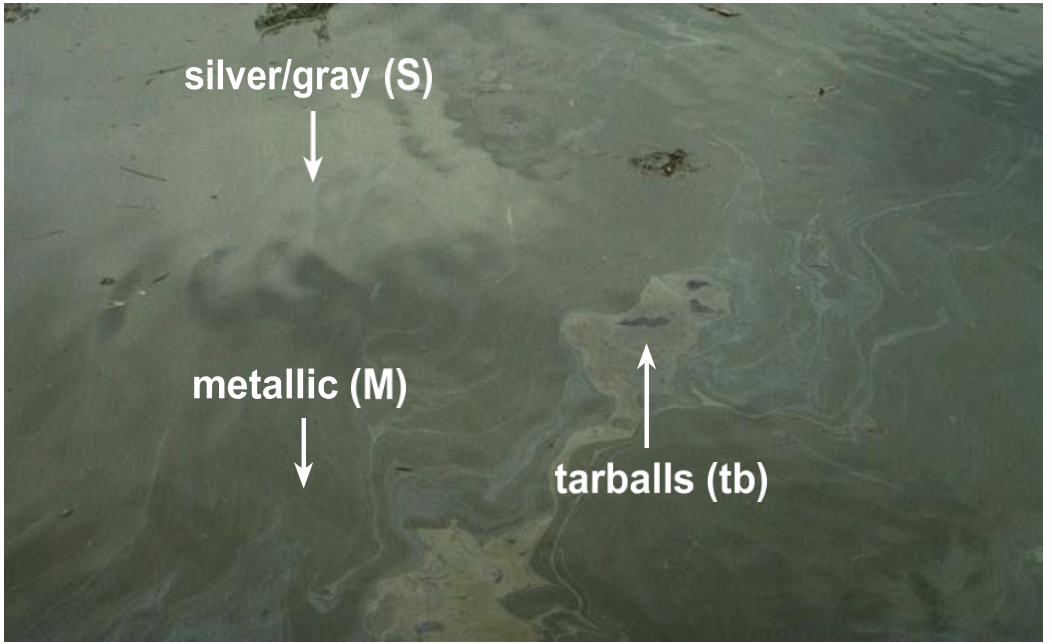


Observation altitude:
300 ft.

Platform:
Helicopter

TARBALLS (tb) VIEWED FROM BOAT

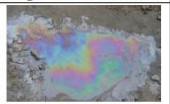
Dime to silver dollar-sized tarballs (tb) surrounded by dull-brown or metallic (M) and Silver/gray (S) sheen.



Observation altitude:
Surface

Platform:
Boat

Oil Volume Calculation Table

Visual Colour (See Reverse for larger Images)						
	Barely discernable	Silvery Sheen	Faint Colours	Bright Bands of Colour	Dull Colours	Light Brown
						
Approximate thickness (mm)	4×10^{-5}	10^{-4}	1.5×10^{-4}	3×10^{-4}	10^{-3}	2×10^{-3}
Area (m^2)	Volume (litres)					
100	0.004	0.01	0.015	0.03	0.1	0.2
500	0.02	0.05	0.075	0.15	0.5	1.0
1 000	0.04	0.1	0.15	0.3	1.0	2.0
1 500	0.06	0.15	0.225	0.45	1.5	3.0
2 000	0.08	0.02	0.3	0.6	2	4
3 000	0.12	0.3	0.45	0.9	3.0	6.0
5 000	0.2	0.5	0.75	1.5	5.0	10.0
10 000	0.4	1.0	1.5	3.0	10.0	20.0
30 000	1.2	3.0	4.5	9.0	30.0	60.0
60 000	2.4	6.0	9.0	18.0	60.0	120.0
90 000	3.0	9.0	13.5	27.0	90.0	180.0
100 000	4.0	10.0	15.0	30.0	100.0	200.0
125 000	5.0	12.5	18.75	37.5	125.0	250.0
150 000	6.0	15.0	22.5	45.0	150.0	300.0
175 000	7.0	17.5	26.25	52.5	175.0	350
200 000	8.0	20.0	30.0	60.0	200.0	400.0
400 000	16.0	40.0	60.0	120.0	400.0	800.0
600 000	24.0	60.0	90.0	180.0	600.0	1 200.0
800 000	32.0	80.0	120.0	240.0	800.0	1 600.0
1 000 000	40.0	100.0	150.0	300.0	1 000.0	2 000.0

Assumption: oil is of same thickness throughout area

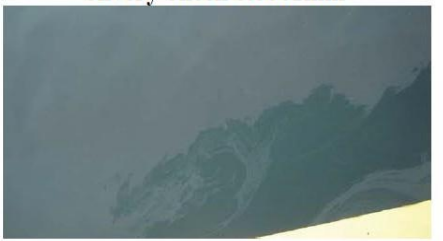
To estimate the volume of product spilled, first estimate the size of the sheen/slick in meters squared (length x width). Find this on the left side of the table. Then, assess the colour of the sheen/slick, corresponding to the colours across the top of the table. Find where the colour and area meet on the chart, and that will give an **ESTIMATE** of the volume of the spill, in litres.

