Guidelines for Collecting Ephemeral Data in the Arctic: WATER

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Note: These guidelines are limited data collection aides that do not necessarily consider all possible scenarios under which samples may be collected. Use best professional judgment to modify these guidelines according to area-specific field conditions.

Guideline Objectives

The primary objective of this document is to provide guidelines on the collection of water samples for chemical analysis during the early stages of an oil spill in the Arctic to support Natural Resource Damage Assessment (NRDA) exposure and injury evaluations. Water samples are generally collected very early in a spill and would rely on vessels of opportunity and emergency go-kits for water sampling offshore. Thus, most sampling to support NRDA will likely be conducted in coastal waters, in conjunction with shore-based assessments, which is what this guideline is focused on.

Sampling Objectives

Characterize oil

- Determine the concentration and composition of oil compounds in the water column
- Determine the source of contamination via chemical fingerprinting analysis and characterize oil weathering and fate
- Characterize other sources of oil or hydrocarbons in the environment

Study exposure

- Document exposure of water-column organisms to oil compounds
- Support exposure modeling
- Support environmental transport modeling

Quality assurance/quality control

- Ensure the integrity of the sample(s) throughout sampling, transport, and storage
- Ensure the reliability of chemical characterizations

Collaboration

- Support other ongoing efforts including, but not limited to, validation of remote sensing activities, modeling of exposure and injuries to water-column resources, collection of fluorometry data, and analysis of dissolved vs. particulate oil phases
- Support other assessment efforts (see Intertidal Sediment, Stranded Oil, Ice guidelines)

Before Field Sampling

- Assure that all personnel have required safety training and protective equipment for Arctic field work (not described in this guideline).
- Arctic weather conditions (e.g., wind direction and speed) are variable within a short timeframe. Be prepared for changing weather conditions, be aware of your surroundings and take precautions to ensure the safety of the sampling team.

Study design

- It is important to have a defined sampling strategy prior to conducting fieldwork.
- The following terminology is used to define general to specific sampling geographies
  - Area = general area of uniform characteristics, such as degree of oil exposure, physical setting, habitat types present, etc.
  - Location = a specific location that is representative of the area and contains the type of habitat to be sampled, such as an eelgrass bed or lagoon
  - Site = a specific point at which samples are collected or observations are made
- Plan ahead the number of areas and samples to be collected at each area, taking into account level of effort, potential logistical limitations, weather conditions, and other issues that may compromise sample integrity.
- Review the guideline and resolve any area-specific issues. Area-specific modification of the guideline may be needed based on environmental conditions, geography, access to remote areas, and shipping capabilities.
- Use a computer or conceptual model of the extent of water contamination or an appropriate power analysis to estimate the number of sampling locations and number of sites per location needed to respond to the sampling objectives.
- For water samples, sampling "areas" can be defined as: 1) waterbodies with defined boundaries (such as lagoons, bays, or river mouths); 2) distances down current from the release site (such as 0-5 km, 5-10 km); and 3) waterbodies that are expected to have similar oil exposure based on observations or models (particularly plume models).
- Depending on the water depth, water samples can be collected at three depths: near surface (0-1 m), mid-depth, and 1 m above the bottom. Generally, near surface samples should be prioritized if the sampling effort is limited by logistics or other factors. In shallower water, samples should be collected at just one near surface depth.
- Contact the laboratories that will be receiving field samples for analysis and assure that they have the capacity to receive and analyze samples from the study. Follow relevant guidelines from the laboratory and consult with them about necessary modifications.
- Shoreline visualization tools (e.g., ESI maps, satellite images, ShoreZone) should be used to develop a sampling strategy and estimate distances, number of sampling sites, intertidal zone width, etc. before going into the field. The sampling strategy should have flexibility to be adjusted based on conditions in the field.
- Consult appropriate guidelines for the collection of other environmental media and biota concurrent with water sampling. If observed during water sampling, tarballs, sheens or other oil residues can be collected opportunistically for chemical analysis and fingerprinting.

