

**MEETING MINUTES
RESTORATION ADVISORY BOARD
NAVAL STATION TREASURE ISLAND
17 April 2007
Meeting Number 129**

Community Restoration Advisory Board (RAB) Members in attendance:

John Gee, Alice Pilram, Dale Smith

Regulatory Agency, City of San Francisco (City), and U.S. Department of the Navy (Navy) RAB Members in attendance:

Agnes Farres (Regional Water Quality Control Board [Water Board]), James Sullivan (Navy), Henry Wong (Department of Toxic Substances [DTSC])

Other Navy Staff and Consultant Representatives in attendance:

Scott Anderson (Navy), Pam Baur (Sullivan International Consulting Group), Pete Bourgeois, (Shaw Environment and Infrastructure [Shaw]), Tommie Jean Damrel (Tetra Tech EM Inc. [Tetra Tech]), Kevin Hoch (Tetra Tech), Charles Perry (Navy), Marcie Rash (Tetra Tech)

Public Guests

Tom Gandesbery (Piedmont resident), Christopher Grasteit (Treasure Island [TI] Resident), Reggie Hairston (John Stewart Company), Jerold (no affiliation listed), Jeff Kline (TI Resident), Kara Lander (TI Resident), Loraine Lee (John Stewart Company), Fatima Manego (TI Resident), Sophia Warn (TI resident)

Welcome Remarks and Introductions

James Sullivan (Base Realignment and Closure [BRAC] Environmental Coordinator [BEC]) opened the 17 April 2007 meeting at 7:01 P.M. at the Casa de la Vista (Building 271).

Mr. Sullivan welcomed those in attendance, and pointed out extra copies of the meeting agenda at the back of the room. Mr. Sullivan asked attendees without name placards to be sure to introduce themselves by name and affiliation when speaking for the purpose of the transcript of the meeting. He also requested that participants speak one at a time, and slowly enough so comments and questions could be captured accurately for the transcript and meeting minutes. Mr. Sullivan then asked for changes or comments on the agenda. No changes were requested.

Public Comment and Announcements

Mr. Sullivan stated two public comment periods were included on the agenda to afford members of the public an opportunity to comment on the Navy's environmental program at TI, one at the start of the meeting and one near the end. He added that the public was also welcome to comment or ask questions during the course of the meeting. No comments or announcements were presented.

Site 12 (TI Housing) Removal Action Update (Included Other Field Activities)

Mr. Sullivan introduced Pete Bourgeois (Shaw). Mr. Bourgeois provided the field activities update for Site 12 as well as a brief update on other site activities.

Mr. Bourgeois stated Shaw began baseline sampling at Site 21, the Treasure Island Sailing Center, and Site 24, the former Dry Cleaning Facility (at Building 99 and including the Building 96 area). Shaw may need to install additional wells, but will need to collect additional samples at both sites to fill in data gaps.

Mr. Bourgeois stated the rest of the field efforts are concentrated at Site 12, the Housing Area. Recent work included establishing ambient radiological levels for TI by screening soil in a non-impacted area of Site 12 with Detector Array Rack Towed (DART) equipment (proprietary equipment provided by Shaw's subcontractor New World Technology). The DART survey was conducted in a park by the Avenue of the Palms near the entrance to Perimeter Road. This area was selected because there was never any industrial activity there; it was a park for most of its history and best represented the geology of the soil found in the three SWDAs. Mr. Bourgeois explained the DART has 12 arrays in a rack surrounded by protective polyvinyl chloride pipe. The DART has global positioning system software and takes a radiological count of the area while being towed. It allows the team to survey about 2 acres per day. The background levels established were 4,000 to 5,000 counts per minute, and 0.692 picocuries per gram.

In addition to the ambient radiological survey, Mr. Bourgeois stated Shaw completed air sampling to establish background levels for polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons, and lead. These are contaminants of potential concern in the Solid Waste Disposal Areas (SWDA) in Site 12. To conduct the air sampling, Shaw took air readings both upwind and downwind in three areas where excavation activities were planned. Mr. Bourgeois stated all sample results were non-detect, and Shaw will collect additional air samples during the first 4 days of the excavation and again when the excavation is complete.

Mr. Bourgeois noted the original scope of work for Shaw required DART screening of 50 percent of each SWDA, identified as Areas 1207/1209, 1231/1233,

and A/B. That would amount to collection of 16 samples for each lift (a lift is each 1 foot depth of soil) in a random grid pattern. However, during initial screening, some items with elevated counts were detected with the DART. After lab analysis, those anomalous items were identified as small, glass-like items with Radium-226 readings (Mr. Bourgeois showed the group a photo of the detected objects.) Mr. Bourgeois explained that the readings currently found were similar to a level one would get from a home smoke detector. Because of the anomalies, the scope of the work for Shaw was expanded to include conducting a Class I MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual) Survey. This means conducting DART screening of 100 percent of each SWDA, which is 32 samples per SWDA (16 per MARSSIM area) for each one foot lift. Mr. Bourgeois also stated they will collect biased samples in a few of the anomalous areas.

Mr. Bourgeois stated Shaw has cleared concrete, sidewalks, and structures that will be in the way of excavation, which includes removing a carport in front of Building 1207. Actual excavation had not yet started. Mr. Bourgeois stated the plan was to use a mini-excavator in areas where anomalies were found first (referred to as hot spots), and screen all excavated materials. After Shaw has excavated the hot spots, they will use a large excavator and begin the 1 foot excavations. The change in the approach requires Shaw to perform a radiological survey of each excavation bucket before the material is stockpiled or transported off the island. As a result, rather than excavating the three areas concurrently, Mr. Bourgeois stated Shaw will complete them one-at-a-time, which will delay the schedule. All of the concrete slabs were also being screened, and only one slab of concrete had an elevated reading.

