

This EXAMPLE document is intended to be modified to meet incident specific needs during a response or drill. Content should be edited as appropriate to meet response objectives.

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1 **1. Plan Purpose and Objectives**

2
3 **a. Purpose**

4 Shoreline Cleanup and Assessment Technique (SCAT) is a systematic method for
5 surveying an affected shoreline after an oil spill. The SCAT approach uses standardized
6 terminology to document shoreline oiling conditions. SCAT is designed to support
7 decision-making for shoreline cleanup. It is flexible in its scale of surveys and in the
8 detail of datasets collected. SCAT surveys begin early in the response to assess initial
9 shoreline conditions, and ideally continue to work in advance of operational cleanup.
10 Surveys continue during the response to verify shoreline oiling, cleanup effectiveness,
11 and eventually, to conduct final evaluations of shorelines to ensure they meet cleanup
12 endpoints.

13 This work plan has been developed to describe the process for initiating and
14 implementing SCAT actions for shorelines impacted by the **XXX Spill/Drill**.

15
16 The SCAT process for this incident is intended to:

- 17 1. Systematically survey and document the area affected by oil to provide rapid
18 and accurate geographic description of the shoreline oiling conditions and real-
19 time issues or constraints;
- 20 2. Recommend treatment or cleanup options for oiled shorelines to OPS and UC;
- 21 3. Recommend shoreline cleanup endpoint standards to OPS and UC;
- 22 4. Monitor and evaluate shoreline treatment;
- 23 5. Provide inspection teams for segment sign off, and
- 24 6. Manage data collected from shoreline surveys.

25
26 **b. Objectives**

27
28 The objectives of the SCAT process for this incident are to:

- 29 1. Quickly collect data on shoreline oiling conditions using standard protocols and
30 mechanisms;
- 31 2. Utilize shoreline oiling data to enhance and expedite shoreline treatment
32 planning, decision-making, and response activities; and
- 33 3. Assure that a “net environmental benefit” (NEB) for an oiled shoreline is achieved
34 by shoreline cleanup.
- 35 4. Ensure that impacts to Tribal and Cultural resources as well as endangered
36 species and essential fish habitats are minimized.

37
38 **c. Fundamental Principles:**

39
40 The fundamental principles of the shoreline assessment surveys include:

- 41 1. A systematic assessment of all (oiled and non-oiled) shorelines in the affected
42 area;

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2. A division of shorelines into homogeneous geographic units or "segments";
3. The use of a standard set of terms and definitions for documentation;
4. A survey team that is objective and trained; and
5. The timely provision of data and information for decision making and planning.

2. Health and Safety

The Site Safety Officer prepares a Site Safety Plan addressing safety issues related to the incident. The Site Safety Plan addresses the principal safety and health hazards from boat and water operations and shoreline assessment and cleanup operations. The site safety plan covers training, equipment safety, protective clothing and equipment, decontamination, and first aid and medical evacuation procedures to be used during the response.

Specific safety considerations for SCAT operations include the following:

- Follow the Site Safety Plan.
- Attend daily safety meetings regarding SCAT work.
- Wear personal protective equipment.
- Use personal flotation devices when transiting across water and review safe boating practices
- Observe careful personal hygiene during the workday.
- Watch for slips, trips, and falls.
- Wear hearing protection when designated.
- Watch for heat and cold stress.
- Avoid interaction with wildlife.
- Protect hands.
- Operate equipment according to instructions.
- Practice good housekeeping in work areas.

3. Organization, Staffing, and Schedule

Organization

The SCAT Coordinator is in charge of the Shoreline Cleanup Assessment Technique operations. The SCAT Coordinator reports directly to the Environment Unit Leader, but must maintain a close working relationship with the Operations Section, resource agencies, and other affected parties. In the field, SCAT teams may receive priorities and technical directions from the SCAT Coordinator via the SCAT Field Team Manager.

Staffing

The field SCAT teams will consist of up to 6 members (plus vessel/aircraft operators as needed), ideally with the following representation (one or more roles may be combined, or not be applicable):

- Federal government representative
- State government representative
- Responsible Party
- Land owner/manager

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- 1 • Tribal government representative
- 2 • Local government and/or oversight organization
- 3 • Geomorphologist or individuals with oil spill experience and SCAT training who
- 4 can identify and document oil on the shore
- 5 • Ecologist/Biologist who can document the impacts of oil and recommend
- 6 priorities, cleanup endpoints, and ecological constraints
- 7 • Archeologist or cultural resource specialist who can advise on precautions
- 8 and constraints to protect cultural resources, if needed
- 9

10 A total of X SCAT teams have been assembled and deployed for the initial stages of this
11 incident, including X aerial survey teams and X teams for ground surveys.

12
13 Field SCAT Team participants will be selected from representatives for industry; tribal
14 state and federal agencies; and/or landowners to provide the primary expertise
15 described above. SCAT Field Team members will be assigned for each team. A listing
16 of the current organization (command & field) is outlined below.

17 The SCAT Data Manager is responsible for the maintenance of the SCAT data base and
18 for the production of maps and tables as needed. The SCAT Data Manager may
19 request the assignment of a SCAT Documentation specialist if the workload demands it.

