

# Chemical Dispersants and In-Situ Burning



# National Contingency Plan Subpart J Provisions

- Regional Response Teams (RRTs) and Area Committees address dispersant, and other chemical or bioremediation agent use through planning processes.
- RRTs may authorize dispersant use upon request from an OSC with concurrence of representatives from EPA and applicable State agencies, and in consultation with Natural Resource Trustees (DOC and DOI).



# National Contingency Plan Subpart J Provisions (cont)

- RRTs may preauthorize dispersant use by OSCs upon request from an Area Committee, with concurrence of representatives from EPA, applicable State agencies, and Natural Resource Trustees (DOC and DOI).
- OSCs may use dispersants at any time when necessary to protect human health



# National Contingency Plan Subpart J Provisions (cont)

- EPA maintains a list of dispersants, and other chemical or bioremediation agents that may be used (Product Schedule).
- Listing on the Product Schedule requires efficacy and toxicity testing, and submission of technical product data



# The Deepwater Horizon: Impact on Dispersant Use Policies



UNITED STATES



ENVIRONMENTAL PROTECTION AGENCY

# Event on April 20, 2010



# Unique Aspects of Environmental Response

- Unprecedented continuous deep sea oil discharge
- Unprecedented subsurface use of dispersants
- Unprecedented geographic scope
- Continuous surface and subsurface use of dispersants
- Unprecedented use of In-Situ Burning



# Dispersant applications in U.S.A. GOM since the 1989 *Exxon Valdez* Oil Spill:

- (Passage of OPA 90)
- T/V Mega Borg 1990 (Dispersant Test Only)
- West Cameron Block 168 Oil Spill 1995
- High Island Pipeline System Spill 1998
- T/V Red Seagull 1998
- BP-Chevron Pipeline 1999
- Blue Master 1999
- Poseidon Pipeline 2000
- Main Pass 69 Oil Spill 2004
- Shell Pipeline Ship Shoal Block 142: JUL 2009
- Galveston ENDEAVOR VS M/T KRYMSK: Oct 2009
- Deep Water Horizon: GOM Block: MC-252 - April 2010





# In-Situ Burns Conducted in U.S.A. GOM

- First Response use: Deep Water Horizon: GOM Block: MC-252 - April 2010



# Dispersant Usage

- Dispersants applied:
  - 976,237 gallons (aerial)
  - 96,277 gallons (surface)
  - 771,272 gallons (subsea)
- Total: 1,843,786 gallons



# In Situ Burns



- ◆ Controlled burns conducted: 411
  - » Total bbls burned: 265,450 bbls.

# Impact of the DWH Response on Dispersant Use Policies

The poster features a blue background with a white double-line border at the top. The NRT logo is in the top right corner. The main title is in a large, bold, white font. Below the title is the date. The location information is in a smaller white font. The background image shows a white aircraft flying over the ocean, releasing a large plume of white dispersant. The bottom of the poster has a dark blue background with white text for RSVP information.

**NRT**

***NRT-RRR Dispersant  
Conference***

**February 23, 2011**

EPA Headquarters  
Potomac Yards Office  
2777 South Crystal Drive  
One Potomac Yards  
Arlington, VA 22202  
First Floor Conference Center

RSVP to [faulkner.mike@epa.gov](mailto:faulkner.mike@epa.gov) and [michael\\_lengle@sra.com](mailto:michael_lengle@sra.com)  
Questions should be submitted to [faulkner.mike@epa.gov](mailto:faulkner.mike@epa.gov)



# **NRT Guidance to Regional Response Team Co-Chairs, Dec 16, 2010**

- When Revising RCPs and ACPs, consider:
  - Hierarchies
  - Site Specific Rationale
  - Limitations on Pre-Authorization
  - Subsea Dispersants
  - SMART Protocols
  - Transparency
  - Endangered Species Protection



# NRT Committee Actions

- NCP Subpart J Workgroup – will address dispersant listing requirements
- Subsea Dispersant Workgroup developed to:
  - Review DWH subsea dispersant monitoring and application practices
  - Develop guidance for subsea dispersant use



# Interim Guidance Highlights

- Significantly influenced by Dispersant Monitoring and Assessment Directive, Addenda 1, 2, and 4.
- *Monitoring and sampling resources are expected to be on location, operational, and manned before subsea application of dispersants commences*
- *The Subsea Dispersant Application Monitoring Plan should ...include Sediment Sampling and Monitoring, Water Sampling and Monitoring, and Airborne Volatile Organic Compound (VOC) Assessment*



# Interim Guidance Highlights (cont)

- Sampling plans are intended to be developed and implemented by the Responsible Party
- Includes acute (ie. Rototox) and sublethal toxicity testing requirements (RP may substitute an alternative ecotoxicity plan).
- Data reporting to FOSC within 24 hrs of collection





# Interim Guidance Highlights (cont)

- Requires operational shutdown criteria (ie. D.O. reduction  $> 2$  mg/L or excessive toxicity)
- Quality Assurance Project Plan (QAPP)



# **EPA Region 6 Interim policy on Dispersant Use (Letter to BOEMRE\*, March 28, 2011)**

*\*BOEMRE - Bureau of Ocean Energy  
management, Regulation, and Enforcement*

Dispersants may be applied to surface spills that are continuous and uncontrollable in nature, but the Federal On-Scene Coordinator (FOSC) should convene an incident specific RRT meeting as soon as is practical, and not to exceed 5 days after initiation of dispersant application.



