

**Natural Disaster
Oil Spill Assessment
United States Environmental Protection Agency (EPA) Region
6, United States Coast Guard (USCG), Texas General Land
Office (TGLO) & Texas Commission on Environmental
Quality (TCEQ) Disaster Response Procedures**

1.1 Purpose

1.1 Inland/Coastal Oil Spill Group Purpose: To identify and document oil spills discharged during a natural disaster in the coastal and inland zones.

2.0 Objective

2.1 Inland/Coastal Assessment Objective: Systematically and thoroughly survey USGS grid areas impacted from the natural disaster. Identify oil spills in each grid, categorize the spills by Minor, Medium and Major, and document the most effective means for their recovery. Document all spills using the Facility/Spill Assessment Field Data Collection Sheet. In addition, document orphan containers incidentally encountered in accordance with the Health and Safety Plan and Orphan Container Hazard Evaluation Field Data Collection Sheets and pass the information to the Orphan Container Hazard Evaluation Group Supervisor.

Note: Only federal government representatives may supervise federal contractor personnel and only state government representatives may supervise state contractor personnel.

2.2 Determining Oil Spills Caused by Disaster

2.2.1 The following are examples of oil spills caused by a natural disaster and **SHOULD BE** documented, and contained if necessary:

- **Minor Discharge:** Minor discharge means a discharge to the inland waters of less than 1,000 gallons of oil or a discharge to the coastal waters of less than 10,000 gallons of oil. Examples: Above Ground Storage Tanks (AST)s displaced from their original location and containers which appear to have been displaced by the disaster, sunken boat in marina or waterway, overflow of sumps or oil-water separators.
- **Medium or Major Discharge:** Medium discharge means a discharge of 1,000 to 10,000 gallons of oil to the inland waters or a discharge of 10,000 to 100,000 gallons of oil to the coastal waters. Major discharge means a discharge of more than 10,000 gallons of oil to the inland waters or more than 100,000 gallons of oil to the coastal waters. Examples: Medium and Major spills have the greatest potential for significant impact to the environment and disrupt commercial shipping channels. Production or storage facilities have the greatest amount of oil with the potential for discharge and must be assessed as soon as possible. Cargo loss due to tanker grounding, collision or system failure, rupture of a sub sea pipeline, spills due to fire or explosion at a terminal or on a tanker, tank collapse near water

2.2.2 The following are containers which may be encountered are not to be recovered during a disaster response and should not be documented or marked for recovery:

- **Pre-existing Conditions to the Disaster.** Examples: leaking drums staged inside a private commercial lot, dilapidated ASTs inside a compound, materials or ASTs that are associated with a Superfund site.

3.0 Oil Spill Assessment Group Structure

3.1.1 Oil Spill Assessment Group Supervisor

The Oil Spill Assessment Group will work under the Operations Section under the Environmental Assessment and Hazard Evaluation Branch. The Oil Spill Assessment Group may consist of multiple teams and will be directed by a Group Supervisor. The Group Supervisor will be in charge of planning daily operations and will ensure that each Team Leader has the appropriate assignments and maps to complete their objectives. The Group Supervisor will oversee his/her teams and will ensure the documentation of team progress in the field. The Group Supervisor will work and report directly to the Branch Director, Operation Section Chief, or their designee.

3.1.2 Oil Spill Assessment Team Composition

A typical Oil Spill Assessment Team (OSAT) would consist of the following: (1-2) USCG/EPA representative and (1-2) State personnel. The USCG representative should be qualified and familiar with Federal On-Scene Coordinator Representative (FOSCR) requirements who is familiar with the area and is knowledgeable on availability of funding (availability and limitations of FEMA Mission Assignment funding or availability of opening the OSLTF) to hire contractors, if needed, to immediately secure the source and contain oil. The OSAT Leader will request additional support through the Oil Spill Assessment Group Supervisor who will request approval through the Operations Section Chief. OSAT Leader will be responsible for the data collection of the oil spill. The OSAT is strongly encouraged to deploy tactics and resources to the discharge or potential discharge to minimize the impact to the environment. Typical OSAT will consist of a vehicle and proper electronic equipment for navigation/documentation (e.g. reporting forms, Data Collection Sheets, camera, laptop, PDA, etc).