20
21 Command Post

- 22 - **SCAT Coordinator (and Deputy, if needed)**
- 23 - **SCAT Field Team Manager**
- 24 - **Scheduler/Logistics Coordinator**
- 25 - **SCAT Data Manager**
- 26 o **SCAT Data Entry**
- 27 - **Shoreline Treatment Advisory Group**
- 28

29 Aerial Reconnaissance Team

- 30 - **Team Member**
- 31 - **State**
- 32 - **Federal**
- 33

34 Aerial Video Team

- 35 - **Team Member**
- 36

37 Ground Team 1 – SCAT ST1

- 38 - **Federal**
- 39 - **State**
- 40 - **RP**
- 41 - **Landowner/manager (if needed)**
- 42 - **Archeologist/Cultural Specialist (If needed)**
- 43 - **Wildlife Biologist/Ecologist (if needed)**
- 44 - **Tribal/Local Gov't reps (if needed)**
- 45

46 Ground Team 2 – SCAT ST2 Team Lead:

47
48 Ground Team 3 – SCAT ST3 Team Lead:

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1 Ground Team 4 – SCAT ST4 Team Lead:
2

3 Efforts will be made to minimize personnel substitutions and select team members who
4 can stay with the SCAT operations, or to have a systematic schedule of alternates;
5 people who see conditions change through time have a better frame of reference for
6 assessing the success of cleanup operations.

7
8 Initial and subsequently new field team members will be “calibrated” by having them
9 visit shorelines of differing morphology to review the agreed-upon shoreline descriptors
10 and to confirm how oil impacts will be described throughout the response process.
11 Currently deployed SCAT Teams have been calibrated.

12
13 Team Priority – Areas where heavy oiling has been noted or which are of specific
14 ecological importance will be prioritized to maximize recovery opportunities and to
15 reduce overall impacts.

16
17 **Schedule**

18 The schedule for SCAT Field Teams will change daily, and be reflected in the 204s as
19 well as on SCAT planning tools (Appendix F).
20

21 **Example:** Teams will be assigned specific survey locations as outlined on a daily basis in
22 applicable 204s. Daily surveys will be prioritized based on shoreline oiling conditions
23 noted during aerial reconnaissance flights. Areas where heavy oiling has been noted
24 will be prioritized to maximize recovery opportunities as will sensitive areas identified on
25 the ICS-232. Surveys will be completed at low tide to the extent practicable and
26 during daylight hours. Personnel may be relocated to address changing conditions.
27

28 **4. SCAT Survey Methods**
29

30 Shoreline surveys will be conducted for this incident by different methods and at
31 different scales depending upon the size of the affected area, character of the
32 shoreline type, and level of detail that is required. The following table presents a
33 summary of the survey methods that will be used for this incident, key objectives of the
34 survey methods, and the purpose of each survey method.
35

Table 1 Summary of SCAT Survey Methods		
Survey Method	Key Objectives	Purpose
Aerial Reconnaissance	Define the overall incident scale to develop regional objectives. Mapping or documentation not required.	Make specific observations, but not to map or document the oiling conditions, so that relatively large areas can be covered in a relatively short time period.
Aerial Survey	Systematically document or map to (i) create segments, (ii) develop regional	Prepare a map or maps that show the locations of stranded oil and the distribution and character of that oil by flying low altitude (<100

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Table 1 Summary of SCAT Survey Methods		
	strategies and plans, and (iii) define lengths of oiled shorelines.	feet) in a helicopter using a videotape camera linked to (1) an audio system for a detailed commentary, (2) a real time, moving map display, and (3) a Geographical Positioning System (GPS).
Systematic Ground Survey	Systematically document shoreline oiling conditions in all segments within the affected area.	Systematically document shoreline oiling conditions in all segments within the affected area and to complete shoreline oiling summary ("SOS") forms, generate sketch maps for each oiled segment and complete Shoreline Treatment Recommendations. ("STRs").
Spot Ground Survey	Systematically document shoreline oiling conditions for selected segments within the affected area.	Systematically document oiling conditions for selected segments within the affected area and to complete SOS forms, generate sketch maps for each oiled segment and complete Shoreline Treatment Recommendations ("STR").
Inspection Survey	Evaluate effectiveness of treatment methods employed by Operations in meeting shoreline treatment standards.	Systematically document shoreline conditions after treatment and cleanup of segments within the affected area against the applicable treatment standards and complete shoreline oiling summary forms and generate sketch maps for those segments. Make recommendations for closure or further cleanup actions and complete Shoreline Inspection Reports ("SIRs") for each segment for which "No Future Treatment" is being recommended.

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Shoreline Segmentation Strategy

Example 1: *Initial SCAT segments are defined based on the NOAA Environmental Sensitivity Index delineations. In some cases, these ESI-based segments have been subdivided to provide a management length segment. The shoreline between within the response area have been segmented and given identifiers based on Operational Divisions.*

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1 **Example 2:** *No pre-designated segments exist within the impacted areas associated*
2 *with this incident. Shoreline segments will be established using methods outlined in The*
3 *UK*
4 *SCAT manual: Shoreline Cleanup Assessment Technique - a Field Guide to the*
5 *Documentation of Oiled Shorelines in the UK. The SCAT Coordinator will work with*
6 *various members of the IMT to identify and characterize shoreline segments.*

7 8 **5. Field Documentation and Information Transfer**

9
10 Field documentation will consist, where possible, exclusively of standardized forms.
11 Examples include the shoreline oiling summary (SOS) and shoreline treatment
12 recommendation (STR) forms found in Appendices A and B, respectively.

13 14 **Aerial Surveys**

15 Completed field documents (notes, sketches, videos and photos) from aerial
16 reconnaissance teams are to be provided by the team members and inspected at the
17 Command Post for QA/QC the same day to ensure that any necessary revisions are
18 made prior to the surveys of the next day.

19 20 **Ground Surveys**

21 The SCAT Field Team Manager and each Field Teams are responsible for ensuring that
22 the following tasks and field documentation are completed.

