- Tell the people what DMMO does (or, “WHY IS ROB HERE TODAY?”).

-Incident happened early November 2007. 58,000 gallons bunker oil, largest oil spill in SF Bay in over15 years.

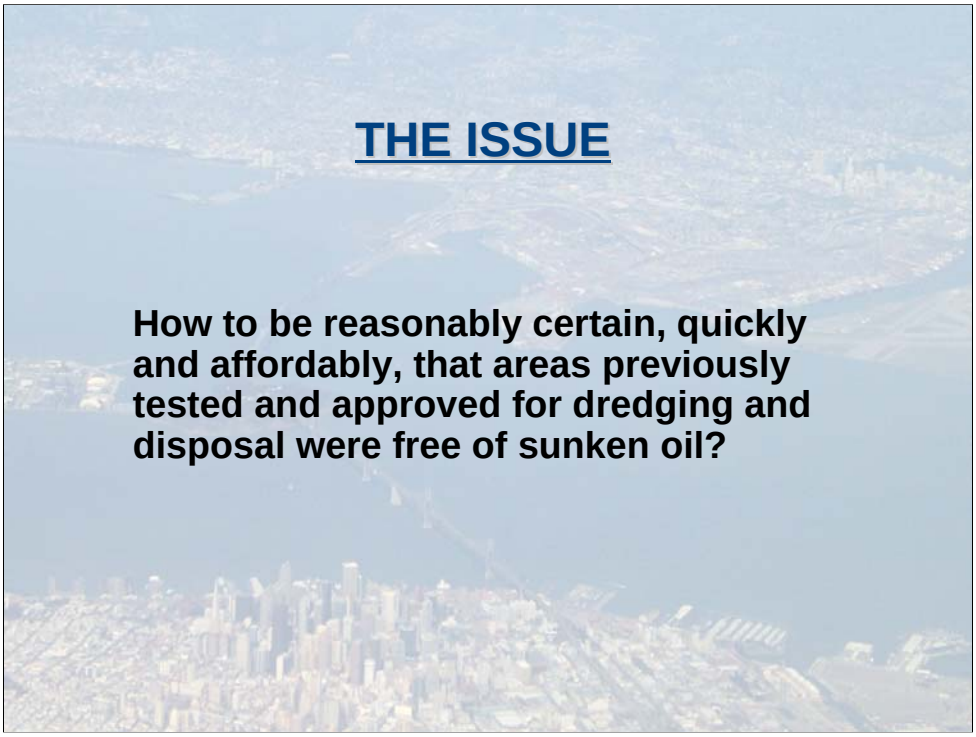
--Initial response focused on floating oil, oiled wildlife, and shorelines. Did not concern itself with whether oil might later make its way to sediments, by any particular mechanism.

- USACE and DMMO contacted ERDC early on to see how the concern about submerged oil may have been addressed on other spills, if at all. They had no direct experience, but did have suggestions about possible ways to do sampling (including both chemical measurements, or simpler presence/absence surveys.

THE PROBLEM

- Literature information on *raw product* indicated little likelihood that the oil would sink
- However, concern remained for oil, tarballs, etc. to entrain sediment and other debris *after* contact with shorelines (incl. during cleanup), re-enter the water column and sink
- If oil sank and settled in nearby channels, berths, and marina basins, dredging with aquatic disposal could not go forward until the oil was remediated
- Most dredging projects had work “windows” that closed November 30 - so delay waiting for cleanup to be completed could affect navigation safety and commerce

Note that windows are to protect endangered species…



At first we consulted with ERDC. Lots of ideas were discussed, but no one knew what to do for a rapid and inexpensive approach.

One project (Belvedere, shallow water) took discrete surface sediment grab samples for visual/odor analysis.

But then we heard about another method, used in Delaware…

Idea taken from Delaware oil spill (date?)