Equipment

- Review the list of sampling equipment/containers, make adjustments as needed, and assure that all essential field materials are ready to be taken to the field.
- If not all sampling equipment is available, consult the alternative equipment guidelines or determine if other appropriate options are available.
- Consider area-specific conditions for remote Arctic regions and make adjustments in methodology and equipment as necessary.
- It may be necessary to coordinate with the laboratory that will receive the samples to assure that acceptable materials and conditions are used for sampling and sample storage and shipping.
- Do as much material preparation prior to field deployment, including: labeling sample jars using permanent markers or laboratory labels (e.g., peel and stick waterproof labels); solvent rinsing of jars for total hydrocarbons (THC) and polycyclic aromatic hydrocarbons (PAH) analyses, etc.
- Make sure that all essential equipment is in working order and operational under Arctic field conditions, and that spare equipment and/materials are available.

- Store solvents carefully to prevent spillage. Follow regulations regarding the shipment and storage of chemicals.

Sampling Areas and Timing

- Follow a sampling plan/work plan if one is available.
- If a sampling plan is not available for ephemeral data collection immediately after a spill, data collection should focus on collecting samples from a range of unoiled, likely to be oiled and already oiled areas.
- It is important to obtain reliable information and analytical chemistry data that account for spatial and temporal variations of oil impacts.
- When sampling in remote areas with limited shipping capabilities, plan ahead to make sure that the integrity of samples is not compromised by ensuring that the processing laboratory receives the samples within their recommended holding time. Remember that it may take multiple days for shipments from remote areas to reach a laboratory facility. This last stage is the most important and requires due diligence until the samples are safely delivered.
- The number of locations and number of sites per location need to be considered accordingly, making sure that there is enough space in the coolers to accommodate all samples without sacrificing their integrity.
- Plan all sampling strategies within daylight hours, if possible. However, working from a vessel with deck lights that allow safe operations would permit nighttime sampling. This guideline may not apply during winter or much of the fall.
- The challenges of collecting samples in remote areas, particularly during winter, are great and require adequate planning and careful field implementation to attain the data quality required to meet the objectives of the sampling plan.
- Water samples can be collected from boats or by wading in shallow water.

Area selection

- Sampling locations should be representative of areas that have been or may be oiled by the spill and unoiled reference locations.
- Use trajectory models, conceptual models, overflight information, SCAT data or other tools to determine what areas have been oiled and which ones are likely to be oiled.
- Samples should also be collected from locations known or suspected to be affected by other natural or anthropogenic sources of contamination (e.g., oil seeps, coal, peat, mining, combustion engines), as these will be important to differentiate background sources and levels of contamination.
- Water samples can be collected from marine, estuarine and fresh water habitats. When present, nearshore lagoons with connectivity or potential connectivity to the marine environment should be sampled.
- It may be necessary to prioritize sampling locations. In this case, highest priority samples are to be collected from nearshore water adjacent to locations that are sensitive habitats, biologically productive, or highly relevant for human use. Collecting pre-oiling water samples from sensitive/productive locations that are likely to be oiled by the spill in the near future is also a priority. Sampling at unoiled “control” areas and sampling other sources of contamination should be prioritized based on the ephemerality of the data and relative importance to developing a NRDA case.
- Water samples should be collected pre-oiling, if possible, as soon as practical after oiling, and periodically thereafter. Sampling frequency should be defined in the study design.
- The number of locations and number of sites per location should be defined in the study design. A minimum guideline for collecting water samples is at least three samples per waterbody location. If logistical limitations are a concern, prioritize sample collection by selecting a minimum of one reference/pre-oiling location and two heavily oiled locations.

- Sample along exposure gradients, starting in the cleanest zone, at regular intervals proportional to the exposure area.

Collaboration
- Water samples from nearshore areas can be collected in conjunction with sediment, oil sheen and stranded oil sampling.
- Close collaboration and coordination with other ongoing ephemeral sampling efforts is important.