- 23 • Complete SOS Form
- 24 • Complete STR Form
- 25 • Sketch(es) of the segment if oil is observed
- 26 • GPS coordinates of segment endpoints and specific features
- 27 • Digital photographs and log date/time/location if oil is observed
- 28 • Dig pits/trenches if subsurface oil is suspected

29
30 SCAT forms appropriate to the spill conditions (inland, tarball, winter, etc.) will be
31 selected.

32
33 The completed field documentation (SOSs, STRs, sketches and photos) from the ground
34 survey teams are to be provided to the Field Team Manager (or Data Manger). This
35 documentation shall be inspected at the command post for QA/QC on the same day
36 as the survey to ensure that any necessary revisions are made prior to the surveys of the
37 next day.

38
39 All GPS units and digital cameras will be surrendered to SCAT Data Manger immediately
40 upon return to the Command Post for downloading. The Data Manager will ensure that
41 device times are synchronized and that all waypoints, tracklogs, and digital pictures are
42 erased from each device prior to being redeployed with Field Teams.

43
44 In order to facilitate planning, the Team Members will notify the SCAT Field Team
45 Manager on a daily basis if any segments are identified that will require Operations
46 mobilization.

47 48 **6. Command Post Data Management and Results**

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Data QA/QC

Data from SCAT field surveys is used to plan cleanup activities for the subsequent shoreline cleanup operations.

The SCAT Data Manager receives and logs incoming SCAT field forms, sketches, and other information (films, videotapes, etc.) and reviews the field information. The review involves a quick check to make sure that all sections of the forms have been completed and that the information appears reasonable and consistent. Any questions regarding missing information or apparent inconsistencies are discussed with the field team members before the next field assignment. After the quality control is complete, forms are copied and distributed as needed and key information is transferred to tables or computer data files.

Data Outputs

In general, the types of data, graphics, and tables that will be generated from the SCAT database may include:

- Maps of shoreline segments and soil/sediment types
- Oiling conditions
- Surface oil volumes, changes in volume through time
- SCAT field survey status
- Treatment recommendations
- Cleanup treatment status
- Lengths of oiled shoreline (by oil rating and/or shoreline type)
- Lengths treated (by oil rating and/or treatment method)
- Area surveyed

Record Keeping

Original SCAT field forms, sketches, and other information (photos, videotapes, etc.) and data, graphics, and tables generated during the incident will be provided by the SCAT Data Manager to the Documentation Section for retention. Only copies of these records will be distributed for use by stakeholders (i.e. RP, USCG, EPA, state agencies, etc.).

7. Spill Cleanup Endpoints Standards

All spills have a point at which active cleanup and removal gives way to the natural degradation of the oil. In many cases, this termination point is developed through a process lead by the SCAT Coordinator (Cleanup Endpoint Stakeholder Group) and formalized by the Unified Command. In most cases, the endpoint will be assumed to have been reached when worker safety would be compromised or the remaining oil presents less of a risk to the community or the resources than the treatment methods available.

The cleanup endpoints for this spill are detailed in Appendix E.

After the Operations Division Supervisor or Shoreline Supervisor considers that cleanup in a segment has been completed, the segment will be inspected by a Sign-Off team, that will (a) determine whether the cleanup criteria have been met and (b) make a

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1 recommendation to the Unified Command regarding that segment. The team will use
2 the criteria outlined in Appendix F to make this determination. At the time of the
3 inspection, the land manager or representative will accompany the team and a
4 segment inspection report (SIR) form will be completed. The Land Manager or
5 representative may add notes in the "COMMENTS" text block on the SIR.

6
7 If the SCAT team (in consultation with the land manager) determines that no oil is
8 present in the segment or that the cleanup has met the endpoint criteria, then the
9 members of the SCAT team representing the UC will sign the SIR and forward a No
10 Further Action recommendation to the UC for approval. Note that a determination
11 that cleanup endpoints have been reached does not indicate that the segment is
12 necessarily recovered or restored under the definition of the NRDA process.

13
14 If the SCAT team determines that a segment fails to meet the cleanup criteria the team
15 will indicate this on the SIR. They will specify where work is still required in order for the
16 segment to pass inspection and will forward the form to the Operations Section Chief
17 via the SCAT Coordinator and the EUL.

18
19 The SCAT signoff process is intended to be a consensus-based team assessment. If,
20 however, the team members are not in agreement regarding whether or not the
21 endpoint criteria are met, then a sheet listing the reasons for disagreement is attached
22 to the SIR and forwarded to the UC for resolution.

1
2
3 **SCAT Work Plan Appendix A -**
4 **SHORELINE OILING SUMMARY FORM**

5 The following page shows the traditional Shoreline Oiling Summary Form.

6
7 The following links provide caches of additional forms which are modified for specific environments.

8
9 **NOAA:** [http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-cleanup-and-assessment-technique-scat.html)
10 [cleanup-and-assessment-technique-scat.html](http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/shoreline-cleanup-and-assessment-technique-scat.html)

11
12 **Polaris Applies Sciences:** <http://www.polarisappliedsciences.com/>

13
14 **Owens Coastal Consulting:** <http://www.shorelinescat.com/>

1 **Calibration IS VERY IMPORTANT!** Do a calibration exercise to make sure that all teams are consistently using
2 the same terminology and estimations.

3
4 **Units:** Use either metric (m, cm) or English (yd, ft, in). Circle the units used.

5
6 **Tide Height:** Circle the two letters indicating the progression of the tidal stage during the survey, either rising or
7 falling.

