



National Incident Commander
Deepwater Horizon Response

2100 Second Street, S.W.
Washington, DC 20503-0001
Staff Symbol: (NIC)
Phone: (202) 372-1700
FAX: (202) 372-1933

16451

MEMORANDUM

From: T. W. Allen 
National Incident Commander, Deepwater Horizon Response

Reply to: CAPT P. Gautier

To: RADM Paul Zukunft
Federal On-Scene Coordinator

Subj: SUB-SURFACE OIL AND DISPERSANT DETECTION, SAMPLING AND
MONITORING STRATEGY

Ref: (a) UAC Adaptive Sub-Surface Sampling Strategy for Transition from Response to
NRDA Approved 03AUG10.

1. Reference (a) is your sustained sampling strategy to determine the presence or absence of sub-surface oil. Expansion of the scope and resources allocated for this purpose is necessary to support a more comprehensive plan for detecting, sampling, monitoring and providing information to the public. I have identified the detection, sampling and monitoring of sub-surface oil and dispersants as a removal action under the National Contingency Plan.

2. The goals of this removal action are to: (1) monitor and assess the distribution and degradation of the portion of the oil that remains in the water column and/or bottom sediments, (2) evaluate the distribution of indicators of break-down products of dispersants used in oil spill response activities, and (3) identify any additional response requirements that may be necessary to address remaining sub-surface oil. The strategy should utilize all appropriate existing empirical data, and fate and transport model results to identify likely locations of elevated concentrations of sub-surface oil and dispersants for subsequent at-sea sampling; determine the rates of degradation of sub-surface oil and dispersants (in the water column and where appropriate, in the sediments); and evaluate the immediate impacts to the biological community by measuring factors such as dissolved oxygen levels and other appropriate indicators, and microbial community characteristics.

3. Accordingly, you are directed to complete the following steps:

- a. With NOAA as the operational lead, in concert with other relevant Federal agencies (e.g. DOI, EPA, OSTP, CEQ, NSF, HHS, and others) and interagency groups (e.g. Joint Analysis Group, NSTC Committee on Environment and Natural Resources, and others), review reference (a) and any supporting protocols and revise as required to ensure that the sub-surface oil and dispersant detection, sampling and monitoring strategy:

- i. is comprehensive in scope and supports the goals stated above;

- ii. encompasses a sufficient period of time to adequately meet the monitoring strategy objectives in the short-term (i.e., the next 60 days) and transitions to establish the foundation for long-term assessment;
 - iii. explicitly incorporates academic and private scientific institutional partners and the relevant state agencies in the planning and execution of the program;
 - iv. employs a requirements-driven approach and develops a statistically robust detection and sampling scheme (which incorporates existing sampling locations) supported by existing analytical and modeling data across all impacted geographic areas, from near-shore to offshore:
 - v. utilizes currently deployed and/or readily available platforms (including but not limited to surface vessels, AUVs, gliders, ROVs, and passive sampling devices), equipment and systems from Federal and State government agencies, academic and independent research institutions (with particular emphasis on Gulf State institutions), the responsible party, and commercial sources including vessels of opportunity with appropriate command and control;
 - vi. immediately incorporates and expands, as appropriate, other sub-surface sampling and monitoring programs including but not limited to the Snare Sentinel Program in near-shore areas;
 - vii. incorporates existing public reporting processes for identifying the locations of sub-surface oil and procedures for vetting the validity of such reports;
 - viii. is implemented with appropriate command and control;
 - ix. yields real-time operational results and information communicated on a regular basis;
 - x. is communicated clearly and effectively to the scientific community and the public;
 - xi. is coordinated with and informs other science-based monitoring strategies including the seafood safety and monitoring plan;
 - xii. incorporates existing data management and sample archiving capabilities to ensure that the data acquired in support of this plan are made publically available in easily accessible formats and in a timely manner and that sample replicates are adequately preserved for possible future analyses; and
 - xiii. includes a clear data sharing policy that explicitly outlines how data will be collected, archived, undergo quality control/quality assurance; assures data and analyses are widely available on a timely basis; and outlines how data and results will be shared among partners.
- b. Develop a plan to implement the detection, sampling and monitoring strategy that emphasizes timely and complete reporting of monitoring results and conclusions,

keeps the scientific community and general public informed on a regular basis, and engages stakeholders.

- c. Develop a set of explicit, measurable endpoints for the each of the stated removal action goals to ensure effective resolution.**
- d. Develop a detailed timeline that implements this strategy, and a list of required resources for effective execution.**
- e. Develop an appropriate resourcing plan to implement the approved sampling and monitoring strategy.**

4. Please submit an implementation plan to me for the steps outlined in paragraph (3) NLT Wednesday, August 18th.

#

2 August 2010

Adaptive Sub-Surface Sampling Strategy for Transition from Response to NRDA

Executive Summary:

A sustained, 30-day strategy is recommended to provide consistent monitoring of the sub-surface environment with the goal of transitioning from Response to the Natural Resources Damage Assessment (NRDA) process. This effort will be conducted and executed by the Unified Command (UC), with NOAA providing marine sciences expertise support to the FOOSC and as the federal natural resources trustee, taking a leadership role.