# **EPA Region 6 Interim policy on Dispersant Use (Letter to BOEMRE, March 28, 2011)**

Subsurface dispersant use may be approved for spills on an incident specific basis as requested by the FOSC.

Incident specific monitoring shall be developed consistent with the DWH Subsurface Dispersant Directive and Addendum 1.

<http://www.epa.gov/bpspill/dispersants/subsurface-dispersant-directive-final.pdf>



# Other regulations / guidance

- Bureau of Ocean Energy management, Regulation, and Enforcement (BOEMRE)
  - Notice to lessees clarifies acceptance of subsurface dispersant application as a valid response measure for responding to worst case discharges for certain offshore wells



# Petroleum Industry Response

- API Subsea Dispersant Joint Industry Task Force
  - Research and development of subsea dispersant injection technologies
  - \$12 million to be invested
- Marine Well Containment Corporation
  - Supported by 10 major exploration and production corporations in GOM
  - subsurface containment, as well as dispersant injection.
  - \$1 billion invested



# Conclusions

- Subsurface dispersant injection will probably continue to evolve as an accepted response tool.
- Area and Regional Contingency Plans will be modified to address scenarios such as the DWH spill.
- Dispersant Listing requirement changes will encourage development of safer, more effective dispersants.



# DWH Aerostat Sampling Mission (aka. Dioxin Cruise)



UNITED STATES



ENVIRONMENTAL PROTECTION AGENCY

**Mission: Sample this smoke! (safely)**





# Method: Aerostat Balloon



# CO2 Activated Automatic Sampler



# Balloon Inflation aboard the MV Allison



# Single Tether Deployment



# Insertion into Plume



# Altitude Control via Electric Winch



# Immersed and Sampling!



# Maneuvering Challenges





# Close Working Conditions



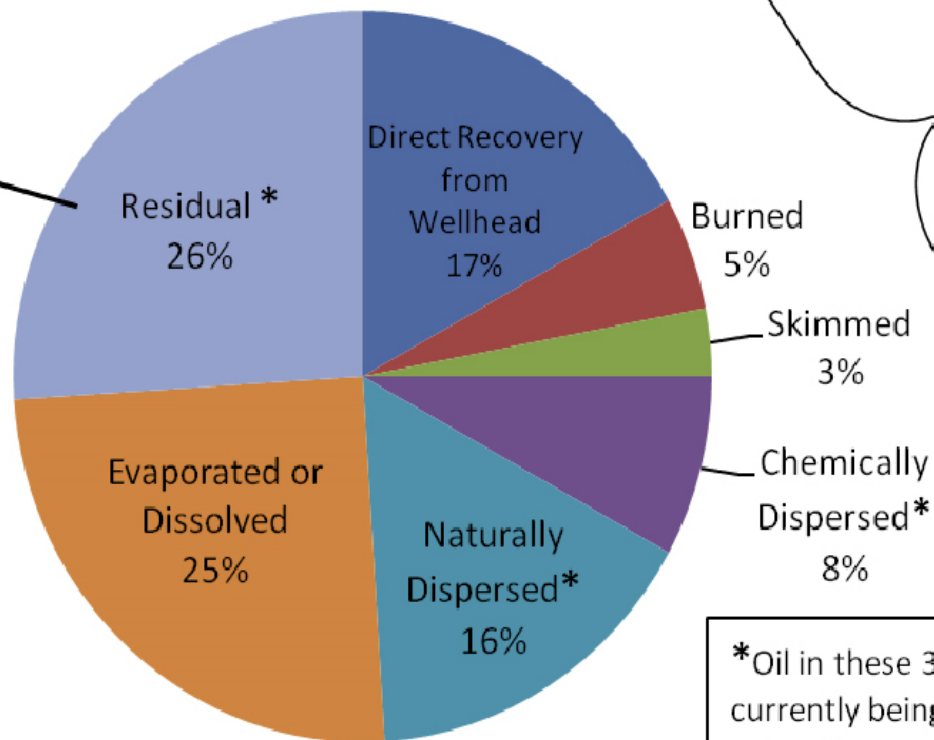
# Mission Complete



# Deepwater Horizon Oil Budget

Based on estimated release of 4.9m barrels of oil

Residual includes oil that is on or just below the surface as light sheen and weathered tar balls, has washed ashore or been collected from the shore, or is buried in sand and sediments.



Unified Command Response Operations

\*Oil in these 3 categories is currently being degraded naturally.