John Gee asked what is the source of the radiological material. Mr. Bourgeois stated it could possibly be from an incinerator formerly located where Building 1235 now exists. While there was no dumping of materials from this incinerator, some debris from the incinerator may have been put in the lower elevation locations when the incinerator was demolished. The areas where anomalies have been found included low elevation areas such as within the green fenced area along the lower side of Perimeter Road.

A community member asked what is the radioactive material. Mr. Bourgeois stated it is radium-226. The community member asked for further clarification about the element. Mr. Bourgeois clarified it is a daughter product from the breakdown of radium, and it is the same material one would have found on luminescent dials and glow-in-the-dark watches used around the turn of the 20th century, and up until the 1940s or 1950s. Mr. Bourgeois added it is an alpha emitter, which only accumulates in bone if ingested over a period of time.

There were no further questions, so Mr. Sullivan stated anyone with questions could bring them up later in the meeting, or staff would be around after the meeting to answer individual questions.

Site 12 Housing Area Halyburton Court Indoor Air Technical Memorandum

Mr. Sullivan introduced Kevin Hoch from Tetra Tech. Mr. Hoch provided an update on the Site 12 Halyburton Court Indoor Air Technical Memorandum. Mr. Hoch stated there have been numerous investigations conducted in Halyburton Court and the presentation was a follow-up to previous presentations. Mr. Hoch stated Halyburton Court is in an area within Site 12 where PCBs were found in soil. In 2000, a large excavation was conducted to remove PCB-contaminated soil to a depth of 4 feet. However, the Navy was unable to excavate the soil under buildings. Because of this, there was a concern that PCB vapors could find their way into the buildings and present a risk to human health.

Mr. Hoch stated that indoor air tests have been conducted over several years to determine if there was vapor intrusion into buildings. It was discovered there were some air samples with PCB detections that exceeded U.S. Environmental Protection Agency (EPA) screening goals. As a result, the Navy needed to determine if the concentrations were a result of vapors from the soil under the building, or dust particulates from inside the buildings.

In a phased approach, the Navy collected soil, soil gas, wipe, and indoor air samples. To collect the soil samples, Tetra Tech cored through the building floor slab and base rock to reach the soil. Out of 14 soil samples, six exceeded the EPA screening level, and two exceeded the project screening level of 1 part per million (ppm). The highest level was 1.5 ppm.

Mr. Hoch stated to collect soil gas, a probe was inserted below the building slab to pull air out of the ground. Soil gas analyses indicated there were low concentrations, 1.7 nanograms per cubic meter, relative to a screening level of 3.4 nanograms per cubic meter. Mr. Hoch explained these levels indicated there was no significant source below the building that could result in vapor intrusion at levels that pose a risk to human health.

To find out why the indoor air concentrations were elevated, Tetra Tech went back to the three building units where elevated levels had been detected during previous investigations. Those units were 1100C, 1104B, and 1106A. Tetra Tech cleaned the buildings thoroughly by wet-mopping with an Alconox solution all horizontal surfaces, and using a HEPA, or high-efficiency particulate air vacuum to clean walls, ceiling, floor, and vents. After this initial cleaning, wipe samples of floors and walls were collected, and results indicated PCBs were still present. A second round of cleaning and sampling was conducted, and while concentration levels went down, PCB concentrations were still present. Mr. Hoch stated Tetra

Tech then collected indoor air samples, and the concentrations were significantly lower. However in two of the units, the levels still exceeded screening goals.

Mr. Hoch stated the most recent indoor air sampling followed an adjusted approach to better assess the PCB data results. In addition to drawing air through a polyurethane foam (PUF) cartridge to collect the air sample, a pre-filter was used to remove particulate matter prior to its deposition on the PUF cartridge. Mr. Hoch explained those PCBs associated with volatilization are usually lighter than those found in soil or dust and that the prefilter was tested to assess the presence of PCBs in airborne soil or dust. During this investigation, when analyzing the pre-filter, heavier PCBs that are less likely to volatilize were found. Mr. Hoch stated based on all the information gathered, the Technical Memorandum concludes PCBs are attached to particulate matter, not volatilizing from the soil. The recommendation moving forward is to assess the interior of buildings on Halyburton Court that have previously only been assessed using soil data. In addition, the Technical Memorandum recommends collecting wipe samples in those buildings, and if PCBs are detected, possibly removing tile and other flooring material that may be releasing PCBs.

A community member asked about the source of the PCBs. Mr. Hoch stated the source is unknown; however, the area was used as a storage yard when the housing was being built. Construction material or electrical transformers may have been stored in the area. Mr. Sullivan stated that historical aerial photographs were reviewed and indicated stored material present in the area, which was the basis for the initial investigation. PCBs were found concentrated in one area, which may indicate where the source of the leakage or spill occurred. Mr. Sullivan added that PCBs were commonly used as a less flammable additive to oil used as coolant in electrical equipment. He noted PCBs are no longer used in coolant fluids.

Dale Smith (RAB) asked if the proposal from the Navy is to clean the buildings one more time, then release them for habitation. Mr. Hoch stated there has been no discussion regarding releasing the units for habitation. The goal would be to clean the buildings until there were no detectable levels of PCBs in indoor air, likely by removing flooring.

Annual Groundwater Status Report for Site 12

Mr. Sullivan introduced Pam Baur with Sullivan Consulting Group. Ms. Baur stated the Navy has been monitoring groundwater at Site 12 since the early 1990s, and her presentation would cover the monitoring conducted in 2006. Mr. Sullivan added that groundwater is not used for human consumption at TI and noted drinking water at TI is provided to the City of San Francisco from the Hetch Hetchy Reservoir. Mr. Sullivan stated the water for TI is actually piped over the lower deck of the San Francisco/Oakland Bay Bridge; when driving

along the north side of the lower deck, one can see the 8-inch diameter pipe. He stated there is also a backup line that runs east, to the East Bay Municipal Utility District.

