

Pacific States/BC Oil Spill Task Force

Research and Development Workgroup

SUMMARY NOTES

January 6, 2014 Annual Conference Call

PARTICIPANTS:

Laurie Boyle, Ministry of the Environment, British Columbia
Don Pettit, Department of Environmental Quality, Oregon
Curtis Martin, Department of Health Hawaii
Lori Medley, Bureau of Safety and Environmental Enforcement (BSEE)
Carl Brown, Environment Canada
Sonja Larson Department of Ecology, Washington
Judd Muskat, OSPR, Department of Fish and Wildlife, California
Ellen Faurot-Daniels- OSPR, Department of Fish and Wildlife, California
Bruce Joab, OSPR, Department of Fish and Wildlife, California
Bill Vocke, USCG/Interagency Coordinating Committee on Oil Pollution Research
Kurt Hansen, USCG Research and Development Center, Connecticut
Crystal Smith, Department of Environmental Conservation, Alaska
Dianne Munson, Department of Environmental Conservation, Alaska
Sarah Brace, Oil Spill Task Force, Washington

ROUND TABLE UPDATES

Crystal Smith and Dianne Munson, Alaska DEC

- **Nearshore strategy:** A challenge to deal with nearshore oil recovery and protection in areas that are very remote. Barges, vessels, etc. are in these areas for up to 21 days without resupply. DEC is revising the Spill Responders Book to include guidance on nearshore.
- DEC is examining **dispersant preauthorization plans**. A science and technology committee through the Alaska Regional Response Team (RRT) is working on this and will finalize the plan early this summer. The new plan will remove the pre-authorization zones in Prince William Sound and Cook Inlet areas. There will only be one pre-authorization area that spans from east of Prince William Sound and wrap around the Aleutians. The pre-authorization area will start at 24 mile offshore and will extend out to 200 miles.

- **Spill** prevention and response -- In March 2013, DEC approved a 70 percent oil recovery efficiency rating (ORE) for Crucial disc skimmers. This is a significant increase compared to the standard 20 percent ORE rating given to other skimmers. In order to get the 70 percent ORE, the Crucial disk skimmer must be used with a “Buster” skimming system.

NOTE: Please find the attached decision document regarding the DEC’s approval of increased oil recovery efficiency rating for Crucial disk skimmers.

- **Arctic related issues** – DEC continues to monitor and offer assistance to the many Alaskan Arctic related research and development efforts currently underway (National Academy of Sciences studies, industry led JIP’s, University of Alaska research, etc.).

Judd Muskat – CA OSPR

- **SW ERMA** – A common operational picture (COP) and response planning tool. OSPR has taken all of the information from the 9800 section in the three California area contingency plans (GRPs) and added all this info into ERMA. Been ongoing for past year. Sunken Vessels are not currently included. ERMA area contingency data is freely available to the public (no login required). Response specific information requires user login required. NOAA controls login credentials. Here is the URL for ERMA Southwest: <https://www.erma.unh.edu/southwest/>
- **Tablet technology** for field collection. Had been using a more cumbersome and expensive technology (Trimble) but they are trying to move to iPad platform.
- **SSSEP Project:** (Sensitive Sight Strategy Evaluation Program). Have defined sensitive sites in CA and yearly tests specific selected OSRO strategies.

Question: have you compared how your system looks to the NW ERMA?

Response: Not yet – need to get together on standards and on data structure. (Data structure in ERMA is provided by NOAA.)

Question: Regarding SSSP – are changes reported when folks make changes to the ACP?

Response: Incorporating lessons learned – “currents are too strong”, etc

Bruce Joab – CA OSPR

- **SSEP** (Research and development) has been quiet. Have a website with some reports but nothing terribly new.
- **NRDA.** Pretty active with Chevron. Four Ephemeral Data collection plans. Put in plans for the first 24-48 hours to get ahead of oiling of shoreline or lands. Final plans for the Humboldt Bay and El Segundo (LA) areas finalized. San Diego plans are under way. Also, one pending for Richland. All Chevron funded.