Field Sampling Methods

Sampling Equipment/Containers
Note: The amount of equipment required depends on the sampling plan, desired sample volumes, and logistics. Analytical laboratories may provide required sampling and sample storage and transport materials – contact the receiving lab before preparing to collect samples in the field. See Alternative equipment/methods guideline for options if preferred equipment is not available.
- Coolers – for sample storage and transport
- Ice packs/Collapsible jugs− for storage temperature regulation (if ambient temperature exceeds 4°C)
- Thermometer or temperature logger (1 per cooler)
- Disposable nitrile gloves (preferred), insulated nitrile-coated gloves (less ideal)
- Insulated shoulder-length rubberized gloves preferred for water sampling under extreme cold conditions
- Sampling jars – certified organic-clean glass jars (solvent rinsed) with Teflon-lined lids and labels:
  - 1 L glass jars, amber glass preferred
  - 40 mL septum-capped vials, HCl-preserved preferred, amber glass preferred
- Trip and field blanks – 1 L and 40 mL sampling jars filled with distilled water
- Sorbent pads (for water samples when sheens are present; see Sheen guideline)
- Field Sample Forms (template in Appendix A)
- Chain of Custody forms (see Chain of Custody guideline)
- Field notebook, evidence tape (see Chain of Custody guidelines)
- GPS, camera (with spare batteries), and photo scales
- Packaging materials (bubble wrap and sorbent pads, tape) for glass jars (may be provided by the analytic laboratory)
- Suitable disposal bags for oiled PPE and disposable sampling materials
- Subsurface water sampler (e.g., Niskin bottle or other) – if needed

Optional (if single-use sampling equipment are not available):
- Sufficient quantities of pre-cleaned or disposable equipment, single-use equipment are preferable. If equipment will be reused in the field, decontamination is necessary and will require the following materials:
  - Reusable sampling equipment
  - Laboratory-grade detergent (Liquinox or similar)
  - Solvents for cleaning sampling equipment – acetone, methanol, or hexane (Capillary GC Pesticide Residue Grade or equivalent) – consider shipping/airline regulations for solvents
  - Teflon solvent squirt bottles
  - Laboratory-grade, certified-clean distilled water (preferred), store-bought distilled water (less ideal); laboratory-grade detergent
  - Approved, sealed container for collecting solvent rinsate for disposal

Quality Assurance/Control

- Obtaining an adequate number of quality control samples is essential. At a minimum, a trip blank (accounts for contamination introduced during shipping and handling) and field blank (accounts for contamination introduced during sampling) should be maintained for each sampling effort and generally be collected at a rate of 5% and 10%, respectively, of all samples.
- Ideally, trip and field blanks are a sampling jar containing ultra-pure or distilled water. Blanks may be provided by the receiving laboratory.
- A trip blank is an unopened sampling jar and should be transported with the samples and remain sealed in the cooler during sampling activities.
- A field blank should be collected at approximately every third sampling site, or at least at an "un-oiled" and "oiled" site, by leaving the field blank sample jar open for the duration of the sampling period at that site. Record the site where field blanks were taken on the field sample form.
- Duplicate samples should be collected at every third sampling site or following the specifications of the work plan. A duplicate sample is collected from the same location and following the same steps as the preceding sample. This is not the same as collecting replicates from each site/depth. Duplicates should account for 10% of all samples, but consideration should be given to sample storage capacity. Do not split samples unless specified in the work plan.
- Rinsate blanks should be collected if there is a risk of cross contamination from reuse of sampling equipment. After cleaning the equipment in accordance with the procedures described in this method, rinse the clean equipment with solvent or cleaning solution and collect the rinsate in a sample jar. Note on the field sample form where and how rinsate blanks were collected.