8
9 **Segment/Survey Length:** Always record both segment and survey lengths on the first survey, especially where the
10 SCAT team creates the segments in the field. On repeat surveys, always enter in the Survey Length, especially if
11 only part of the segment is surveyed.

12
13 **Start/End GPS:** The preferred format for latitude and longitude is decimal degrees, but be consistent among teams.
14 Record the datum if different than WGS84.

15 **SURFACE OILING CONDITIONS**

16 **Zone ID:** Use a different ID for each oil occurrence, e.g., two distinct bands of oil at mid-tide and high-tide levels,
17 or alongshore where the oil distribution changes from 10 % to 50%. Describe each oil occurrence on a separate line.
18 Record the shoreline type(s) present in each oiled zone using the terminology in section 4 or the ESI code.

19
20
21 **Tidal Zone:** Use the codes to indicate the location of the oil being described, as in the lower (LI), mid (MI), or
22 upper (UI) intertidal zone, or in the supra (SU) tidal zone (above the normal high tide level).

23
24 **Distribution:** Enter the estimated percent of oil on the surface (preferred), or codes for the following intervals:

25	C	Continuous	91-100% cover
26	B	Broken	51-90%
27	P	Patchy	11-50%
28	S	Sporadic	<1-10%
29	T	Trace	<1%

30
31 **Surface Oiling Descriptors - Thickness:** Use the following codes:

32	TO	Thick Oil (fresh oil or mousse > 1 cm thick)
33	CV	Cover (oil or mousse from >0.1 cm to <1 cm on any surface)
34	CT	Coat (visible oil <0.1 cm, which can be scraped off with fingernail)
35	ST	Stain (visible oil, which cannot be scraped off with fingernail)
36	FL	Film (transparent or iridescent sheen or oily film)

37 **Surface Oiling Descriptors - Type**

38	FR	Fresh Oil (unweathered, liquid oil)
39	MS	Mousse (emulsified oil occurring over broad areas)
40	TB	Tar balls (discrete accumulations of oil <10 cm in diameter)
41	PT	Patties (discrete accumulations of oil >10 cm in diameter)
42	TC	Tar (highly weathered oil, of tarry, nearly solid consistency)
43	SR	Surface Oil Residue (non-cohesive, oiled surface sediments)
44	AP	Asphalt Pavements (cohesive, heavily oiled surface sediments)
45	No	No oil (no evidence of any type of oil)

46 **SUBSURFACE OILING CONDITIONS**

47
48 **Oiled Interval:** Measure the depths from the sediment surface to top/bottom of subsurface oiled layer. Enter
49 multiple oil layers on separate lines.

50
51
52 **Subsurface Oiling Descriptors:** Use the following codes:

53	OP	Oil-Filled Pores (pore spaces are completely filled with oil)
54	PP	Partially Filled Pores (the oil does not flow out of the sediments when disturbed)
55	OR	Oil Residue (sediments are visibly oiled with black/brown coat or cover on the clasts, but little or 56 no accumulation of oil within the pore spaces)
57	OF	Oil Film (sediments are lightly oiled with an oil film, or stain on the clasts)
58	TR	Trace (discontinuous film or spots of oil, or an odor or tackiness)

59
60 **Sheen Color:** Describe sheen on the water table as brown (B), rainbow (R), silver (S), or none (N).

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SCAT Work Plan Appendix B – SHORELINE TREATMENT RECOMMENDATION FORM

The following page shows the traditional Shoreline Treatment Recommendation Form.

The following link provides additional forms.

Owens Coastal Consulting: <http://www.shorelinescat.com/>

1 **INCIDENT NAME**

2 **Shoreline Treatment Recommendation**
3 **Operational Permit to Work**

STR# ____

4 Segment: _____

Survey Date: _____

6 **Start Latitude:** _____

End Lat: _____

7 **Start Longitude:** _____

End Long: _____

Length (m): _____

8 **Shoreline Type:** *Primary* _____ *Secondary* _____

10 **Oiled Areas for Treatment:**

11 *Auto entry directly populated from data base of:*
12 *Zone: Shoreline Type, L x W, Oil % Dist, Oil Character, Oil Thickness, Oiling Category*
13 *e.g. Zone A: Salt marsh, 200 m x 1 m, 10% Fresh oil, pooled, Oiling Category: Heavy*

15 **Cleanup Recommendations:**

16 *(Use standard terms and definitions from a Word document or populate database with these standard*
17 *statements)*

21 **Staging and/or Logistics Constraints/Waste Issues:**

22
23
24

25 **Ecological Concerns:**

26
27
28

29 **Cultural / Historical Concerns:**

30
31

32 **Safety Concerns:**

33
34

35 **Attachments:** Segment Map Sketch SCAT Form Fact Sheet Other

37 Prepared by: _____ Date Prepared: _____

38 Date
Time

to SOSC

to Land Mgr

to SHPO

to EU Leader

to _____

41 **Final**

42 **Approval** _____
43 State OSC Rep

Federal OSC Rep

EU Leader

Submitted
to OPS _____

44
45 **** When Treatment is completed, send a Segment Completion Report to SCAT ****

SCAT Work Plan Appendix C – SEGMENT INSPECTION REPORT FORM

The following page shows the traditional Segment Inspection Report form.

The following link provides a cache of additional forms.

Owens Coastal Consulting: <http://www.shorelinescat.com/>

1 **Segment Inspection Report for** _____
2 _____

3 **Segment ID:** _____ **Segment Name** _____

4 **Survey Date:** _____ **Survey Time:** _____

5 **Tides:** _____ **Weather:** _____

6 **Inspection Completed Along Entire Segment:** Yes / No

7 **Result/Recommendation:**

- 8 No oil observed.
9 Meets cleanup endpoints.
10 No further treatment recommended.
11 Further treatment recommended.