Assessment data collected should also include information necessary for equipment and personnel necessary for recovery of the spill. It may be beneficial for an approved OSRO/BOA/DCO contractor to be present on the assessment to gather this information. For assessments where a known special condition will impact recovery, an OSAT representative should be present. Example include: coastal marsh areas, marinas, oil production facilities.

4.0 Core Resources Required

4.1 Resources for Oil Spill Assessment Activities

4.1.1 Oil Spill Assessment Group Supervisor

The Oil Spill Assessment Group Supervisor is responsible for the oversight of the operations. Group Supervisors are in charge of planning and implementing oil spill assessment operations on a daily basis. Group Supervisor should ensure that their OSATs have appropriate personnel and vehicles for the type of reconnaissance (4WD Trucks, Jon boats, ATVs, air boats, boats, etc)

required. The Group Supervisor should ensure that each OSAT Leader has appropriate assignments and maps for the area of operations. It is critical for the Group Supervisor to work directly with the Team Leaders to maintain situational awareness on daily progress for operational planning purposes. The Group Supervisor is responsible for implementation of the ICS 204 forms so that all group operations are current and consistent with the Incident Objectives.

4.1.2 Oil Spill Assessment Team Leaders

OSAT Leaders are responsible for the oversight of their team's assessment operations. OSAT Leaders are to assist the Group Supervisor in planning out the daily oil spill assessment operations. Team Leaders are to make sure that their team has the appropriate assignments and maps for each daily operation. These assignments and maps can be obtained from the ICS-204 before the daily operations. If additional maps are needed, Team Leaders are to request maps through the Oil Spill Assessment Group Supervisor via a GIS Map Request Form. Team Leaders are responsible for making the determination if an oil spill qualifies as an open or closed item. Only spills that occurred during a natural disaster qualify for reimbursement under ESF-10 of the Stafford Act. Team Leaders are responsible for ensuring that their team's 214B form and all Field Data Collection Sheets or PDAs are turned into the Group Supervisor daily. Team Leaders are to make sure that their team has the following field tools at a minimum: Radios, Cell phones, Logbook, handheld GPS unit, digital camera, supplemental field forms (214B, Data Collection Sheets, etc.), sharpies, paint pen, grease markers, clip board, batteries, gridded large and small scale maps of assigned recon area, tire fix-a-flat, bottled water, and a general first aid kit.

5.0 Oil Spill Assessment Procedures

5.1 Oil Spill Assessment Group Supervisor

The Oil Spill Assessment Group Supervisor reports directly to the Branch Director, Operations Section Chief, or their designee. The Group Supervisor oversees assigned OSATs. The Group Supervisor works directly with the Branch Director, Operation Section Chief or their designee in the daily planning of oil spill assessment operations to ensure that the assessment objectives are being met. When resources are requested to contain an actual or potential discharge, the Group Supervisor should immediately inform the Operations Section Chief of the required resources and plan of action to mitigate the situation. The Group Supervisor plans out the daily operations for his/her teams and delivers team assignments and maps to the Team Leaders on a daily basis. The Group Supervisor works directly with the Team Leaders to ensure that the proper operational planning and assignments are current and realistic for the Assessment Teams. The Group Supervisor ensures that all Assessment Team personnel have proper Oil Spill Assessment Field Data Collection Sheets/PDA documentation training before going into the field. This training should be delivered by the Branch/ICP prior to sending personnel into the field. The Group Supervisor provides ICS 214B forms to the Branch Director/Operations Section Chief and provides Field Data Collection Sheets to the person designated to input data into Response Manager, if applicable, at the end of every operational day for each of his/her Assessment Teams. The ICS 214B Forms are daily summaries for field operations and document the following for operational planning: geographical area each team worked, which grids each team covered and how many potential oil spills were in each grid, an overview of the kinds of oil spills identified, and special requirements for future oil removal.