I’M NOW GOING TO BRIEFLY DESCRIBE HOW WE PERFORMED PRESENSE/ABSENCE SURVEYS USING AN ARRAY OF TOWED “POMPONS”, FOR TWO DREDGING PROJECTS IN THE SPILL AREA

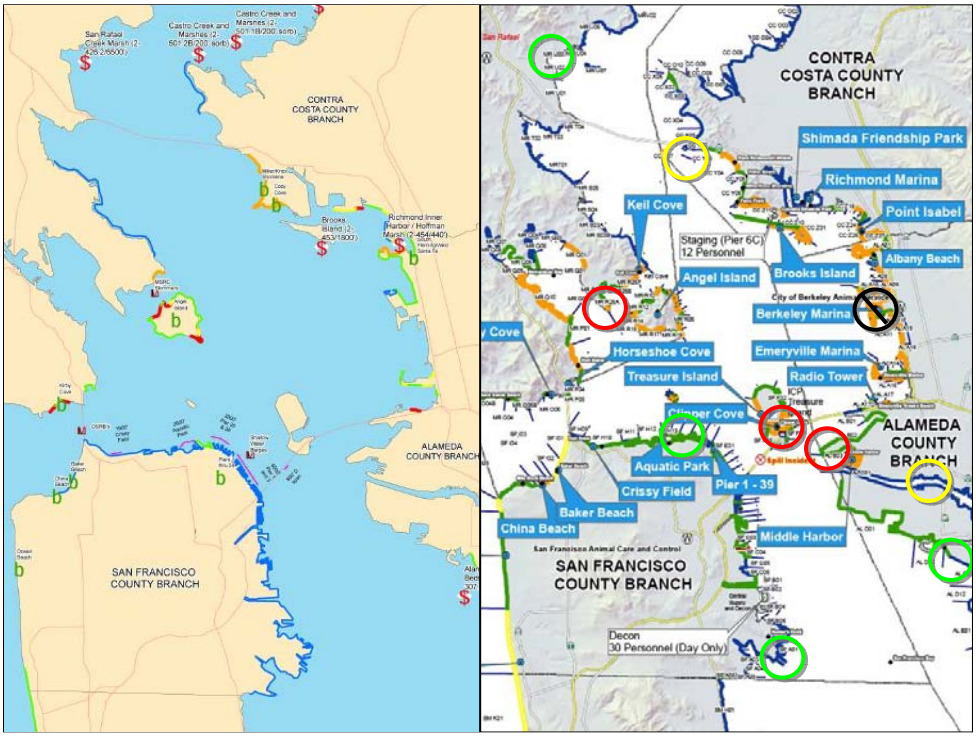
(Briefly describe what the swabbing consisted of)

Note, method also used in some areas by Unified Command (USCG, NOAA, CDFG, State Parks)

THE APPROACH

Dredging projects adjacent to oiled shorelines were the primary focus. The DMMO agencies established a hierarchy for the spill area:

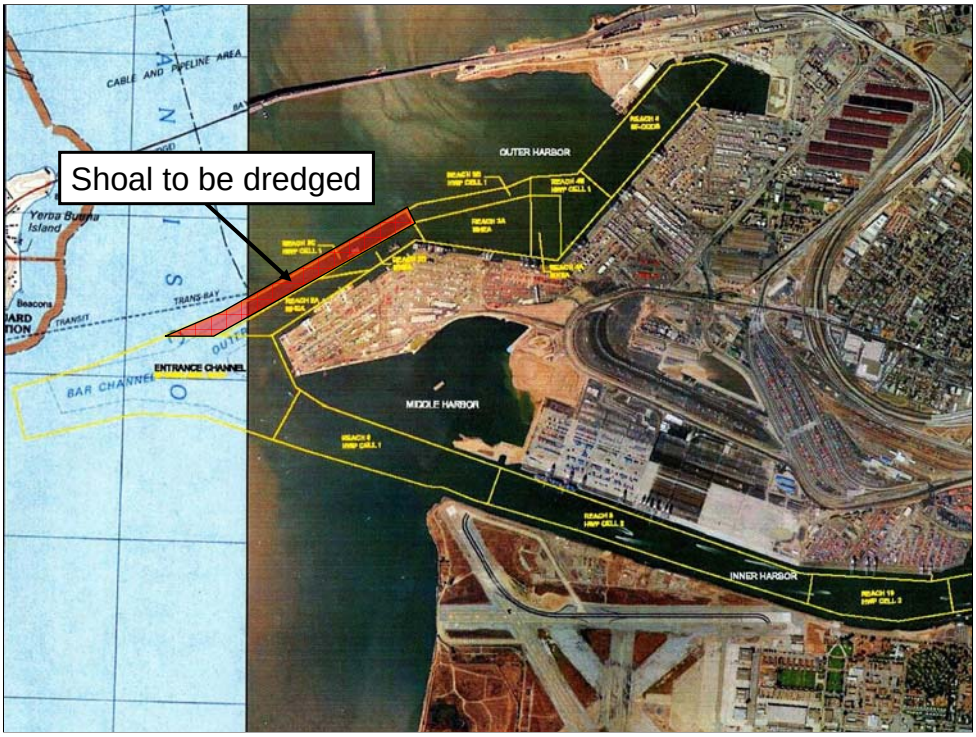
1. **Projects outside spill area or with appropriate upland disposal:**
   - **Proceed as permitted**
2. **Projects in spill area not immediately adjacent to oiled shorelines:**
   - **Proceed with observers: stop dredging if sheen seen**
3. **Projects immediately adjacent to oiled shorelines:**
   - **Proceed with observers only after a presence/absence survey**
   - **Any indication of oil would trigger more intensive evaluation**
4. **Certain other projects in the spill area had to wait for following year**