12 (Provide written details of issues and required actions.)
13

- 14 Continued monitoring required.

(Provide written details of frequency and schedule.)
15

16 **SCAT Team Members:**

17 Name

Signature

18 _____
19 FOSC Rep

20 _____
21 SOSC Rep

22 _____
23 RP Rep

24 _____
25 Landowner/Other Rep

1
2

**SCAT Work Plan Appendix D –
PHOTO CONTENT/LOG**

SCAT PHOTO LOG FORMAT

These standards should be reviewed and confirmed during each incident by the Data Manager.

Item	Format	Example
Date	Date	dd mmm yyyy
Time	Time	24 hour
Team	Team	N or L
Location Name *	Location Name *	text
Segment Number	Segment Number	LLL-NN
Ops Division *	Ops Division *	N or L
Latitude	Latitude	dd.ddddd
Longitude	Longitude	ddd.ddddd
Waypoint *	Waypoint *	NNN
Subject	Subject	text

* optional

NOTES:

1. Ensure the GPS is on with the "trackline" active. For aerial tracks, use a 5-second fix, for ground/walking use about a 30-second fix. **DO NOT SAVE THE TRACKLINE TO THE GPS** – download tracks to a computer file each day; if you save to the GPS then the track fixes are averaged and so we lose the ability to sync the times of the track fixes to the photos with OziExplorer
2. Ensure GPS and camera times are in sync
3. Take photo of GPS time at least twice a day
4. **The purpose of the photographs is to document the character of any oil observed within a segment.** Do not take too many photos of the oiled zone or location as one or two good photos only are necessary for documentation.
5. If there is **no oil** found within in segment then only take one or two photos. Preferably take a photo alongshore approximately at the High Water Level to record the general character of the segment.
6. Photography would be required if any cultural resources are identified (see Appendix H).
7. **WAYPOINTS:** Not necessary to take a waypoint at every photo location, but is valuable for specific items of interest that are photographed (such as the start and/or end of an oiled area or a pit in which oil is found).
8. **SCALE:** For distant or panorama shots always try to have a person in the middle distance for scale. For close-up shots always use a scale (the back of the field note book scale is preferred rather than a pencil or a coin!!)

1 Introduction

2 All spills have a point at which the active clean-up, removal, and recovery operations
3 give way to natural processes of oil degradation. In most cases, this termination point is
4 qualitative, developed through a consensus-based process and field verified by
5 representatives from the Unified Command (UC) in consultation with the appropriate
6 federal, state, and local trustees. In all cases, the endpoint is reached when responder
7 safety would be compromised or the remaining oil presents less of a risk to the
8 community and natural resources than the response and recovery methods available.

9 The determination as to cleanup methods, priorities, and termination will be made via
10 UC representatives.

11 Completion of active shoreline countermeasures is a decision of the On-Scene
12 Coordinator (OSC). Support of the OSC requires recommendations on shoreline
13 countermeasures and also recommendations on when to terminate cleanup
14 operations. Evaluating the results of countermeasures and the recommendation to
15 terminate response efforts requires a consensus of members who may have varying
16 interests and roles. One key element for all parties to examine is to determine if the
17 continued use of a particular countermeasure will result in more damage to the
18 environment than would occur as a result of terminating any active response measures.

19 The Endpoint Plan provides a cleanup endpoints and constraints for each shoreline
20 type. There may be unique factors in any given segment that will require a different
21 approach. At the end, there is a summary table of this information.

22 Endpoints for No Further Action

23 These guidelines establish endpoints for operations for the Phillips 66 Tacoma
24 Earthquake Exercise DRILL, including free product release and containerized product.
25 These endpoints may be amended to address as yet unforeseen circumstances and do
26 not constitute shoreline restoration or full recovery criteria, which may be addressed
27 through a longer-term process. These endpoints define the conclusion of cleanup
28 operations while attempting to minimize overall impact (including those from
29 operations) to sensitive resources.

30 *Stranded Free Oil Product*

- 31 • Oiled shorelines shall be free of bulk product and not produce rainbow sheen
32 under all weather and tidal conditions.
- 33 • There shall be no appreciable mobile oiled debris that is recoverable. Oil film,
34 stain and minor sheening may still be present if best professional judgment of
35 the Environmental Unit determines that further recovery will not produce
36 environmental benefit. Such residual oiling would be allowed to degrade
37 naturally.
- 38

1 Specific Target Cleanup End-Points for Various Habitat Types:

2
3 *Fine-Grain Sand Beaches*

- 4 • Beaches shall be free of bulk oil and not produce rainbow sheen during tidal
- 5 events.
- 6 • Light oil stain on beach sediment that does not produce rainbow sheen may be
- 7 allowed to weather and degrade naturally.
- 8 • Some oil stain may still be present on sediments at the end of active cleanup if
- 9 best professional judgment is that further treatment will not produce
- 10 environmental benefit.
- 11 • Minor residual sheen that is dull in color or silver may remain and weather
- 12 naturally.

13
14 Do not remove oiled wrack. Access to upland areas must be restricted to prevent

15 additional environmental damage. Snare may be used for passive recovery of sheen

16 adjacent to shoreline.

17
18 *Bulkheads and Piers*

- 19 • All hard structures shall be free of bulk oil and not produce sheens that would
- 20 represent a secondary oil source.
- 21 • Oil stains that cannot be removed easily and safely may be left to weather and
- 22 degrade naturally.
- 23 • Minor residual sheen that is dull in color or silver may remain and weather naturally.