Ms. Baur stated the objective of the groundwater monitoring program is to protect human health from the possibility of vapor intrusion from groundwater (ingestion is not an issue, as noted above) and to protect aquatic organisms in the bay.

Ms. Baur stated there are four areas at Site 12 where groundwater is currently monitored: SWDAs 1207/1209 and A/B, the Building 1311/1313 petroleum area, and the petroleum area on Mariner Drive. Groundwater levels are measured before groundwater sampling to determine the flow of groundwater, which is typically from the center of the island towards the bay. Water-level measurements are taken at low-low tide for wells within 200 feet of the shoreline. Samples from all wells within 200 feet of the shoreline are collected at low-low tide using low flow techniques with bladder pumps.

Ms. Baur stated the analytes of concern vary at each of the SWDAs and petroleum areas, and are determined by what has been found in previous sampling events. Overall, the analytes of concern are petroleum hydrocarbons and related volatiles, and metals. Also analyzed are anions, methane, ethane, ethene, nitrate, sulfide, alkalinity, iron (II), and manganese (II).

Ms. Baur noted that, in her graph of data results for SWDA A/B, total petroleum hydrocarbons (TPH) have been decreasing since 1995 and are now below the screening level of 1,400 micrograms per liter. The other analyte of concern in SWDA A/B is arsenic. Ms. Baur stated arsenic seems to be remaining at a steady level, but is below the screening criterion of 36 micrograms per liter.

Ms. Baur moved on to SWDA 1207/1209, noting analysis results for petroleum were non-detect. Over time levels have fluctuated, but natural attenuation has resulted in the overall decrease. The other analyte of concern is arsenic, and it seems to be remaining at a steady level in the SWDA 1207/1209. In the petroleum area 1311/1313, petroleum levels have been decreasing steadily. Arsenic in this area is just above the screening criterion and has been remaining at a steady level over time. Ms. Baur stated in the Mariner Drive petroleum area arsenic levels remain near (just above or just below) the screening criterion.

Ms. Baur stated the overall conclusion of the Groundwater Monitoring Report is that arsenic is remaining constant and TPH is trending down with natural attenuation. The recommendation is to conduct additional semi-annual and annual groundwater sampling in 2007.

Resident Christopher Grasteit asked whether all of the groundwater is flushing out to the San Francisco Bay or going underground somewhere, since the water table is artificial. Mr. Sullivan stated groundwater does move toward the bay, but tidal action results in a back-and-forth movement. Mr. Sullivan noted the reason the Navy has wells close to the bay, within 200 yards, is to monitor flushing to the bay.

Mr. Grasteit then asked whether activities such as watering for gardening purposes would help dissipate levels of analytes in groundwater. Ms. Baur stated watering would not have an impact, noting most of the analytes attach to fill material and do not travel. Scott Anderson, Navy, stated watering would probably not change hydraulic flow significantly. Mr. Sullivan added the water table at TI is about 4 feet below ground surface.

Ms. Baur added sampling is done at low tides to collect samples when analyte concentrations would be at the highest levels.

A community member asked if the source of the TPH is old diesel fuel. Mr. Sullivan responded the source would be diesel fuel, gasoline, or some other petroleum product. Diesel fuel and gasoline were stored in aboveground and underground storage tanks when the island was operating as a Naval station. The community member asked for clarification about the arsenic levels. Ms. Baur stated the levels are believed to be artificially elevated based on TPH in soil. The Navy does not believe there is an arsenic source.

Ms. Smith asked whether the Navy has any guard-monitoring wells closer to the bay than the sampling wells so the Navy can categorically say nothing is mobilizing into the bay. Ms. Smith added a water table of 4 feet below ground surface is not below the depth of the bay, but rather would result in groundwater being released directly into the bay. Ms. Baur responded there are wells very close to the bay on the sides of the perimeter walkway around the island.

Ms. Smith asked about wells in other areas of the island, such as Site 6. She noted the nearest well there is quite far from the bay and would not allow the Navy to categorically state there are no releases. Ms. Smith added the Navy has not completed any treatment and is allowing contamination to enter the bay over time until they do not have to do a cleanup of the contamination. Ms. Smith stated the RAB is not supportive of this.

Mr. Sullivan stated the Navy regularly reviews the well placement with the regulatory agencies, and has attempted to install wells as near to the shoreline as possible where needed. Mr. Sullivan added that the source of material in an area like 1311/1313 is already near the bay, so wells are clustered together in that area. Mr. Grasteit added he has seen the Navy sampling at wells within 10 feet

of the shoreline in that area. Ms. Baur stated there were wells outside of Site 6 near the bay that never had TPH detections and were closed by the Water Board. Ms. Smith asked for clarification that the wells were closed by permission of the Water Board though the Navy is still working on petroleum investigation and cleanup in that area. Mr. Sullivan stated that the Navy and regulatory agencies regularly review well data and over time may determine a particular well is no longer needed. Some wells have been decommissioned based on agreements they were no longer needed.

Ms. Smith asked if the Navy would know whether TPH is migrating and if wells are only open in the areas of concern. Ms. Baur stated data indicate that the TPH is not moving. Mr. Anderson added the Navy is performing a treatability study in the 1311/1313 area to address arsenic and TPH levels. A bench scale test (a test done inside a laboratory) was being conducted. After that is completed, a work plan for field work will be prepared.