Ellen Farout-Daniels – CA OSPR

As Judd and Bruce mentioned, no direct research funding dollars. She focuses primarily on updates to Applied Response Technologies (ART) section of Best Achievable Technology/Best Achievable Protection (BAT/BAP) report. Also:

- **Dispersant Plan Updates** -- Process-wise: don't anticipate many changes. Our plan does not have pre-approval for subsea use Previous net environmental benefit analysis planning did not cover this. Sustained surface use also not preapproved.
- **Abalone dispersant affects** –there may be some research going on. She's helping pushing folks toward BSEE funding.
- **Floating dispersants** One new dispersant still in developmental stages by U. Southern Mississippi is lecithin-based, purported to not stick to feather or fur. Still needs some toxicity testing. Some uses of loose sorbent materials, such as to reduce contact stickiness of oil on wetland vegetation , also under exploration – not reviewed or approved by RRT IX yet. Other oil spill cleanup agents, such as loose solidifier products, could be explored for their ability to uses to confine edges of a spill to help with containment for in-situ burning.
- **2015 Response technology workshop.** Dates to be announced. Will be held in San Ramon Chevron site.
- **DTOX**– A new dispersant toxicity database that contains all the scientific information we know about dispersants. Funded by NOAA and CRRC (Coastal Response Research Center), Adriana Bejarano of Research Planning, Inc. (RPI) the lead. Searchable one-stop source for currently available literature on dispersant toxicity. Different types of studies, tests, literature cited, product types, etc.
- **Dispersant Toxicity** - Below is the point of contact for the dispersant toxicity (DTox) database that Adriana Bejarano has helped put together, she said to be ready mid-Jan or so to a short-list of folks. Don't know who is on her list, or who she would like to have added. The database is on Filemaker, and she said she had only a limited number of copies she was authorized to distribute.

Adriana C. Bejarano, PhD

Research Planning, Inc.

1121 Park Street

Columbia, SC 29201

Telephone: 803-254-0278 x 328

Website: www.researchplanning.com

Sonja Larson, WA Dept. of Ecology

We have no money for R&D— WA State R&D is still rules and drills.

- State law requires **Best Achievable Protection/Best Available Technology** review and rule updates every five years. First year under this structure focused on updating the contingency planning rule. Updated rule became effective January of

2013. Implementing the updated rule this past year and initiating BAP review (still researching how to structure our technology assessment process)

- Working with the USCG at district level locally in Seattle to schedule an **Ad hoc equipment workgroup** first quarter 2014. This one-two day event will invite researchers and manufacturers to present their response tools. This has been conducted in the past but not for several years.
- This past year the NWACP convened a workgroup to look at **emerging risk from changing oil transportation** modes and oil types. The task force identified submerged oil and inland response as areas for research. The Ad Hoc workgroup will specifically solicit response tools for these topics.

Working on a few technical projects that may be of interest to the group:

- **Response Equipment mapping—based on WRRL**
 - Created a web based equipment map that allows the responders, public and other agencies to view where equipment is located. Map is compatible with phones and tablets.
 - The equipment map is based on the Western Response Resource List (WRRL) and contains information on equipment location, equipment type (based on the WRRL), a link to a picture of the equipment, and a variety of other information. The map defaults to only show Primary Response Contractor equipment but includes layers for the Ecology granted boom trailers, Local and Regional Navy equipment, USCG District 13 equipment, and Western Canada Marine Response Corporation equipment. You can turn layers on/off by clicking on the “Content” tab and selecting which layers you would like to view.
- **Equipment surging model.** The model is based on the equipment locations as depicted on the WRRL. The GIS based model allows us to move equipment via land or water to demonstrate compliance with the equipment planning standards. We also planning to use this to determine key equipment that would require backfill if moved out of region to support a large spill response. A poster describing the model will be presented at the IOSC.
- **Pipeline contingency plan rule update:** Developing tools to better understand the operating environments of our pipelines and using GIS to identify the appropriate response equipment for those operating environments a pipeline crosses.
 - Current planning standard requires boom, storage and recovery exactly as you would for a marine terminal but this isn’t appropriate for many of the operating environments pipelines cross
- **Technology workshop in WA** - Would like to put together a NW technology workshop focused on ways to evaluate technology – what works, what doesn’t.