Good Sampling Practices and Decontamination

- Good field practices and the development of a consistent sampling routine will help provide for the integrity of the samples and their validity in environmental assessments.
- Disposable nitrile gloves should be worn when sampling and changed between each sample collected or as necessary to prevent cross contamination.
- Disposable nitrile gloves can be worn over low-profile insulated gloves (e.g., neoprene gloves) in cold conditions and should be changed between samples to prevent cross contamination if they become contaminated or damaged. If nitrile gloves are not available or will not fit over insulated gloves in cold conditions, insulated nitrile-coated gloves may be an alternative, but extra precautions will have to be taken to prevent sample contamination; gloves will need to be cleaned with soap and clean water between samples and should not come in contact with the sample or with the surfaces of glassware or tools that will be in direct contact with the sample. Similar precautions should be taken when using insulated shoulder-length rubberized gloves.
- To reduce the need for field decontamination, use pre-cleaned and/or disposable equipment and tools (e.g., pre-cleaned stainless steel spoons).
- Water samples for THC and PAH analysis should be placed in certified organic-clean (solvent rinsed) glass containers with Teflon- or aluminum foil-lined lids.
- If disposable sampling equipment are not available, reusable sampling equipment MUST be decontaminated between samples:
  - To decontaminate the sampler prior to each use, wash sampling utensil with laboratory-grade detergent and clean with a triple clean-water rinse. Cleaning with laboratory-grade water is preferred, though store-bought distilled water is a less ideal alternative and, as a last resort, "background" water from an up-current clean area can be used
  - Rinse with methanol or acetone, followed by hexane (Capillary GC Pesticide Residue Grade or equivalent). Allow solvents to evaporate from equipment before use. Do not work with solvents downwind of exhaust or other airborne hydrocarbon source. Collect solvent rinsate for proper disposal or shipment to the lab as a rinsate blank. If solvents are not available, use a diluted

detergent solution and fresh water, followed by a distilled water rinse. If transporting solvents is not feasible, use single-use sampling materials

- Potential sources of contamination while sampling from vessels (exhaust fumes, oily surfaces) are a concern. Work upwind of any exhausts, consider sampling from non-motorized craft that is paddled upwind/current from the motorboat, and designate clean areas for sampling. Sampling on the windward side of the vessel is preferred.
- Take precautions to avoid cross-contamination of the site from oil on personal equipment. Sampling unoiled areas first, then lightly oiled areas and finally heavily oiled areas can minimize cross-contamination. Personal equipment should be exchanged or cleaned between sites if it becomes contaminated.

Sample Collection Methods

- Use field data forms included in the work plan, if one is available. Otherwise, use forms in Appendix A. Coordinate data form development/modification with the data management group.
- Because GPS units will be used to record locations and times, make sure that all units are using the same coordinate system, datum, reporting units, and correct time. Follow the recommended GPS datum of the study plan, if one is available. Alternatively, set the default to WGS84.
- Record the sampling site location using a GPS.
- For each sampling site, record:
  - Date, time, weather conditions (e.g., wind direction and speed), and tide level
  - Water depth (in meters) for water samples
  - Presence of biological resources or other relevant information
- Photograph the sampling site prior to sample collection to document the site conditions, as well as the sample collected. Make sure each photograph or series can be later associated with the corresponding sampling locations (e.g., through use of GPS Photo link software or by keeping a detailed photo log with waypoints and/or lat/long). Do not delete or alter any photographs. The numbering sequence of photographs uploaded from your camera must not have any gaps (see Field Photography guideline).
- To minimize risks of cross-contamination, collect water samples directly into the sample container by hand (wearing clean disposable Nitrile gloves); a less ideal alternative is to use samplers that can hold 1 L glass bottles. This may be necessary for the collection of subsurface water samples where sampling bottles need to be opened/closed at the targeted water depth.
  - If water samplers (e.g., Niskin bottles) are used these need to be thoroughly decontaminated prior to each use
- Clear surface slicks and sheens prior to deploying the equipment by sweeping the area with a sorbent pad or placing a barrier up-current to divert surface oil around the sampling area, avoiding physical dispersion of the oil into the water column.
- Collect BTEX samples in HCl-preserved 40 mL septum-capped vials. Fill vials completely and cap at the sampling depth or, if using a water sampler, fill the vials to overflow and cap immediately. Vials should not have headspace or air bubbles. If BTEX sampling vials are not available, water samples for THC and PAH should still be collected.
- Collect water samples for THC and PAH in glass containers (organic clean). Leave headspace of about 2 cm for 1 L jars. If sampling directly into jars, fill completely and cap at the sampling depth. Remove the cap only once the sampling jar is no longer in contact with the water and pour out the necessary volume to create headspace before recapping.
- Collect “near surface” water samples at a uniform depth (e.g., 30 cm, which would be up to your elbow if using your hands) below the water surface taking care to avoid any surface slicks or sheens.
- If collecting samples by wading in shallow water, collect samples in waters that are at least 60 cm deep. Collect samples at a uniform depth (e.g., 30 cm, which would be up to your elbow if using your hands) below the surface. Avoid disturbing or suspending bottom material. Stand down current and

wait until any suspended sediment is flushed away before submerging and opening the jar in front of you.