Final Tier 1 Screening-Level Ecological Risk Assessment

Mr. Sullivan introduced Cindi Rose from Tetra Tech to discuss the Final Tier 1 Screening-Level Risk Assessment (SLERA). Ms. Rose stated her presentation was similar to the presentation given in August 2006, when the SLERA was in the draft stage. Ms. Rose stated the SLERA covers Sites 6, 12, 21, 24, 30, 31, 32, and 33. She noted all eight sites are on TI, rather than Yerba Buena Island (YBI).

Ms. Rose reviewed photos of the sites noting they are gravel, paved landscapes, and buildings, all typical of urban habitat. She noted the sites do not provide quality habitat for ecological receptors. Ms. Rose stated the ecological risk assessment for TI and YBI was conducted in a phased approach. The first phase took place in 1993, and the result was a recommendation for a SLERA on YBI and no further action on TI due to poor quality habitat.

In 1994 a site tour was conducted, with Navy, DTSC, EPA, and Water Board staff present, to assess the conclusion there was no exposure to terrestrial receptors due to poor quality habitat on TI. The result of the tour was an agreement that the sites on TI do not warrant further investigation. The Water Board did recommend additional plant and animal surveys on YBI. Because the terrestrial ecological risks were considered addressed at TI at this time, phase 2 and 3 of the ecological risk assessment only addressed YBI.

Ms. Rose stated between 1994 and 1997 plant and animal surveys were conducted and a SLERA was completed for Sites 8, 11, 28, and 29, all on YBI. The regulatory agencies, in their review of the SLERA, requested further investigation about the peregrine falcon. Ms. Rose noted at the time the peregrine falcon was on the federal and state endangered species lists, though presently it is not on the federal list. Phase 3 of the ecological risk assessment

was a refinement of risk to the peregrine falcon. The results of that phase concluded minimal risk, and the regulatory agencies concurred. At the end of 2001 the Navy addressed ecological issues at TI and YBI, and were done with ecological risk assessment.

At a BCT meeting in 2005, the regulatory agencies requested all of the historic ecological risk information compiled into a Tier 1 document to be finalized. Ms. Rose stated the reason for this request was the phase 1 document was never finalized, so there was no final document to reference in other documents. In addition, the regulatory agencies suggested the conclusions of the phase 1 applied only to mobile receptors and requested a SLERA for non-mobile receptors. The Navy agreed to conduct a Tier 1 SLERA for risk to invertebrates, plants, resident birds, and mammals.

Ms. Rose stated the Tier I SLERA has two steps. Step 1 answers the question: Are exposure pathways present? To answer this, it is necessary to review the environmental setting, conduct an ecological characterization, identify chemicals of concern, and set up a conceptual site model with fate and transport analysis and exposure parameters.

Ms. Rose stated Step 2 answers the question: Are risks present at the site? To answer this, it is necessary to calculate a hazard quotient or a risk number. A hazard quotient greater than 1 indicates potential risk, and less than 1 indicates no risk. It is also necessary to investigate uncertainty and data gaps.

Ms. Rose explained the outcome of the Tier I SLERA is determined by the answers to those two questions. If there is an exposure pathway and risk present, the site would move into a Tier II Baseline Ecological Risk Assessment. If the answer is no for both steps, no further action is warranted.

Ms. Rose stated the Navy compiled historic information and conducted site surveys in March 2006 to determine whether exposure pathways are present. The site surveys were conducted using an EPA checklist to document habitat. EPA attended one day of site surveys.

Ms. Rose stated to determine whether risks are present at the sites, the Navy calculated hazard quotients for receptors agreed upon between the Navy and the regulatory agencies including plants, invertebrates, the American robin, and the Ornate shrew.

Ms. Rose stated the conclusion of the Draft Tier 1 SLERA, submitted on 14 August 2006, was there are no complete exposure pathways to ecological receptors due to poor quality of habitat on TI. Ms. Rose stated the regulatory

agencies concurred with the conclusion, and requested only minor changes to the report which did not affect this conclusion. The RAB also made comments on the report that did not change this conclusion. RAB and regulatory agency comments were incorporated and the Final Tier 1 SLERA was submitted on 23 March 2007. The Navy received a letter of concurrence from DTSC on 5 April 2007. Ms. Rose stated the next step is to incorporate results of the SLERA into Remedial Investigation (RI) reports and other documents for Sites 6, 12, 21, 24, 30, 31, 32, and 33.

Ms. Smith asked whether the RAB received a hard copy of the document or only a compact disc. Ms. Rose stated the RAB should have received both. Ms. Smith also asked whether there was any material about YBI in the report, and Ms. Rose clarified there was not.

Site 27 Clipper Cove Skeet Range Draft Sampling and Analysis Plan

Mr. Sullivan introduced the next topic, the Site 27 Clipper Cove Skeet Range Draft Sampling and Analysis Plan (SAP). Mr. Sullivan stated Site 27 was a former skeet range site on the south end of TI that extended into the Clipper Cove area. Mr. Sullivan stated the Navy had previously collected samples, but came to an agreement with the regulatory agencies that further sampling needed to be conducted in the inshore area. He introduced Charles Perry, Lead Navy Remedial Project Manager, to discuss the Draft SAP for that additional sampling.

Mr. Perry stated the presentation would cover the field investigation planned for summer 2007. He stated the Navy was currently conducting a Feasibility Study (FS) to evaluate remedial alternatives for Site 27. Mr. Perry added the focus of the FS is to address risk to diving ducks from lead shot. The additional sampling will determine whether there is an exposure pathway to lead shot for diving ducks.