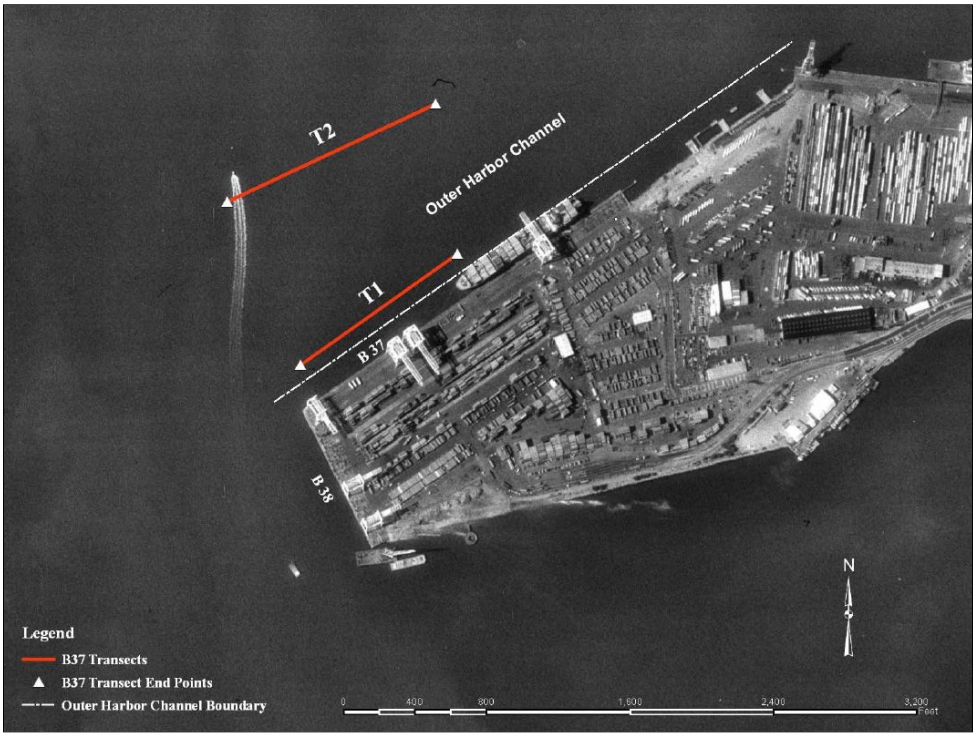
First map - Nov 5, 2007. Blue is No Oil Observed, green = very light, yellow = light, orange = moderate, red = heavy

Second map - Dec 5, 2007. Orange = areas still being treated, green = oiled but no longer being treated (cleaned up), yellow = being monitored, blue = no oil observed

NOTE – need spill and cleanup info from responders in order to do dredging planning. Communication with them can be difficult – need to establish contacts ahead of time.