5.1.1 Daily Task Overview:

- 1) Pick up maps for OSATs from GIS.
- 2) Put together assignment folders (ICS 204 and 214B Forms, Data Collection Sheets, Maps, and other equipment, as necessary) for each OSAT.
- 3) Hold morning Operational/Health & Safety meeting with OSATs.
- 4) Hand out assignment folders to each Team Leader and dispatch teams into the field.
- 5) Plan assessment operations for the following day.
- 6) Determine what personnel and resources will be needed.
- 7) Convey resource needs to the Branch Director/Operations Section Chief.
- 8) Discuss timelines and changing needs and goals with the Branch Director/Operations Section Chief.
- 9) Order maps needed for the following day's assessment activities through GIS using the Map Request Form.
- 10) Debrief your OSAT Leaders as they return from the field and collect the daily ICS 214B form and Facility/Spill/Vessel and Orphan Container Hazard Evaluation Field Data Collection Sheets or PDA for each team.
- 11) Compile all ICS 214B forms for the daily activities and deliver them to the Branch Director/Operations Section Chief.
- 12) Deliver PDAs or Facility/Spill/Vessel and Orphan Container Hazard Evaluation Field Data Collection Sheets to the person designated to input data into Response Manager.
- 13) Utilize the 214B forms to assist in planning for the next operational day so that assignments and 204s will be accurate and current.

5.2 Oil Spill Assessment Team

The OSAT will be in charge of navigation through the geographical area being assessed and in documenting open/closed oil spills. Assessment teams should immediately report back to the Div/Grp/Sup if an on-going discharge or potential discharge is observed and provide a plan of action to contain the spill or potential spill to minimize the impact to the environment.

5.2.1 Daily Task Overview:

- QA/QC - Check master map to ensure that items uploaded previous day were correctly uploaded
- If used, all PDAs for field use have been synched appropriately (Example: 0100 hours, 0600 hours).
- Check field kit and replenish with necessary supplies (See Section 4.1.2 and attachments for supply list).
- Check batteries in GPS unit, camera, and other necessary equipment.
- Attend Oil Spill Assessment Group morning operational / health & safety meeting.
- Obtain grid/area assignments and maps from the Oil Spill Assessment Group Supervisor.
- Mobilize to the field to perform assessment and documentation as specified in Section 5.3 of this SOP. Fill out assessment information in Response Manager via PDA or laptop or complete the Facility/Spill Assessment Field Data Collection Sheets and/or Orphan Container Hazard Evaluation Field Data Collection Sheets.

- At the end of daily operations, write up daily ICS 214B form documenting assessment activities as outlined in Section 5.3.2 of this SOP. Convene with Oil Spill Assessment Group Supervisor for a debrief to discuss areas covered and containers found and obtain plan for following day activities.
- Provide a copy of the electronic 214B to the Oil Spill Assessment Group Supervisor and to the Documentation Unit Leader.
- Turn in photos to the Documentation Group.
- Turn in PDA or Facility/Spill/Vessel and Orphan Container Hazard Evaluation Field Data Collection Sheets to the GIS unit for input to Response Manager.

5.3 Oil Spill Assessment Procedure for Documenting Items: Federal or STATE Representative

5.3.1 Field Documentation and Terminology

Oil spill classification identified during assessment should meet the criteria set forth in Section 2.3 of this SOP.

All oil spill assessment data must be entered in EPA's Response Manager system. If an Agency does not use PDA's or Response Manager then that agency must document the information below on the Field Data Collection Sheets located in the attachments.

Container Location: GPS point indicating an area which contains items requiring recovery.

The OSAT should document its location and condition as follows:

- **Obtain a GPS point on the vessel, oil spill source, or facility spill source.** Make certain that the GPS unit is set to use "WGS84" as the horizontal datum and is set to read coordinates in "decimal degrees." Record GPS position to 5 decimal points. The point should be collected in a logical position where all items to be recovered are in line-of-site.
- **Assign the Facility/Vessel/Oil Spill Incident ID.** Begin to document the potential oil spill in the logbook by assigning it a unique name. The following nomenclature should be used: Combine agency, team group name, team number, ICP or branch identifier, item found date (YYMMDD), and item ID. Example: TGLO's Oil Spill Assessment Team 1 working on August 13, 2010 opens a new spill. The spill should be named: GLO-SA1-A-100813-01.
- **Document facility/vessel/oil spill with photos.** Take photos of the site by utilizing the photo placards as described in the Photo Placard Information Form in the attachments. Update the photo log in the logbook.
- **Enter data into PDA or Field Data Collection Sheets.** If the PDA becomes inoperable or damaged during the field day, the team may continue to document oil spills throughout the day via the Field Data Collection Sheets. The team should obtain a working PDA at the end of the field day and input the new items found into the database or give the Field Data Collection Sheets to the appropriate person to input the data into Response Manager.