Mr. Perry showed a map of Site 27, indicating the fan shape of the site due to skeet range activities. He stated the skeet range had two shooting areas; clay pigeons were released and shot over the water resulting in an arc or fan shape. Mr. Perry showed a photo of common diving ducks that may be found in Clipper Cove, and noted these species were observed during Christmas Bird Counts conducted by the Audubon Society from 1985 through 2005.

Mr. Perry stated that recent hydrographic surveys conducted in Clipper Cove have shown sediment deposition in the skeet range, except within 150 feet of the shore. A community member asked for clarification on the term "deposition." Mr. Perry stated it can be defined as sediment piling up. Mr. Sullivan added deposition and erosion are opposites of each other; with deposition, the water is

getting more shallow because of sediment being deposited. With erosion, the water gets deeper as sediment is scoured out.

Mr. Perry stated a layer of sediment has been deposited in Clipper Cove since skeet range operations ceased. This sediment deposition has effectively covered the lead shot, eliminating the exposure pathway to diving ducks over most of the site. However, it is unknown whether an exposure pathway is complete within 150 feet of the shoreline. The planned investigation will determine whether the ducks can, in fact, access lead shot in the area from the shore outward to 150 feet. A community member asked what was the net deposition of sediment. Mr. Perry stated it varied, but it was all greater than 2 feet deep.

Mr. Grasteit asked whether the area might need to be dredged in the future since people anchor boats in Clipper Cove. Mr. Perry stated that it is not part of the Navy's program, but the City may need to do that in the future to expand or maintain the marina. Mr. Perry added the City would need to look at lead shot when dredging and how they would dispose of it.

Mr. Perry indicated on a map that the study boundaries for sediment sampling will be restricted to the 150-foot zone directly adjacent to the shoreline. The 150-foot zone will be divided into 10 equal sampling grids. Sediment samples will be collected at three locations within each grid. Each sample will be collected to a depth of 2 feet and divided into four 6-inch sub-samples (0 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches). The segments will be filtered and visually checked for lead shot, then sent to a laboratory for residual lead shot analysis. If more than 1 lead shot is present in a grid square, the square will be further investigated; if not, the grid will be removed from the FS.

Mr. Perry showed a photo of a Vibracore sampler and explained the sampling field team will, from the boat, use gravity to punch the Vibracore into the sediment, where it can be vibrated to get to the needed depth.

Mr. Perry stated the Navy will also conduct secondary data characterization. Using a clamshell device, the sampling team will collect a grab sample to collect the top 3 inches of sediment. It will be evaluated for presence of food for the diving ducks, such as grit and biomass. If food is present in this area, it would be an indication that the diving ducks are using the area.

Mr. Perry stated the Draft SAP would be issued to the RAB and the BCT on 18 May 2007, and is expected to be finalized around 6 August 2007, and field work would begin at that time. Mr. Perry stated the Navy hopes to complete the sampling in October 2007 and submit the Revised Draft Site 27 FS in March 2008.

An audience member asked whether lead flows back to shore after shot, and if that is why the Navy is sampling so close to shore. Mr. Perry stated the lead shot does not flow back to shore, but remains in the sediment. In the area 150 feet and further from the shore, sediment has covered the lead shot and is protective of the diving ducks. However, within the first 150 feet of the shore, there has not been deposition of sediment, so the Navy is evaluating that area to see if diving ducks could be exposed to lead shot. Mr. Sullivan added the Navy has examined data from studies at other skeet ranges about how shots fall and used that to plan their investigation.

Draft Site 30 (Daycare Center) and Site 31(South Storage Yard/Playground) Proposed Plan

Mr. Sullivan introduced Mr. Perry again, stating he is the project manager for Sites 30 and 31. Mr. Perry stated the RAB was given a presentation about the content of the Proposed Plans at the February 2007 RAB meeting, and this presentation would be a brief overview of the schedule for the documents. As an overview, Mr. Perry stated the preferred alternative for Site 31 is to excavate the debris areas in the playground. For Site 30, the preferred alternative is to have institutional controls to prevent or require certain protocols for future excavations underneath the building.

Mr. Perry stated the Proposed Plans were currently out for RAB and BCT review, and comments were due 23 April 2007. He stated the schedule is to publish them for the public in mid-June and hold a 30-day comment period. He stated the Navy has a large mailing list, and Mr. Sullivan added there are over 1,100 addresses on the list, the majority being TI and YBI residents. Mr. Sullivan stated the Navy would add anyone who would like to be on the mailing list. Mr. Perry stated the Navy would hold a public meeting during the 30-day comment period, in late June or early July 2007.

Ms. Smith stated she has submitted comments, and her suggestion was to have consistent glossaries with the same terms and definitions between the two documents. Ms. Smith added the Proposed Plans should read more similarly, allowing the reader to understand, for example, why dioxin is a concern at one site but not the other, and to discuss alternatives such as fencing in a consistent manner. Mr. Perry stated he had received the comments and thanked Ms. Smith for noting these items, stating he agreed with the consistency issues and those would be addressed.

Mr. Sullivan added a Proposed Plan is a major step because it is the last step in making a decision about the cleanup for a site. Mr. Sullivan stated the Navy hopes to get as much public involvement as possible, and that is why the Navy will hold a public meeting about the Proposed Plans.

Draft Site 24 Remedial Investigation/Feasibility Study

Mr. Sullivan introduced Scott Anderson, the Navy Project Manager, to present an update on the Site 24 Draft RI/Focused Feasibility Study (RI/FFS). Mr. Anderson stated Site 24 is located in the central portion of TI and is a former dry-cleaning facility that was in Building 99. Mr. Anderson stated there is a chlorinated solvent groundwater plume due to the former dry-cleaning facility, and Building 99 was the source area. Mr. Anderson stated the Navy has completed the RI for the site and two treatability studies. He explained the initial treatability study concentrated on the source area and the second is addressing the down gradient plume. Mr. Anderson stated the Navy collected data prior to the treatability studies to establish a baseline, and levels of contamination have continuously been decreasing.