- When sampling by hand:
  - Stand facing the current, if any, and wait until any suspended material is flushed away by the currents
  - Plunge the bottle with the cap on, neck downward, under the water surface in front of you
  - Turn the bottle until the neck points slightly upwards with the mouth directed into the current
  - Uncap the sampling bottle and fill it. Do not touch the cap liner or the inside of the bottle
  - Cap the bottle under water immediately after filling
- When using a sampler:
  - Sampling equipment MUST be deployed and retrieved in the closed position, opening the sampler at the sampling depth
  - All field equipment that comes in contact with the sampling media MUST be thoroughly decontaminated after each sampling event to prevent inadvertent sample contamination
  - If possible, dedicate one set of sampling equipment per degree of oiling to minimize potential cross-contamination
- When sampling through ice:
  - Clear loose ice and snow away from the sampling site and drill through the ice
  - Clean the drill hole area from potential sources of contamination and allow several minutes (~10 min) for the water to flow freely under the ice before taking a sample. If water in the hole freezes over, use clean tools to break through the thin layer of ice and proceed with sample collection (see Ice guideline for additional details)

Sample Labeling and Record Keeping

- Verify that all samples are properly labeled and that field sample forms are properly filled out.
- Follow chain of custody procedures for securing samples and complete chain of custody forms (See Chain of Custody guidelines).
- Complete the Chain of Custody form, noting where each water sample was collected, sampling equipment used, time/date of collection, size and container type, and sampler name.
- Make special notation on the Chain of Custody form about any problems or observations during sampling.
- Maintain strict chain of custody during sample storage and transportation.
- Record the sample number on both the sample jar label and lid. Record the following on the field sample form:
  - Sample collection site (NRDA sample grid ID and GPS coordinates)
  - Sample matrix (water)
  - Sample #, date/time
  - Sampling method (directly into jar, sampler)
  - Sample collection depth
  - Note if sample is for QA/QC (field blank, trip blank, rinsate blank)
  - Describe the oiling conditions (using standard shoreline assessment terminology), characteristics of suspended material in the water sample (texture, color, turbidity, biota, vegetation, debris, odor, etc.), distance from shoreline, weather conditions (e.g., wind direction and speed), odors and other relevant information on the field data sheet
- All sample numbers must be unique. Use the sample number convention provided by data management if one is available. Otherwise, the sample number should consist of a sample team ID and sequential numbers. For example AKA-0001, AKA-0002, etc.
- Documenting oil distribution on the water surface is best accomplished with photography, video, and good field notes. Samples may be needed for fingerprinting or monitoring weathering, to correlate a

degree of oiling term with oil loading, to confirm the presence of oil, or for bioassay purposes (see relevant guidelines for details about sampling oil).

- Document presence of slicks, weather, wave conditions, etc. which might suggest mixing of surface oil during sampling.
- Keep a detailed photo log so that each photograph can be labeled.
- Note any deviations from the recommended guidelines in the field book.