24
25 Where appropriate, clean-up crews may use a variety of flushing techniques from low

26 pressure ambient water to high pressure/high volume ambient water flushing into

27 containment and collection. High pressure should not be used where attached marine

28 organisms (algae, bivalves, echinoderms) are abundant. Passive snare may be

29 deployed. High pressure flushing will require segment specific approval from the EU.

30
31 *Marshes /Tidal Mudflats*

- 32 • These areas shall be free of free floating and potentially mobile oil, including oiled
- 33 debris and wrack at the fringe marsh.
- 34 • There shall be no appreciable sheens released from marsh. Minor residual sheen
- 35 that is dull in color or silver may remain and weather naturally.
- 36 • Oil stained and coated vegetation will not produce sheen or appreciable wildlife
- 37 threats.
- 38 • **Stay out of these areas unless otherwise directed.**

39
40 Aggressive cleanup on marshes/mudflats may actually cause greater long- term

41 damage. There must not be any physical cleanup activities in marsh areas that will

42 cause damage to marsh vegetation or entrainment/entrapment of oil product into

43 sediments. Snare boom should be staked along the front edge of oiled marsh for

44 passively recovery of sheens. These snares must be inspected and replaced routinely.

45 Low pressure deluge flushing with ambient water may also be deployed from the upper

46 marsh to flush product into containment and collection. Deployment of this technique

47 should not involve walking into soft sediments or marsh vegetation. Best professional

48 judgment by the Environmental Unit/SCAT will be used to determine if further treatment

1 or cleanup would have no environmental benefit and may delay, rather than
2 accelerate, recovery of the vegetation. This judgment will be based on fact, past
3 studies or data from previous oil spills.

4 *Riprap/Rubble*

5 Type I Riprap is defined as shorelines that are not commonly accessed by the public or
6 have sensitive wildlife concerns. Type I riprap should meet the following criteria:

- 7 • Oiled riprap shall be free of bulk oil and not produce appreciable sheen under all
8 weather conditions.
- 9 • Oil stains that cannot be removed safely will be allowed to weather and degrade
10 naturally.
- 11 • Some inaccessible patches of oil may not be feasible to remove.
- 12 • Safety is paramount. Areas of broken rebar and other damaged materials should
13 be avoided.
- 14 • Minor residual sheen that is dull in color or silver may remain and weather
15 naturally.
- 16

17 *High Public Use Areas*

18 High Public Use Areas are defined as shorelines that have a greater potential for
19 members of the public (and their pets) coming into direct contact with residual oil
20 pollution and will likely necessitate a higher cleanup standard. The following additional
21 cleanup criteria apply to public use area.

- 22 • No oil residues that would present a contact hazard to the public (residents,
23 visitors, or pets).
- 24 • No oiling that would easily rub off and stain clothing or pets.
- 25 • *High Public Use or Public Access Areas will require "case-by-case" assessment and*
26 *identification of cleanup requirements.*
- 27

28
29 Where appropriate, clean-up crews may use a variety of flushing techniques from low
30 pressure ambient water to high pressure/high volume ambient water flushing into
31 containment and collection. High pressure should not be used where attached marine
32 organisms (algae, bivalves, echinoderms) are abundant. Passive snare may be
33 deployed.

34
35 Note: Because diesel has many light ends it is very odorous. It is possible that areas may
36 have a lingering smell of diesel after they have met the clean-up end points.

General Shoreline Treatment Recommendations and Endpoints

Additional treatment options may be beneficial or necessary for specific shoreline segments. This will be handled on a case by case basis.

Habitat Type	Cleanup Endpoints	Recommended Cleanup Methods	Constraints
Wetlands	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Snare boom should be staked along the front edge of oiled marsh for passively recovery of sheens. Collect heavily oiled debris by small boats at high tide. Any additional cleanup requires EU approval.	Do not disturb vegetated areas, even if oiled No foot traffic in vegetated wetland areas
Vegetated shorelines	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Manual removal of oily debris less than 4" diameter. Skimming and vacuum of floating oil on the water surface. Use flushing with sea water along the vegetated fringe to release trapped oil. Where remaining oil poses a significant threat to bird concentration areas, sorbent snare may be deployed. Such areas will be identified by the EU	There will be limited foot traffic in vegetated areas (access points only) During flushing, prevent suspension of bottom sediments (do not create a muddy plume) No cutting of vegetation at this time
Marshes/Tidal flats (mud and/or sand)	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Snare boom should be staked along the front edge of oiled tidal flat for passively recovery of oil and rainbow sheens. Collect heavily oiled debris by small boats at high tide, or on foot in firmer areas. Any additional cleanup requires EU approval.	Do not enter tidal flats to recover oil or oily debris if boots sink more than 2 inches into the mud.
Bulkheads and Piers	No mobile oil, as evidenced by silver sheen.	Flooding and low-pressure, ambient water flushing to remove mobile oil; flush only to the point where a silver sheen remains; use booms for containment and skimmers/vacuum for recovery of released oil Minimal use of sorbents	Do not remove or intentionally dislodge organisms on bulkheads or piers.
Rip rap/rubble shoreline	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Flooding and low-pressure, ambient water flushing to remove mobile oil; flush only to the point where a silver sheen remains; use booms for containment and skimmers/vacuum for recovery of released oil. Passive snare may be deployed. Minimal use of sorbents	Do not remove or intentionally dislodge organisms on rip rap.
Fine grained sand shorelines, and mixed gravel	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Flooding and low-pressure, ambient water flushing to remove mobile oil; flush only to the point where a sheen remains; use booms for containment and skimmers/vacuum for recovery of released oil Minimal use of sorbents, snare is preferred	Use barriers and signs to prevent public access to oiled areas Do not remove unoiled wrack. Access to upland areas must be restricted to prevent collateral damage High Public Use or Public Access Areas will require segment specific recommendations.
Oiled Debris	Removal of all readily accessible heavily oiled debris (releases liquid oil when disturbed)	Manual removal using appropriate hand tools (rakes, pitchforks, etc.) of items less than 4 inches in diameter.	Do not remove clean or possibly oiled debris No cutting of vegetation allowed