Mr. Anderson stated the RI includes a human health risk assessment, an ecological risk assessment, and recommendations. Mr. Anderson stated the human health risk assessment concluded possible risk for future land use from groundwater due to vapors rising into the air from groundwater contamination. Mr. Anderson clarified the buildings in Site 24 are currently unoccupied, and may be accessed infrequently for storage. Mr. Anderson stated the ecological risk assessment showed no risk to ecological receptors. Regarding recommendations, Mr. Anderson stated the FS evaluated three options: no action, engineering and institutional controls, or continuation of the treatability studies. Mr. Anderson explained the engineering and institutional controls include maintaining the hardscape and using vapor barriers as well as regular inspections of any new buildings and 5-year reviews. Mr. Anderson explained the treatability studies use in situ bioremediation to reduce the plume. Mr. Anderson added the treatability studies are working well, with levels reduced from 18,000 parts per billion to below 100 parts per billion in some areas.

Mr. Anderson stated the Draft RI/FFS was scheduled to be delivered 30 April 2007 and would have a 30-day comment period. He noted the document would be available in the Information Repositories at Building 1 and the Main Library. Mr. Anderson said the Final RI/FFS would be issued sometime in August 2007.

Mr. Anderson stated the closure strategy for Site 24 is completion of the treatability studies. Recirculation is needed in some areas and the studies will be reconfigured to address this need. Mr. Anderson stated the Navy plans to conduct post-treatability sampling and present a final construction report before Site 24 moves into the Proposed Plan and Record of Decision (ROD) steps in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process.

Sites 9 (Foundry) and 10 (Bus Painting Shop) Record of Decision

Mr. Sullivan introduced Mr. Anderson again. Mr. Anderson is the Project Manager for Sites 9 and 10 and provided an update on the RODs. Mr. Anderson showed a map of the sites, stating they were combined several years ago because they were on the same track. An RI concluded there is no risk to human health or the environment for both sites, so the FS step was not required and the Navy moved to the Proposed Plan stage. Mr. Anderson stated the Navy did not receive any comments on their No-Action Proposed Plan for Sites 9 and 10.

Mr. Anderson stated the ROD would be issued on 20 April 2007. The ROD will be in the Information Repositories and the RAB members will receive it in the mail. After the ROD is signed by the Navy and regulatory agencies, the sites will be officially closed.

Upcoming Documents and Field Schedule

Documents

Reading from the Document Tracking Sheet, Marcie Rash, Tetra Tech, presented the following schedule for items available in the next 2 months:

- Draft Sites 9 and 10 RODs, 20 April
- Draft Site 24 RI/FFS, 30 April
- Draft Site 27 SAP/Health and Safety Plan, 18 May
- Draft Site 12 Halyburton Court Indoor Air Evaluation Technical Memorandum, 3 May
- Final PCB Summary Report (Phase I and II), 6 June
- Draft Annual Groundwater Status Report, Site 12 out for review, comments due 2 May
- Draft Annual Groundwater Status Report, Sites 6A and 25, 18 May
- Draft Island Times Volume 13 - Spring/Summer, 18 May 2007
- Final Site 30 Proposed Plan, 13 June
- Final Site 31 Proposed Plan, 13 June

Field Schedule

Ms. Rash stated there were three ongoing field activities. The first was the Site 24 Treatability Study, Phase 2, which began in January 2007. The second was the Site 21 Pilot Study. The third was the Non-Time-Critical Removal Action at Site 12, which is was projected to be completed in October.

October, December 2006 and February 2007 RAB Meeting Minutes

Mr. Sullivan stated the October meeting minutes were redone and the December minutes were completed under a slower schedule to allow time to ensure they were complete, concise, and adherent to standard grammar. The February minutes were also written that way and were submitted in the same packet. Mr. Sullivan thanked the consultant team and Navy staff for their work on the three

sets of minutes. After a brief discussion, it was decided the RAB members who had comments would hand a mark-up to Mr. Sullivan. Ms. Smith asked if she could have another copy for her records and Mr. Sullivan responded she could.

Co-Chair Announcements

Mr. Sullivan turned the discussion over to Ms. Pilram, RAB Co-chair. Ms. Pilram did not have any announcements. Mr. Sullivan noted that RAB member Nathan Brennan is also a member of the City's Citizen's Advisory Board (CAB). Mr. Sullivan noted Mr. Brennan was not in attendance and interested parties could find the CAB website on the back of the RAB agenda and check it for announcements and meeting information.

BRAC Cleanup Team Update

Mr. Sullivan stated they had two BCT meetings since the last RAB meeting, and BCT topics mirror topics discussed at the RAB. The BCT met in March and discussed the Sites 21 and 24 groundwater data, the Halyburton Court air sampling reports, and the status of property transfer, which remains the same. Transfer discussions between the City and Navy are ongoing. At the April meeting, the BCT discussed work at Site 12 and Site 24, and administrative items.

Mr. Sullivan stated the next BCT meeting was scheduled for 1 May 2007 at the Tetra Tech offices in San Francisco. Mr. Sullivan noted the Site 6 and Site 6A boundaries had been added to the May agenda. Ms. Smith asked for a 5-minute update on the boundary issue at a RAB meeting, noting Mr. Brennan was also interested in the topic. Mr. Sullivan asked for clarification on what Ms. Smith would like to know. Ms. Smith asked for clarification on Site 6B, which does not appear to be covered in the CERCLA or petroleum programs.