5.4.2 214B Documentation

Each OSAT will provide a 214B to the Oil Spill Assessment Group Supervisor. The 214B should include essential information so that the Branch Director/Operations Section Chief can have a daily report on the progress of the OSAT. An example of a properly filled out 214B form is located in the attachments. The 214B should include:

- Team members
- Team needs/excess resources
- Out of the ordinary experiences
- Health and Safety Issues
- Team accomplishments
 - The local geographical name of the area assessed. Examples: East Coastline of the Trinity Bay, 5 miles north of Smith Point or “Western Alligator Bayou.”
 - Each grid number/area fully covered including County/Parish/City information.
 - Items opened/closed in each grid/area, and special requirements for recovering the items.
 - A general overview statement summarizing daily findings and activities to report to the Branch Director/Operation Section Chief.

Summary Example: “Covered six grids (USCG Grid 1-6) in Chambers County north and east of Lake Anahuac. Progress is slow due to dense brush and muddy conditions in the area. Opened 3 new oil spills (GLO-SA1-A-100813-0001, GLO-SA1-A-100813-0002, GLO-SA1-A-100813-0003), including (1) 10,000-gallon AST containing diesel and (2) shrimp vessels that were sheening. The AST is located in a marsh area with limited access and will require special equipment for recovery. OSRO Oil Mop was contracted to contain oil from both shrimp vessels.”

6.0 Aerial Oil Spill Assessment and Procedures

Aerial oil spill assessment requires distinct methodology and special resources. The procedures below must be followed to accurately assess geographical areas and to properly document containers that need to be recovered.

6.1 Role of Branch Director, Operations Section Chief, Air Boss

If aerial assessment operations are needed by the Branches(IMT with Branches) or by individual ICPs, the Branch Director(IMT with Branches) or the Operation Section Chiefs(Multiple ICPs) will submit a completed Air Operations Request Form to the Operation Section Chief(IMT with Branches) or to the Air Operations Branch(Multiple ICPs) 24 hours prior, typically at the end of the operational day, of needed air operations. The Operation Section Chief(IMT with Branches) or Air Operations Branch Director(Multiple ICPs) will approve/disapprove all air operation requests. The approved air operation request will be transferred to the Air Boss and the Air Boss will contact the Branch Director(IMT with Branches) or Operation Section Chiefs(Multiple ICPs) to coordinate pickup location/time/flight plan. See attachments for a blank Air Operations Request Form and an example of completed form.

OSATs should use the NOAA Open Water Oil Identification Job Aid while doing aerial assessments.

6.2 Use of PDA/Computer

- PDAs and computers are essential in this mission for documentation. PDA will be used to document container GPS coordinates and data. Delorme Maps and Microsoft Streets and Trips are also useful for navigation in the air. You can use them with a transmitter connected to your computer to navigate through the grids and the mapping system will record your flight path for documentation purposes. Once on the ground, you can print out your entire flight path for documentation purposes.

6.3 Helicopter Capability and Essential Elements

- The Group Supervisor is responsible for all air assessment operations for their teams. The Group Supervisor will work directly with the Operations Section Chief to determine the appropriate grids to assess. The initial assessment flights will require a minimum of two personnel and as the response develops, operational overflights will be necessary which will include additional personnel. The Group Supervisor will specify if the helicopter will be required to fly over water to ensure an appropriate helicopter is used.
- Maps are critical for this mission. Large overview grid maps are essential for Helicopter assessment flights. Two types of maps are necessary per flight for proper oil spill assessment operations:

-Overview Multi-Grid Navigational Map: This map is a basic USGS Grid Map that is large enough for the EPA/USCG/State Representative to be able to hold the map during flight and assist the pilot in navigating through the grids. The map should include no more than 5 grids across and four grids down. A total of 20 USGS grids is sufficient for basic navigation during flight. See attachments for an example.

-Individual Grid Map: This will be a collection of letter size USGS Grid Maps for the area being flown. If the flight plan is to cover approximately 20 square miles, then the team should have 20 Individual Grid Maps. If items have been previously identified via another agency, these items will be on the individual grid maps and will need to be evaluated during the over flight. The individual grid maps will allow visual assessment and documentation of access points to the container location found. This information is critical for the Orphan Container Recovery Team. When available post-disaster aerial photography should be used. This may allow assessment teams to see the highest concentration of debris and orphan containers. See attachment for an example.