APPEARANCE AND THICKNESS OF OIL ON WATER

Being able to identify a spill ensures an appropriate response

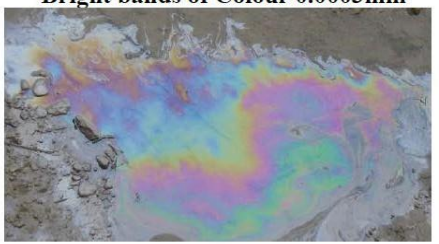
Barely Discernable 0.00004mm

Silvery Sheen 0.0001mm



Faint Colours 0.00015mm

Bright bands of Colour 0.0003mm



Dull colours 0.001mm

Light Brown 0.002mm

To report a spill please call 1-800-889-8852

Canada

OIL SPILL OBSERVATION CHECKLIST:
(OBSERVE, RECORD, REPORT)

Remember the 5 priorities for CCG:

1. Safety of personnel and public;
2. Incident Stabilization;
3. Protection of Environment, property or infrastructure;
4. Monitoring of a response and its effectiveness; and
5. Community engagement.

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes – insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional (T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E): ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes – insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER.

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional (T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E): ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes – insurance company info

Owners Actions (what are they doing on scene when you arrived):

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional (T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E): ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional (T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ER may take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts:

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts:

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**

OIL SPILL OBSERVATION CHECKLIST: (OBSERVE, RECORD, REPORT)

AFTER COMPLETION OF THE CHECKLIST PLEASE SEND THE COMPLETED COPY TO THE REGIONAL OPERATIONS CENTER

ROC1COR1@dfo-mpo.gc.ca

IF YOU HAVE QUESTIONS YOU CAN CONTACT THE ROC AND ASK TO SPEAK TO THE DUTY OFFICER (DO)

Weather:

Stage of tide (flood, ebb, slack): Flooding ◯ Ebbing ◯ Slack ◯

On-scene weather (wind, sea state, visibility):

Location/ potential source/ Oil appearance:

Signs of Pollution, where is it potentially coming from, possible source if one has not been identified:

Pollution Location and potential size (potential amount on board or amount on water- reference oil on water volumes chart):

Color- tick which box(s) apply:

Silver/gray (S) ◯ Metallic (M) ◯ Transitional(T) ◯

Rainbow (R) ◯ Dark (D) ◯ Mousse (E) ◯

Distribution of oil- tick which box(s) apply:

Streamers (st) ◯ Convergence Zone (co) ◯ Windrows (wr) ◯

Patches (pa) ◯ Tarballs (tb) ◯ No Structure (ns) ◯

Is oil recoverable? (if you put an adsorbent pad in it, does it recover product?):

YES ◯ NO ◯ UNSURE ◯

Smell? (Is there a smell coming off the pollution in the water in the air)

Gasoline ◯ Diesel ◯ Oil ◯ Unknown ◯

Source: (Owners name, contact information; vessel name, description and reg number; is the vessel or OHF actively discharging?):

Owners Name / Contact Information

Vessel Name / Registration Number

Vessel Size and Description

Is the source actively discharging? No ◯ Yes ◯

If yes contact the ROC 1-800-889-8852

Owner/ Source Questions to ask:

Amount of fuel, chemicals, and oil on board

Pollutant type and amounts:

Gasoline		Hydraulic Oil	
Diesel		Engine Oil	

Chemicals types and amounts

Other pollutants types and amounts:

Does the owner have insurance: No ◯ Yes ◯

If yes - insurance company info

Owners Actions (what are they doing on scene when you arrived)

Owners Intentions (is there a salvage or recovery plan? Do they have pollution mitigation equipment or plan?):

Photos and Pictures:

Photos help with assessments and decision on actions that CCG-ERmay take. We are looking for photos to so the threat to pollute, vessel identification, colour of pollutant on water, animals in the area, and overall scene.

Additional comments or noted information:

Contact information for person assessing:

Date: **Time:**

Name:

Phone: **Email:**