Sample Preservation, Recommended Holding Times and Shipping

- Follow chain of custody procedures for sample storage and shipping.
- Immediately place all water samples in a cooler and keep at approximately 4°C. Use frozen gel packs to maintain the temperature if ambient temperatures are above freezing. In below freezing temperatures, collapsible water jugs filled with warm water can be used to maintain the temperature if heated storage space is not available. A programmable temperature logger or thermometer should be placed in each cooler to maintain a record of storage temperatures.
- Protect the samples from direct sun exposure (e.g., UV radiation).
- Tape lids on sample bottles so that they do not accidentally come off.
- If possible, store samples from unoiled areas in one set of coolers, with oiled samples in a separate set of coolers.
- TPH and PAH: can add 1 mL of 6 N HCl/liter of sample within 2 hours of sampling to inhibit microbiological activity. Not required by EPA.
- Use packing material, such as bubble wrap or sorbent pads, around glass jars to prevent breakage during transport and shipping. The receiving laboratory may provide packaging materials and shipping containers.
- Water samples can be held at 4°C in the dark for up to 7 days (includes recommended holding time in the field and receiving laboratory) without loss of sample integrity. Samples should not be frozen.
- Ship samples directly to the laboratory as soon as practical with complete chain of custody forms. If necessary, samples can be stored under specified conditions and with complete chain of custody until they can be shipped. Assure that samples are packaged to protect them from breakage, shipping containers are sealed and use ice packs or dry ice to maintain storage temperatures during shipment to the lab.
- Ship highly oil-contaminated samples separate from non-contaminated or low-contaminated samples to reduce risk of cross contamination.
- NEVER discard any samples even if these have exceeded their recommended holding times or storage temperatures.

Sample Volume and Requirements

Analytical Method	Sample Volume	Minimum Detection Levels [a]	Recommended Holding Time [b]	Minimum No. of Samples per Location
BTEX [c] (full scan mode)	40 mL	10 µg/L	7 days; 14 days with preservatives	1 per depth
BTEX (SIM)	1 liter [d]	0.1-1 µg/L	7 days	1 per depth
Total Hydrocarbons (THC) by GC/FID		15 µg/L		
PAH (including alkylated PAHs) by GC/MS-SIM		0.001-0.01 µg/L		
Chemical biomarkers (fingerprinting)		0.001-0.01 µg/L		

[a] µg/L= ppb; [b] Store at 4°C in the dark; [c] Sometimes referred to as Volatile Aromatic Hydrocarbons (VAH) or Volatile Organic Compounds (VOC); BTEX are a subset of VAHs/VOCs; [d] Several analyses can be made from a single sample.

Analytical Methods

- **Polynuclear aromatic hydrocarbons** (PAH). Because most of the toxicity in oil is due to PAHs, it is the preferred analysis. It is important that the analytes include the alkyl-substituted PAH homologs, in addition to the standard 16 PAH "priority pollutants." This method is referred to as Modified EPA Method 8270, because the list of PAHs is expanded to include the alkylated, using GC/MS in the selected ion monitoring (SIM) mode. Detection levels should be at least 0.1 ppb for individual PAHs to support injury assessment using toxicity thresholds. The lab should analyze a sample of the source oil as well.
- **Chemical biomarkers**. These chemicals are the most important hydrocarbon groups used for chemical fingerprinting allowing a quantitative identification of the source oil. Because biomarkers are more resistant to weathering and biodegradation than other hydrocarbons, these can also be used to quantify the degree of oil weathering. Chemical biomarkers are typically analyzed by GC-FID (e.g., EPA Method 8015 Modified). These chemicals are typically analyzed concurrently with THCs.
- **Volatile organic hydrocarbons** (benzene, toluene, ethylbenzene, and xylene, or BTEX). For oil spill applications, the standard EPA Method 8240/8260 (purge & trap) should be modified by running the GC/MS in selected ion monitoring or full scan mode to include the higher alkylated (C3 and C4) benzenes. Detection limits should be 1 ppb for individual analytes; 0.1 ppb is easily achievable in SIM mode.
- **Total hydrocarbons** (THC). Often referred to as total petroleum hydrocarbons (TPH), but most methods do not differentiate among petroleum, petrogenic, and biogenic hydrocarbons. THC by GC-FID (total area of FID gas chromatogram of combined f_1 and f_2 fractions after column chromatography; e.g., EPA Method 8015 Modified) is often the preferred method because of the low detection limit (compared to other THC methods) and the direct measurement of hydrocarbons. This method does not detect low boiling point compounds (below n-C_8). THC analyses generally will not provide the data needed to support calculation of toxic effects from PAH exposure, and will have to be corrected to equivalent PAHs. The THC results, however, can be used to document changes in oil weathering and map extent of exposure of water column resources, if meaningful detection limits are used (15 µg/L). THC results can be used as a screening tool to estimate the presence and amount of hydrocarbons and provide an indication of which samples should receive highest priority for more extensive analyses.