Lori Medley - BSEE

BSEE's Oil Spill Response Division has 6 full time staff now. Fully dedicated to oil spill response and planning research efforts. Funding \$10M year in research.

- **Ohmsett facility** -- In 2013, 92% of the time the tank was available, the facility was utilized. Received an additional \$4M in funding to mitigate future storm damage.

2012-2013 project highlights:

- **EDRC Project** – looked at EDRC capacity, came up with a new system called ERSP (Effective Recovery System Potential). May require that additional response equipment be made available . May make it into a regulatory rewrite. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project-673/>
- **2011 Oil droplet size ultrasound** -- Can measure oil droplet size pretty well. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project-697/> **Subsea** oil has gas bubbles, so added a gas bubble variable in the 2012/13 phase. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1002/>

2013 –funded 12 new projects:

- **Woods Hole sensor package** to mount on an ROV to detect/map/measure oil in and/or under ice. Was out on Arctic Shield in 2013 and learned a lot. Will go off shore in Prudhoe Bay in 2014. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1000/>
- **Ohmsett** – 10 skimmer tests. 30% and 70% ice concentration. Final report info in on their website. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1014/>

In 2014, 20 new funded projects – a few examples:

- **Permitting the Use of Oil Spill Simulants:** Identifying Options and Building Consensus. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1032/>
- **Testing of Skimmer Hoses and Hose Couplings Under Simulated Arctic Conditions** <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1026/>
- **Estimating an Oil Spill Response Gap for the U.S. Arctic Ocean.** Meteorological factors that make it impossible to responds to oil spill. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1022/>

- **Cold Water Dispersants Efficacy Comparison:** After DWH, a lot of law suits on Corexit 9500 so BSEE will test 4 different products in cold water; Corexit 9500, Finasol OSR 52, Dispersit SPC 1000, and ZI 400.
- **Environmentally Benign Oil Simulants** to Mimic the Behavior of Oil Droplets in the Ocean – traditional simulants used are peat moss, oranges, fluorescent dyes, etc. Developing new environmentally benign simulant.
<http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1029/>

Question: Doug M: Is there any chance of any opportunities of on-water testing with oil ? *Response:* Lori wrote up a paper to do a study – no valid research proposals received.

Question: What are the four dispersants you are testing?

Response: Corexit 9500, Finasol OSR 52, Dispersit SPC 1000, ZI Chemicals (ZI 400) 1:20 ratio, on Alaska North Slope pipeline oil

Don Petit, Oregon DEQ

- **Bakken Crude** -- Just prepared a synthesis of emerging risks of all the products coming into the area: coal, Bakken crude and oil sands material. Monitoring this closely. New info coming out every week. Thinking about how to respond, identify the key safety issues.
- **Columbia River Geographic Response Plan** -- We've been working with WA on updating the Col River BRP. Burlington Northern RR has been incorporating the plans.
- **Northwest Area Committee Task Forces** – Several Task Forces formed in the Northwest Area Committee (NWAC). The NWAC just had a summit last month to start planning for this year. Lots of task forces getting started to get working on particular topics including:
 - SCAT data and Operation Management Chapter. New resource completed by one of the NW Area Committee task forces, based on lessons learned from DWH and Yellowstone River response. Jose Clark performed a lot of heavy lifting on this.
 - In situ burning –The NW Area Committee In-Situ Burning Task Force is completing work to update relevant NWACP chapters and develop tools to assist in planning/authorizing/documenting the process of incorporating into a response.
- **GIS data updates** -- DEQ's single largest project is to update our GIS data for all response. Grant from Oregon state's GIS agency to do that work. Will fund about 18 months of effort. Key notable; all data will have good metadata for the first time. Emphasis is on good data. Separate Pilot project to locate every private drinking water well in the state.

- **Building response tools** – more connected with this group. Aligned with his job – to support spill response with tools. Just completed Shorezone data acquisition for the entire state. (Now available from OR Dept. of Fish and Wildlife) Wrapping up this spring. Put to the new NOAA continually updated shoreline product (CUSP) this spring. Looking to leverage the Shorezone data in efforts such as POR Tool development and SCAT shoreline pre-segmentation efforts. Eventually to be incorporated into updated GRPs and PNW ERMA.