Mr. Anderson stated that it is all part of Site 6 and the northern part, Site 6A, is separate. The boundary letter divides up Site 6 into Subareas A, B, and C; Ms. Smith was referring to Subarea C. Mr. Anderson clarified Subarea C is part of Site 6B, and is not part of the area the Navy is proposing to split. Mr. Sullivan added Site 6A would be split off as part of the petroleum program and the remainder, Subareas B and C, would remain in the CERCLA program.

Other Public Comment and Announcements

Mr. Sullivan stated the public could ask any questions, or could remain after the meeting to ask questions and discuss one-on-one. Mr. Sullivan stated there may be an upcoming event sponsored by the Yacht Club and the TI Museum Association. Ms. Pilram stated the event may have been scheduled for 5 May 2007 and would e-mail Mr. Sullivan the information to pass along.

Future Meeting Agenda Items

Mr. Sullivan stated results of the Sites 21 and 24 groundwater sampling would be on the June agenda, as well as any other topical items.

Closing Remarks/End of Meeting

Mr. Sullivan stated the next RAB meeting was scheduled for 19 June 2007 and the RAB was scheduled for a teleconference on 6 June 2007. He then thanked everyone for attending and brought the meeting to a close. Mr. Sullivan adjourned the meeting at 8:58 p.m.

April 2007 RAB Meeting Handouts

- TI RAB Meeting No. 129 Agenda, 17 April 2007
- Site 12 (TI Housing) Removal Action Update, 17 April 2007
- Site 12 Halyburton Court Indoor Air Technical Memorandum, 17 April 2007
- Annual Groundwater Status Report for Site 12, 17 April 2007
- Final Tier 1 SLERA, 17 April 2007
- Site 27 Clipper Cove Skeet Range Draft SAP, 17 April 2007
- Draft Site 30 and Site 31 Proposed Plan, 17 April 2007
- Draft Site 24 RI/FFS, 17 April 2007
- Sites 9 and 10 ROD, 17 April 2007
- Document Tracking Sheet
- Navy Field Schedule

NAVAL STATION TREASURE ISLAND
ENVIRONMENTAL RESTORATION ADVISORY BOARD MEETING

Tuesday, 17 April 2007

7:00 PM.

Casa de la Vista (Building 271)

Treasure Island

MEETING NO. 129

- 7:00 - 7:05 **Welcome Remarks and Introductions**
Lead: James Sullivan, Navy Co-Chair
- 7:05 - 7:10 **Public Comment and Announcements**
Lead: James Sullivan, Navy Co-Chair
- 7:10 - 7:30 **Site 12 (TI Housing) Removal Action Update**
Lead: Pete Bourgeois, Shaw Environmental & Infrastructure
- 7:30 - 7:40 **Site 12 Halyburton Court Indoor Air Technical Memorandum**
Lead: Kevin Hoch, Tetra Tech EMI
- 7:40 - 7:45 **Annual Groundwater Status Report for Site 12**
Lead: Pam Baur, Sullivan Consulting Group, Inc.
- 7:45 - 7:50 **Final Tier 1 Screening-Level Ecological Risk Assessment**
Lead: Cindi Rose, Tetra Tech EMI
- 7:50 - 7:55 **Site 27 Clipper Cove Skeet Range Draft Sampling and Analysis Plan**
Lead: Charles Perry, Navy Project Manager
- 7:55 - 8:00 **Draft Site 30 (Daycare Center) and Site 31(South Storage Yard/Playground Proposed Plan)**
Lead: Charles Perry, Navy Project Manager
- 8:00 - 8:05 **Draft Site 24 Remedial Investigation/Feasibility Study (RI/FS)**
Lead: Scott Anderson, Navy Project Manager
- 8:05 - 8:10 **Sites 9 and 10 Record of Decision**
Lead: Scott Anderson, Navy Project Manager
- 8:10 - 8:20 **Upcoming Documents and Field Schedule**
Lead: Marcie Rash, Tetra Tech EMI
- 8:20 - 8:30 **October, December 2006 and February 2007 RAB Meeting Minutes**
Lead: James Sullivan, Navy Co-Chair
- 8:30 - 8:35 **Co-Chair Announcements**
Lead: Alice Pilram, Community Co-Chair



Field Efforts Solid Waste Disposal Areas Site 12, Old Bunker Area

April 17, 2007
NAVSTA Treasure Island
RAB Meeting

SITE PREPARATION



Background Soil Sampling for
Radiological Ambient Levels



SITE PREPARATION



**Radiological Screening for Background Ambient Levels
and of the SWDAs for Potential exceedances of
background:**



Detector Array Rack Towed (DART) equipment

2

SITE PREPARATION



Background Air Sampling for PCBs, PAHs, and Lead

3

SITE PREPARATION



Carport Demolition SWDA 1207/1209



Concrete Removal at SWDA 1207/1209

4

SWDA SCOPE OF WORK



Original Scope of Work for SWDAs:

- 50% DART Screening of the SWDAs
- 16 Soil Samples Per 1-foot Lift Taken Over a Random Grid Within Survey Unit
- Established On-Site Mobile Laboratory for Soil Sample Analysis

Change In Procedure Due to Anomalous Readings Above Established Background Levels:

- 100% DART Screening of the SWDAs
- 32 Soil Samples Taken Per 1-foot Lift in SWDA 1207/1209 and SWDA 1231/1233
- 64 Soil Samples taken Per 1-foot Lift in SWDA A&B
- Surgical Excavation for "Hot Spot" Soil Removals
- Hand Screening Each Excavated Bucket of Soil Prior to Loading for Removal
- Hand Screen all Concrete and Asphalt Prior to Removal

5

SWDA SITE SCREENING



Mobile Laboratory at Treasure Island, within Building 570



Objects Found within SWDA 1231/1233 that had Elevated Radium-226 Readings

SWDA SITE SCREENING



Concrete Hand Screening for Elevated Radiological Readings Prior to Removal

SWDA SITE SCREENING



Concrete Hand Screening Prior to Removal



Asphalt Hand Screening Prior to Removal

8

PROJECT SCHEDULE



Project Duration: Updated Current Forecast has Field Efforts Completing in October 2007

"Hot Spot" Removal and Excavation is currently Scheduled to Begin On April 23, 2007

QUESTIONS

?