- Grid Over flight: The pilot is responsible for ensuring that the correct grids are flown and that the flight path holds in steady straight lines. Grid/area transects should be close enough to ensure that containers are located.
- GPS Coordinates: Accurate GPS coordinates are critical to allow future assessment teams or recovery teams to locate items efficiently. The pilot should hover properly over each recorded spill so that the contractor can retrieve that appropriate information for the container. If GPS malfunctions, the helicopter's GPS system should record the coordinates for the container.
- Personnel on Board: Helicopter have a weight limit. The more weight that is on a flight the less flight time. Personnel on these teams should be limited as to allow for more flight time.

7.0 Maps

7.1 Requesting Maps:

- The Group Supervisor should order maps by 1900 hours each day in order for the GIS Unit to produce the maps by 0600 hours the following day. This is especially important during large responses with a high demand for maps throughout ICS. The Group Supervisor can delegate this ordering process to the Team Leaders.
- The GIS Unit is capable of customizing maps to meet the needs of various groups. It is important that the individual requesting the maps effectively communicates which “layers” the maps should show in order to be useful. Suggestions on effective layers follow in Section 7.2 of this SOP.

7.2 Map Layer Requirements:

- EPA GIS grid overlay – not actual lat/long lines. Grid lines should depict boundaries to the second decimal degree ie. 33.54 and -101.94 (rather than an actual point such as 33.546172, -101.945739).
- County/Parish boundaries
- Bodies of water
- OSATs should have 2 sets of maps: small scale overview maps and large scale grid maps.
- Small scale maps provide a location frame-of-reference for driving directions, while larger scale grid maps are used to perform thorough oil spill assessments.
- Large scale quadrant maps should show open locations with associated unique identifying nomenclature (“Facility/Vessel/Spill Incident ID”) written beside each red dot. This prevents OSATs from producing double entries on already open points and allows Oil Spill Removal Teams to close out the correct location.

7.2.1 Aerial Recon Over-Flight Maps

- Layers on maps utilized in aerial recon should include landmarks such as highways, football fields, treatment plants, town’s – anything that can serve as a useful reference point visible from the air. Two types of maps are necessary for aerial oil spill assessment, multi-grid navigational maps and individual grid maps. See attachments for examples.

7.2.2 Ground Maps

- Layers for maps utilized in ground assessment and acquisition should include highways, city streets, county/parish boundaries, cities, water bodies, wetland areas. It is important to have layers which show areas not accessible by car and foot such as lakes, canyons, large landfills, and large sections of restricted private property (such as gated and guarded chemical plants).

7.2.3 Waterway Maps

- Layers on maps utilized in water assessment should show layers which allow boat captains to navigate watercraft. Layers showing oyster beds, sandbars, water depth, and boat docks are useful. Waterway maps should have environmental sensitive layers so that water assessment and acquisition teams can determine what orphan containers are located in wetlands, etc. The maps should show roadways which provide access to docking and launching locations.
- The local Coast Guard Sector or Marine Safety Unit should have a contingency plan with many helpful navigational reference points.

8.0 Safety in the Field

8.1 All ICPs, Branches/Divisions will have a Health & Safety Officer (HSO). All health and safety is managed by this officer. The HSO will be able to provide overall field health and safety. The HSO will also have job aids/job safety analysis/hazard analyses available for the teams. The HSO may have on site H&S officers from other agencies or contractors that will work together as a team. The HSO reports directly to the Unified Command. The HSO can stop operations at any time they deem necessary due to safety concerns.

9.0 Information Sharing

EPA/TGLO/TCEQ will staff agency specific positions within the USCG Incident Command Post (Example: Merrell Center ICP during Hurricane IKE).

All information, data, maps, reports, photographs or any other information shall be shared with the responding agencies (USEPA, USCG, TCEQ and TGLO).

Information will be documented using the Facility/Spill Assessment Field Data Sheet or the Orphan Container Hazard Evaluation Data Collection sheet and entered into Response Manager.

ATTACHMENTS:

ICS 214B EXAMPLE

ICS 204 FORM EXAMPLE

GIS MAP REQUEST FORM

AIR OPERATIONS REQUEST FORM

MULTI-GRID NAVIGATIONAL MAP EXAMPLE

INDIVIDUAL GRID/QUADRANT MAP EXAMPLE

FACILITY/SPILL ASSESSMENT FIELD DATA COLLECTION SHEET

ORPHAN CONTAINER HAZARD EVALUATION FIELD DATA COLLECTION SHEET