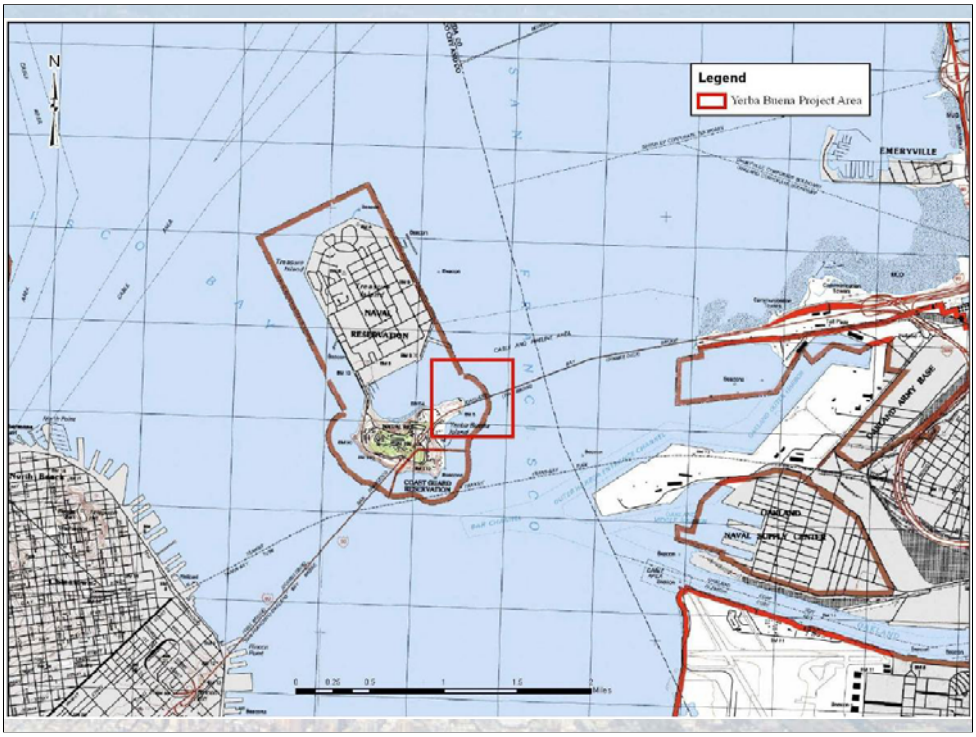
First, the Port of Oakland Outer Harbor Channel project



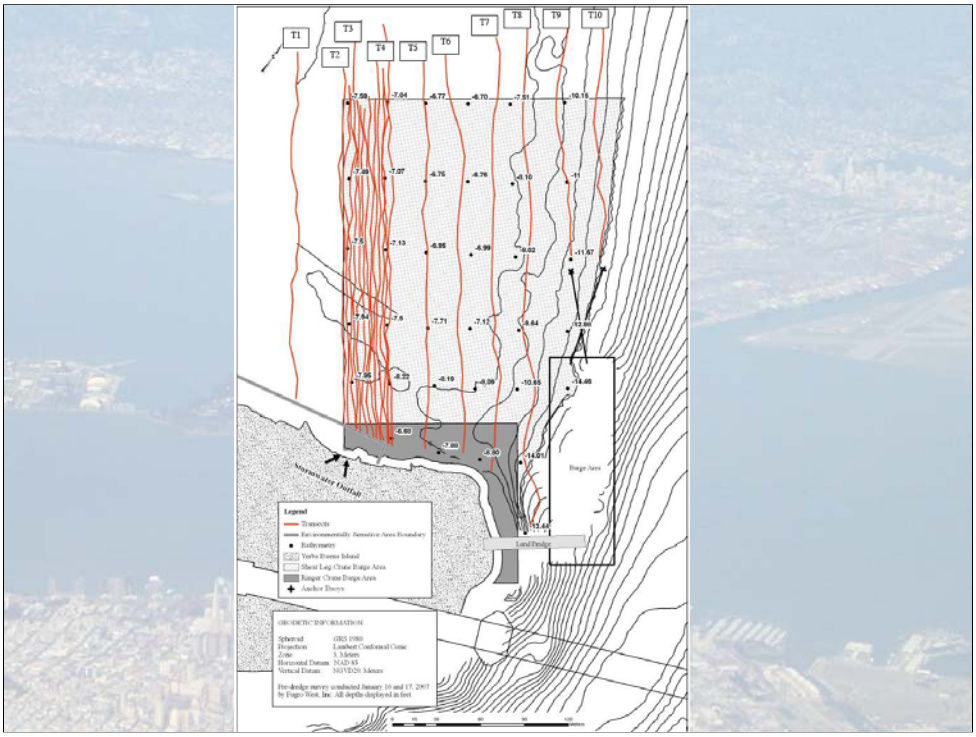
Some oil on pilings along wharf. Dredging nearshore already done, but shoal offshore still to be dredged.