The primary goal is to resolutely answer several outstanding questions about the location, extent, impact, and character of subsurface oil. To expedite this operation a small advisory team will review all relevant data, identify sampling gaps, and report on progress towards the key decision points outlined below.

Response Objectives:

Provide a physical sampling capacity (platform/equipment/personnel) and analytical expertise to begin final resolution of:

1. **Sub-surface oil presence/absence** (location, extent, and concentration);
2. **Dissolved oxygen levels and trends** as a measure of acute impact; and
3. **Microbial degradation rates and community characteristics.**

As a measurable decision point, all sampling parameters will be benchmarked against historical background levels. Missions will be adaptively guided by modeling output and empirical findings, with Joint Analysis Group (JAG) protocols and recommendations being employed.

In addition to providing greater clarity on these critical Response issues, execution of this plan will help achieve several key contextual goals, including:

1. Establishing clear decision points for the subsurface mapping and monitoring effort;
2. Providing the UC with timely information which can be relayed to the public and stakeholders;
3. Providing a natural transition from the Response to NRDA phases of the incident; and
4. Maintaining a sustained federal natural resource trustee presence to complement ongoing compliance-based sub-surface sampling being conducted by the Responsible Party.

Primary Assets Required:

- High endurance surface vessels with deepwater mapping and sampling capability
- Ocean gliders to serve as sentinels on continental shelf
- Profiling floats to establish longer term tracking of subsurface oil

Schedule:

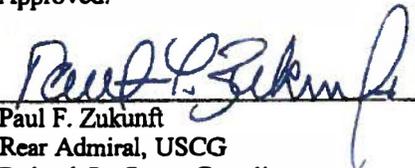
- Immediate approval and execution is recommended to ensure timely capture of data in the post source control era, and help ensure effective transition from Response to Assessment.
- Approximately 30-day sustained effort to be re-evaluated on weekly basis by UC, including 45 operational vessel days with federal natural resources trustee presence.

Principal Execution Components to Expedite Transition from Response to NRDA:

- Immediate commencement (2 Aug 2010) of this sampling strategy to include a maximum of 45 operational (i.e., actual sampling) vessel days.
- Immediate acquisition and tasking of high endurance NOAA Ships (or equivalent) to maintain a sustained presence by the federal natural resources trustee. At least one of these vessels should have DP1 navigational and EK-60 acoustic capabilities in the event that the Federal Science Team requests additional acoustic monitoring as part of the ongoing wellhead integrity testing. Acoustic capability is required to continue mapping seeps with coincident physical sampling.
- Operational tasking of a 3-4 person, short-term operational science advisory team (OSAT) to directly inform the Unified Command (via the Environmental Unit and NOAA SSC) with respect to the three primary decision points (above) and transition recommendations. This team would have three specific tasks:
 - Preliminary evaluation of all relevant data with respect to the 3 primary issues (oxygen levels, microbial degradation, and plume extent/concentration);
 - Within 10 working days, deliver a status report to UC with recommendations on any sampling gaps and progress towards the key decision points outlined above; and
 - By 25 August review all relevant data (including papers and studies relevant to half-life of the source oil, dispersant application data, and principal source control changes) and provide clarity on decision points with the intention of transitioning to NRDA.
- A final, declarative analytical report will be developed by the NIC-codified Joint Analysis Group.
- Support of 6 ocean gliders (for up to 30 days) to serve in a sentinel role on the Continental Shelf and as guided by the OSAT and the Sub-Surface Monitoring Branch (part of the UC). Historical ocean glider data will be incorporated in the response data set for evaluation.
- Deployment of at least one ocean profiling float to maintain a passive tracking capability of key sub-surface water mass. This is also a practical way of transitioning to NRDA.
- Senior federal natural resources trustee scientist presence on all Responsible Party (RP)-captained vessels. Option for RP representative on all federal vessels.
- NRDA presence on all vessels to support NRDA chain-of-custody and subsequent analysis.

Execution of this proposal is contingent upon approved budget and final, detailed mission plans/schedule.

Approved:

 8/3/10
Date
Paul F. Zukunft
Rear Admiral, USCG
Federal On-Scene Coordinator
Unified Area Command
1250 Poydras Street
New Orleans, LA 70113

 8-2-10
Date
Douglas J. Suttles
Chief Operating Officer
BP Exploration & Production, Inc.
501 Westlake Park Blvd.
Houston, TX 77079