Key References

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Appendix A
Supporting Documentation- Field Data Forms

Unique field data forms may be included in the work plan if one has been developed, otherwise, use the attached form:

- Print the form on weather-resistant paper (if available). Make more than enough copies of the form before going into the field.
- Fill out forms with waterproof pen or permanent marker. Do not use pencil or biro (erasable) ink.
- Make any additional notes that do not fit on the form in a field notebook and indicate the presence of associated additional notes on the field data form.
- Fill in blanks with "N/A" if data are not applicable or not available. Avoid leaving blank values on data forms.
- Do not erase or black out erroneous entries on the field data forms. Errors should be corrected by crossing out the entry with a single line and signing and dating the strike-through.
- Electronic versions of field data forms are available. Coordinate data entry with NRDA data management personnel.

Attached form:
- Oil/Tarball/Water/Snow/Ice/Sheen Sample Collection Form

Sample Collection Form - OIL/TARBALL/WATER/SNOW/ICE/SHEEN										
Lead Sampler's Name/Phone								**Sampler Team Code**		
Lead Sampler's Affiliation								**Resource Group**		
NRDA Contact/Phone								**Resource Group Leader**		
Incident Name								**Habitat (e.g., sand beach)**		
General Location Description								**Sample date (mm/dd/yyyy)**		
Location Code	**Matrix**	**Sample Number (two digits)**	**Sample Time**	**Sampling Method**	**Sample Position/ Depth**	**Sample Size and Units**	**Sample QA/QC Type**	**Latitude**	**Longitude**	**Sample Notes**
NRDA Sample Grid ID	*(O)il, Tarball (B), (W)ater or (SN)ow, (I)ce, (SH)een*	*Sample # and A, B, or C for portion of composite*	*(24-hr clock, local time)*	*Method of sampling (i.e., sampler or other)*	*Collection depth of water sample. Use 0 for surface samples*	*Volume of sample with units*	*Normal sample or Field QA/QC type*	*Latitude in DD XX.XXXXXX*	*Longitude in DD -YYY.YYYYYY*	*Description of sample, equipment used, photo numbers, etc.*
Survey Notes - (weather, wildlife, field team composition, sampling design changes, photos, etc.)										

Samples relinquished by:				**Received by:**			
Date	**Time**	**Signature - Field Sampler**	**Print Name- Field Sampler**	**Date**	**Time**	**Signature - Sample Runner/ Command Post**	**Print Name - Sample Runner/ Command Post**

Matrix	Sample methods and descriptions		Sample Area Sketch
Sediment or Soil	**Sampling Method**	**Depth units**	
(S)ediment Soil (L) Blan(K) Water	(GR)ab (CO)re	(c)m (m) (i)nches (f)eet	
Oil, Tarball, Water, Snow, Ice, Sheen	**Sampling Method**	**Sample Position/Depth**	
(O)il Tarball (B) (W)ater Blan(K) Water Other (H) (SN)ow (I)ce (SH)een	(GR)ab (SC)rape (OT)her	(FLOAT)ing (SUB)merged (STRAND)ed (COV)ering 0 - (Surf)ace <depth in meters> m	
Tissue or Wrack	**Tissue Type**	**Tissue Type (Continued)**	
(T)issue Wrack (R) Blan(K) Water	(WH)ole body Whole body w/o shell (WNS) Chorioallantoic Membrane (CAM) Egg (EM)bryo Fillet with skin (FS) Fillet without skin (FWOS) Gall Bladder (GB) Leaves (LEV) Leaves and stems (LVS) (LI)ver	(MU)scle Yolk NA <for Wrack only> **Species** <enter species> NA <for Wrack only>	
Sample Identifier system			
Sample IDs : Team ID-Sequential Numbers (ex. AKA-0001)			
QA/QC types:		Other sample types:	
Field Blank (FB)	Rinsate Blank (RB)	(S)plit	
Trip Blank (TB)	(D)uplicate		