Transects along wharf face, and at toe of shoal to ID whether any sunken oil might have moved or collected at dredge area.

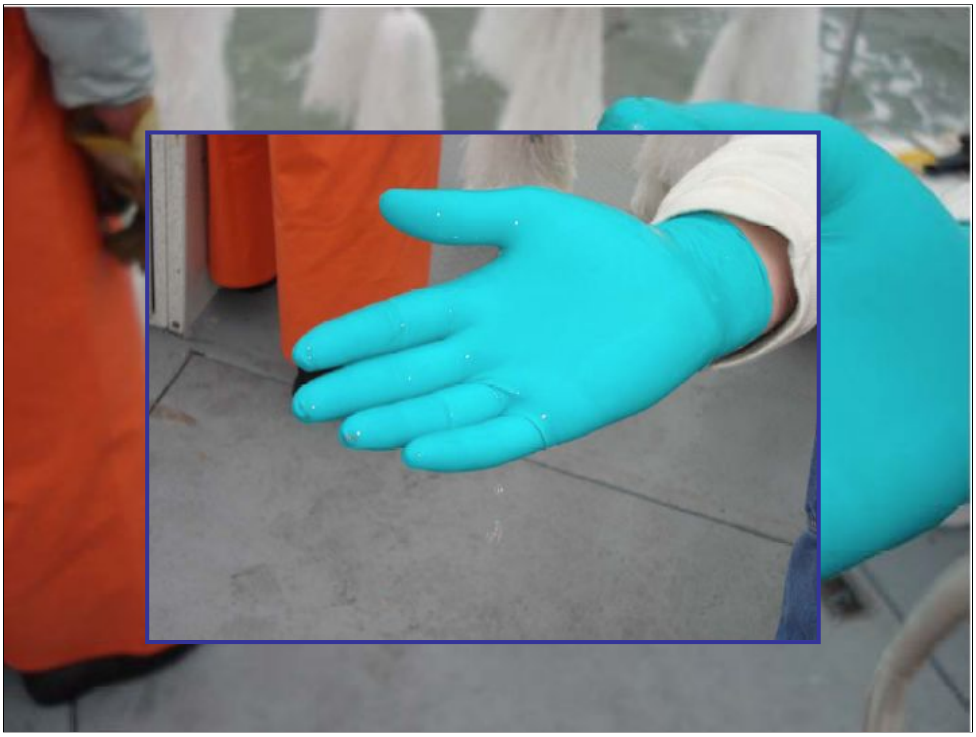
(Sediment going to wetland restoration project)



CalTrans Bay Bridge project, Yerba Buena Island. Moderate shoreline oil in this area.



CalTrans project, detail of transects



CONCLUSIONS

- ✓Pom poms indicated no submerged oil near dredging operations in Oakland Harbor (deep water) or at Yerba Buena Island (mid-depths), and grab samples at Belvedere (shallow) also indicated no oil
- ✓Unified Command found no submerged oil using pom poms in shallow water areas near several oiled shorelines
- ✓The next Spring, following cleanup, DMMO required additional chemical analysis in one high-concern area (Berkeley Marina), and found no indication of submerged oil

After # 1: The DMMO approach did <u>not</u> suggest that the entire Bay bottom was free of tar balls or other oil product – only that those areas sampled were determined to be free of oil at the time of dredging

After # 3: After this, DMMO determined that normal sampling and testing procedures would be adequate for future dredging and disposal decisions.

LESSONS LEARNED

- ✓ **Plan ahead! Especially with environmental windows, need to make dredging decisions quickly**
  - **Establish contacts with responders ahead of time**
  - **Public will expect some assurance re dredging**
  - **Need check for "reason to believe"; not "certainty"**
- ✓ **The "pom pom" approach seems to be a reasonable method for doing benthic presence/absence surveys in dredging areas**
  - **Quick: no waiting for analytical results**
  - **Reasonably affordable**
- ✓ **Responders on future spills should consider the possibility of sunken oil, both during and after shoreline cleanups, especially near dredging areas**

Lesson 1: not just for oil spills!

Our spill: Windows closing and needed to make rapid decisions or (a) risk ESA impacts, (b) shut down dredging and effect commerce for several months perhaps unnecessarily

Dredged Material
Management Office

QUESTIONS?