Kurt Hansen - USCG

Working with the Coast Guard in Seattle to set up an ad-hoc equipment group.

Emerging Risks Task Force:

- Submerged oil recovery techniques
- In situ burning.

Other projects:

- **Recovery of submerged oils** – link to report that was completed in August. (
- **Response to oil on ice** – lots of work done in Great Lakes.
- **Temporary storage** – control of ice around skimmers, personal protection, etc. Cold conditions, etc. Come up with a federal on-scene coordinator. Guide.
- **Oil in water column testing** – dispersant testing. Multi-beam sonar and other design to utilize light scattering. (BSEE funded) If oil in water column, what can be done about it? Diversion, collection, etc.
- **Evaluation of Special Monitoring of Alternative Response Technologies (SMART) Protocol** – Evaluating current procedures and technologies based on Deepwater Horizon experiences.
- **Arctic Shield 2013** – stand alone ERMA up and running in Arctic. Testing for application in isolated areas.

Question: For Smart protocols, are you looking at using different instrumentation? Methods and incorporating that into SMART? No looking at what worked what didn't. Stand up distance of almost 2 miles.

Question: Will the SMART report include information on the effectiveness?

Response: No toxicity, only effectiveness. To do toxicity, need to know the condition of what's out there, a whole additional level of effort.

Ellen: In CA, we're talking about dispersed oil– what elements should be saved and updated. We should at least be able to collect water samples outside the slick and below the slick to be evaluated later. 3-D spread – some thing we've based on plans on. NOAA want's SMART to focus on effectiveness, but CA is trimming.

Bill Vocke, USCG

Reported on the activities of the Interagency Coordinating Committee on Oil Pollution Research (ICCOPR) -- ICCOPR is in process of updating its Oil Pollution Research & Technology Plan (first update since the 1997 was issued). In the fall, the University of New Hampshire conducted a survey of about 280 subject matter experts to help set priorities for about 550 research needs listed identified in 23 Standing Research Areas. ICCOPR will meet in Mid-March to discuss the priorities. The updated R&T Plan will be released in the middle of 2014.

Carl Brown, Environment Canada

Busy research year: **Oil sands, diluted bitumen** – still at topic of conversation. Provided comments on the Enbridge pipeline debate this year.

- **Diluted bitumen** research funding: will be doing a fair bit of research on physical and chemical properties of oil sands products. Oil/sediment interactions; fate and behaviour, shoreline studies; updating spill models; looking at spill counter measures (dispersant effectiveness, shoreline treating agent effectiveness).
- **Oil sediment interaction** for McKenzie River sediments and Beaufort Sea oils. Funded by the Environmental Studies Research Fund (ESRF).
Arctic oils -- Collaborative work with NOAA. Still have some historical Beaufort oil samples – reanalyzing using improved capabilities.
- **Unmanned Aerial Systems and Unmanned Underwater Vehicles** - Involved wherever possible with these studies (with NOAA).
- NOAA to update **Spill Modeling software** (Updating GNOME and ADIOS) – working group includes EC spill modeler.
- Windows of opportunities for **dispersant use** (with BSEE). Validation of two models developed to predict the window of opportunity for dispersant use in the Gulf of Mexico. Modeling and oil properties, report due end of June 2014).
- **Submergence of heavy oil** -- Working with the Coastal Response Research Center
- Collaborated with Queens University and F&O Canada to look at toxics associated with heavy oils. Three papers coming out in Journal of Environmental Toxicology and Chemistry.
<http://onlinelibrary.wiley.com/doi/10.1002/etc.2497/pdf>,
<http://onlinelibrary.wiley.com/doi/10.1002/etc.2492/pdf>,
<http://onlinelibrary.wiley.com/doi/10.1002/etc.2486/pdf>
- **Oil properties database** – most recently in the form of PDF files of each individual oil. Trying to get this into a machine-readable database so it can be used in applications and the data can be accessed more easily.
- **Bakkan Crude** – Quebec accident - providing scientific support to EC enforcement group.
- **37th Arctic and Marine Oil Spill Program (AMOP) Technical Seminar on Environmental Contamination and Response** will be held this June 3-5, 2014. This

Technical Seminar on Environmental Contamination and Response will be held in Canmore, Alberta. The call for papers just closed but we can accept some late entries from good friends!