SCAT Work Plan Appendix F – EXAMPLE Management, Planning, and Tracking Forms

The following pages provide example management, planning, and tracking documents that may be used by SCAT staff for: **long-range strategy and survey planning, short-term rolling missions, and daily field team tasking and logistics.** Templates for each of these three forms are provided on the following pages. Appendix materials were provided courtesy of Owens Coastal Consulting and are available via <http://www.shorelinescat.com/>.

1. The **long-range strategy and survey planning table (Table F-1)** provides a survey strategy plan for a period of a month or longer.
 - The survey strategy is developed by the SCAT Coordinator in consultation with the Environmental Unit Leader (EUL).
 - The table is created by the SCAT Logistics Coordinator and enables planning for long-term staffing and logistics support, taking into account factors such as survey priorities, low-tide windows, environmental constraints (e.g. bird or turtle nesting site timing), etc.
 - This same table tracks each mission and activity that has been completed and provides a program history.
2. The table for **short-term rolling mission planning (Table F-2)** covers several days and ensures appropriate data, logistics, and safety support. It requires continuous updating based on survey priorities and on work that has been completed.
 - This process is accomplished with a “SCAT Mission Planner” that is generated by the SCAT Coordinator or designee in consultation with the EUL.
 - This Mission Planner is updated and reissued daily by the SCAT Logistics Coordinator based on the completion of prior missions and provides a rolling 7-day (or 10- or 14-day) plan to accomplish the priorities set by the EUL.
 - Input to the Mission Planner also is provided by Operations (or SCAT Ops Liaison) who indicates when treatment in a segment or zone is nearing target end points, or has been completed, so that appropriate surveys or inspections can be scheduled.
 - This rolling plan is based on the long-range survey strategy as developed in the “SCAT Strategy and Tracking Table”
3. The **SCAT Team Daily Tasking and Logistics Plan (Table F-3)** links the management of the SCAT program to the ICS process and the planning cycle is the “SCAT Team Daily Tasking and Logistics Plan” which describes the planned activities for the following day, i.e. Next Operational Period (Figure 3).
 - The “SCAT Team Daily Tasking and Logistics Plan” is prepared by the SCAT Coordinator or designee and provided to the EUL to be discussed during preparation for the Tactics Work Period and Tactics Meeting during each Planning Cycle.
 - The field activities outlined in this daily tasking plan are part of the package of EU field assignments and activities reviewed in the Tactics Meeting to ultimately aid the

1 development of the Work Assignments that are captured on the ICS 204 forms
2 (Assignment List) for the Next Operating Period. These field assignments are then
3 included in the Incident Action Plan (IAP).

4 Additional tables and spreadsheets for program management can be created to track specific
5 activities, such as the status and progress of STRs and of the inspection (PTA) and sign-off (SIR)
6 surveys. One example of a summary table that records completed daily field activities is provided
7 on the following pages. This SCAT Daily Field Activities table (Table F-4) records how many teams
8 were deployed each day and the category of missions that were completed or attempted.

This SCAT Strategy and Tracking Table is populated with fictitious information. Gray rows represented completed missions and activities. The white rows indicate the planned strategy and missions. Typically this table would be used to plan forward up to 30 days or longer.

TABLE F-1:EXAMPLE SCAT STRATEGY AND TRACKING TABLE

	SCAT TEAM # 1	SCAT TEAM # 2	SCAT TEAM # 3
Wednesday, January 02, 2013	Travel Day TL = Team Lead	Travel Day TL	Travel Day TL
Thursday, January 03, 2013	N Barataria Bay (S4-032) MON LA PL01-029 & LA PL01-036-10 - both passed TL	Cancelled due to access issues / Wind West Timbalier (S4-027) SIR LA TB04-004-10 TL	Fourchon BP TL
Friday, January 04, 2013	Cancelled Due to Small Craft Advisory Night Before Turtle Pen Isle (S4-038) SIR LA SB05-017-10 TL	Cancelled Due to Small Craft Advisory Night Before Calumet Island (S4-035) MON LA LF01-044-30 TL	Fourchon BP TL
Saturday, January 05, 2013	N Barataria Bay (S4-032) SIR LA PL01-036-10 - passed TL	N Barataria Bay (S4-032) PTA LA PL01-034-30 - failed MON LA PL01-053-30 - passed & LA PL01-053-70 - did not get to TL	Office- OSAT TL
Sunday, January 06, 2013	Canceled Due to Access Issues West Timbalier (S4-027) PTA LA LF01-036-20 TL	Canceled Due to Fog Drum Bay (S4-007) <u>partial</u> MON LA SB06-002-10 Turtle Pen Isle (S4-038) SIR LA SB05-017-10 TL	Grand Terre 3 (S4-024) SIR LA PL01-008-10 - passed TL
Monday, January 07, 2013	Fourchon Beach (S4-017) PTA LA LF02-007-10 - passed TL	N Barataria Bay (S4-032) PTA LA PL01-053-20 - passed TL	Calumet Island (S4-035) MON LA LF01-044-30 - failed TL
Tuesday, January 08, 2013	N Barataria Bay (S4-032) SIR LA PL01-029-10 - failed TL	Keelboat Pass (S4-038) SIR LA SB05-014-20 - passed due to ALARP TL	N Barataria Bay (S4-032) MON LA PL01-053-70 - passed due to NEB TL
Wednesday, January 09, 2013	N Barataria Bay (S4-032) SIR LA PL01-027-10 w/OPS	Grand Isle Augering	Grand Isle Augering