<http://www.ec.gc.ca/AMOP/>

Question: Kinder Morgan weathering test – do you know when that report they were putting together will be released? *Answer:* Report has been released - A STUDY OF FATE AND BEHAVIOR OF DILUTED BITUMEN OILS ON MARINE WATERS Dilbit Experiments – Gainford, Alberta by Witt O'Brien's, Polaris Applied Sciences, and Western Canada Marine Response Corporation;

<https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CC0QFjAB&url=https%3A%2F%2Fdocs.neb-one.gc.ca%2Ffile%2Fllisapi.dll%3Ffunc%3DII%26objId%3D2393796%26objAction%3Ddownload%26viewType%3D1&ei=0DzIUvLQBuww2gXZolDYDQ&usg=AFQjCNGo3aLwqk91mW-da5zrHa8CVyOeYQ&bvm=bv.59930103,d.b2I>

Question: The Comparison of Bakkan crude with other oils by POLARIS – did Kinder Morgan contract this work? *Answer:* Not sure about the sources of funding for this report? Perhaps the Washington State workshop:

http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&cad=rja&ved=0CEAQFjAC&url=http%3A%2F%2Fwww.ecy.wa.gov%2Fprograms%2Fspills%2Fstudies_reports%2FOilSandsProductsWorkshopReport_Washington%2520TOTAL.pdf&ei=CT7IUpC5EqTu2wWCiYD4Dw&usg=AFQjCNE1tHcPSFkj-WwTNPJLBep4fS3Gow&bvm=bv.59930103,d.b2I

ADDITIONAL RESOURCES

- Kurt: **After DWH** –reports are showing up on the website. Many recommendations – some work on in situ burning. <http://www.api.org/oil-and-natural-gas-overview/exploration-and-production/offshore/api-joint-industry-task-force-reports>.
- Ellen: **NOAA's website** has monitoring data sets from DWH that are linked within the story. http://www.noaanews.noaa.gov/stories2013/20130912_dwh.html
- Kurt: Referred to **UW CRRC website**. Two workshops. Participants a wide range of information on this topic. Lots of presentations and reports.
-Oil Sands Workshops - Look for the Oil Sands products (2 workshops) University of New Hampshire: <http://www.crrc.unh.edu/workshops>

Also see WA Ecology's website for more information on the Washington Oils Sands Workshop held in April 2013:

http://www.ecy.wa.gov/programs/spills/studies_reports/OilSandsProductsWorkshopReport_Washington%20TOTAL.pdf

- Ellen: **Dispersant study from BP** (see attached PDF)

- Don Pettit: **UWA Students** – looking at a larger product oil sands issues. Amazing how many of these documents came out right after we finished up our task on emerging risks from oil sands products.
- **DWH report** – called for several dozen action items that needed to be followed up on.

Question: Is there a point contact at Coast Guard who's working on some of these things? Proposed changes? *Response:* Most of the info is captured in Area Contingency Plan updates. Individual RRT and areas tracked this in their own areas.

API: Here is the link to the page that houses the OGP-IPIECA OSR JIP materials:
<http://oilspillresponseproject.org/completed-products>

- The **Oil Spill Recovery Institute** funds research related to understanding the effects of, and responding to, oil spill in marine waters. Our focus is in the Arctic and Subarctic. We have funding available to improve spill response technology and always seem to have a difficult time finding projects. If your R&D group has ideas that they would like addressed I would be interested in seeing them.

For more info contact:
 W. Scott Pegau
 OSRI Research Program Manager
 Box 705 (mailing)
 300 Breakwater Ave (physical)
 Cordova, AK 99574
 907-424-5800 x222

- The **BSEE Oil Spill Response Division's** first Broad Agency Announcement for FY 2014 has been published on FedBizOpps.gov as Solicitation E14PS00011.
 Here is the direct link;
https://www.fbo.gov/index?s=opportunity&mode=form&id=127bba24b2c61199270ae09dface530f&tab=core&_cview=0