	TL	TL	TL
Thursday, January 10, 2013	N Barataria Bay (S4-032) PTA LA PL01-034-10	N Barataria Bay (S4-032) SIR LA PL01-053-20 - <i>if has passed post treatment inspection</i>	Grand Terre 3 Beach Profiles 1-5 for March and PM site #25
	TL	TL	TL
Friday, January 11, 2013	Augering Check-up at all areas	Grand Isle Augering	Grand Isle Augering
	TL	TL	TL
Saturday, January 12, 2013	Keel Boat Pass (S4-038) SIR LA SB05-015-10 w/ OPS - <i>will need 3 crewboats</i>	Grand Isle Augering	Grand Isle Augering
	TL	TL	TL
Sunday, January 13, 2013	GT- 2 BP	GT- 1 BP	N Barataria Bay (S4-032) SIR LA PL01-053-70 - <i>i if has passed post treatment inspection</i>
	TL	TL	TL

TABLE F-2: EXAMPLE SCAT MISSION PLANNER TEMPLATE

DATE	SCAT TEAM # 1	SCAT TEAM # 2	SCAT TEAM # 3	SCAT TEAM # 4
DD Month YYYY	Location Mission(s) Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead
DD Month YYYY	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead	Location Mission Team Lead

This is a rolling planning table that is updated DAILY and Provides a 7-day plan for upcoming missions.

MISSION KEY

- SCAT Shoreline Assessment Survey
- PTA Post-Treatment Assessment Survey
- SIR Shoreline Inspection Report Survey

- OLS Operations Liaison Support
- BP Beach Profiling
- MON Monitoring
- PM Photo Monitoring

TABLE F-3: EXAMPLE SCAT TEAM DAILY LOGISTICS PLANNER TEMPLATE

SCAT TEAM LOGISTICS for DD Month YYYY						Issued : Date
Team	Staff		Survey Area	Mission	Logistical Arrangements	Time
SCAT #1	Team Lead	Name	<u>County/Parish</u>			
		Cell Phone	<u>Place Name</u>			
		FED	Segment Number(s)			
		STATE				
	Safety					
SCAT #2	Team Lead	Name	<u>County/Parish</u>			
		Cell Phone	<u>Place Name</u>			
		FED	Segment Number(s)			
		STATE				
	Safety					
SCAT #3	Team Lead	Name	<u>County/Parish</u>			
		Cell Phone	<u>Place Name</u>			
		FED	Segment Number(s)			
		STATE				
	Safety					
SCAT #4	Team Lead	Name	<u>County/Parish</u>			
		Cell Phone	<u>Place Name</u>			
		FED	Segment Number(s)			
		STATE				
	Safety					

Mission Codes

SCAT = Standard Shoreline Oiling Assessment Survey

PTA = Post-Treatment Assessment

SIR = Segment Inspection Report Survey

OLS = OPS Liaison Support

BP = Beach Profiling Survey

MON = Monitoring

PM = Photo-Monitoring

Time

Enter scheduled time for each logistics action.

TABLE F-4: EXAMPLE SCAT DAILY FIELD ACTIVITIES

		CANCELLED MISSIONS			FIELD DEPLOYMENTS							NOTES (*Special Circumstances)
Date	# of Planned Teams	WX or Safety	Logistics (Boat/UTV)	Other (See Notes at Right)	SCAT	PTA	SIR	BP - Beach Profiles	PM Photo Monitoring	Operations Support (OLS)	MON	
1/1/2013	0											New Years' Holiday
1/2/2013	0											Travel Day
1/3/2013	3	3										*Safety - Safety Stand-down Gulfport
1/4/2013	6			2						4		* Other - Office/*OLS - Auguring Meeting
1/5/2013	6	1								4	1	
1/6/2013	6	2								4		
1/7/2013	6	2								4		
1/8/2013	6			1			1			4		*Other- Office due to small craft adv
1/9/2013	6	2								4		
1/10/2013	6	2								4		
1/11/2013	5								1	4		
1/12/2013	6					2				4		
1/13/2013	6			6								*Other- augering meeting Houma
1/14/2013	6	1				1				4		
1/15/2013	9	2					1			6		
1/16/2013	9	3								6		
1/17/2013	9							3		6		
1/18/2013	9			1		0.5	1			6	0.5	*Office- OSAT
1/19/2013	9	2					1			6		
1/20/2013	6		1			1.5	1.5				2	
1/21/2013	10					2		1		6	1	
1/22/2013	9						2			6	1	
1/23/2013	9					2	1			6		
1/24/2013	9							0.5	2.5	6		
1/25/2013	5						4		1			
1/26/2013	4					1	1			2		*OLS- Middle Ground for final data collection
1/27/2013	4			3			1					*other- safety training at Holiday Inn Houma
1/28/2013	11			8			2	1				augering canceled- La One cal
1/29/2013	10	1		7			1	1				augering canceled- La One cal
1/30/2013	10	10										all teams canceled due to Wx
1/31/2013	10					1	2			7		
January	210	31	1	28	0	11	19.5	6.5	4.5	103	5.5	