9



Update: Halyburton Court Additional Polychlorinated Biphenyl Investigation

April 17, 2007
NAVSTA Treasure Island
RAB Meeting

Outline



- Sampling Events
- Sample Results
- Conclusions and Recommendations

Purpose of Investigation:

To determine if polychlorinated biphenyls (PCB) as vapor are present below building slabs or within utility corridors at concentrations posing an unacceptable risk to human health within the buildings

2

Sampling Events



- December 12, 2005
 - 14 soil samples were collected from beneath building slabs
- December 2005 through July 2006
 - 4 soil-gas samples were collected from the utility corridors adjacent to units 1100C and 1102A,G,E
 - 14 soil-gas samples were collected from beneath units 1100C; 1102A,C,E,F,H ; 1106A; 1104A; 1104B; 1104C; 1104E; 1104F; 1106B; and 1106C
- August and September 2006
 - 24 wipe samples were collected from Units 1100C, 1104B, and 1106A
- December 2006
 - 10 Indoor air samples were collected from Units 1100C, 1104B, and 1106A

3

Sampling Results



- Soil
 - PCBs exceeding the EPA Region 9 Preliminary Remediation Goal (PRG) for residential soil were detected in 6 of the 14 sub-slab soil samples. The maximum concentration was 1.5 parts per million (ppm)
- Soil-gas
 - No PCBs exceeded ambient air PRG (3.4 ng/m^3)
 - Maximum detection 1.72 ng/m^3 below Unit 1104B

4

Sampling Results (Continued)



- Wipes
 - PCBs were detected in all floor wipe samples (Units 1100C, 1104B, and 1106A)
 - No PCBs were detected in the wall wipe samples
 - Following building cleaning, PCB concentrations were lower but still detected
- Indoor Air
 - PCB concentrations in Units 1100C and 1104B exceeded ambient air PRG (3.4 ng/m³)
 - PCB concentrations in Unit 1106A were below ambient air PRG
 - Congener fingerprint comparison of pre-filter and sample cartridge were nearly identical

5

Final Vapor Intrusion Investigation Results



6

Conclusion and Recommendations



- No significant source of vapor phase PCBs is present beneath the buildings of Halyburton Court
- PCBs detected within the buildings are the result of particulate matter remaining in the buildings
- Prior to the release of the buildings, wipe samples should be collected from all units where no indoor air data is available (Units 1102A,F,H; 1104C; 1106B; and 1106C) to ensure PCBs are not present
- Additional cleaning of Units 1100C and 1104B is recommended (may include tile removal)

7

Questions



8



2006 Groundwater Monitoring at IR Site 12

April 17, 2007
NAVSTA Treasure Island
RAB Meeting

Outline



- Overview of Groundwater Monitoring Program
- Groundwater Monitoring Well Locations
- Methods and Procedures
- Analytical Results (Chemicals of Concern)
- Conclusions and Recommendations

Overview of Groundwater Monitoring



- **Objective**

- The principal objective of the groundwater investigation at NAVSTA TI is to evaluate whether contaminants are present in groundwater at concentrations that pose a risk to human health or aquatic organisms

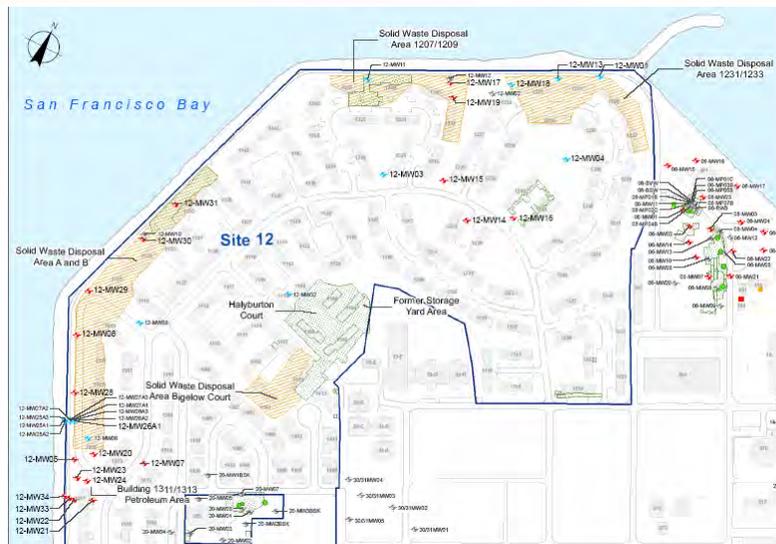
Screening is provided only for aquatic organisms in the groundwater status reports all human health concerns will be addressed in site specific reports

- **Site 12 Areas of Concern**

- Solid Waste Disposal Area A & B
- Solid Waste Disposal Area 1207/1209
- Building 1311/1313 Petroleum Area
- Mariner Drive Petroleum Area

3

Groundwater Monitoring Well Locations



4

Methods and Procedures



- All groundwater level measurements collected at low-low tide
- Groundwater samples collected at low-low tide for wells within 200 feet of the shoreline
- Low-flow techniques using a bladder pump

5

Methods and Procedures



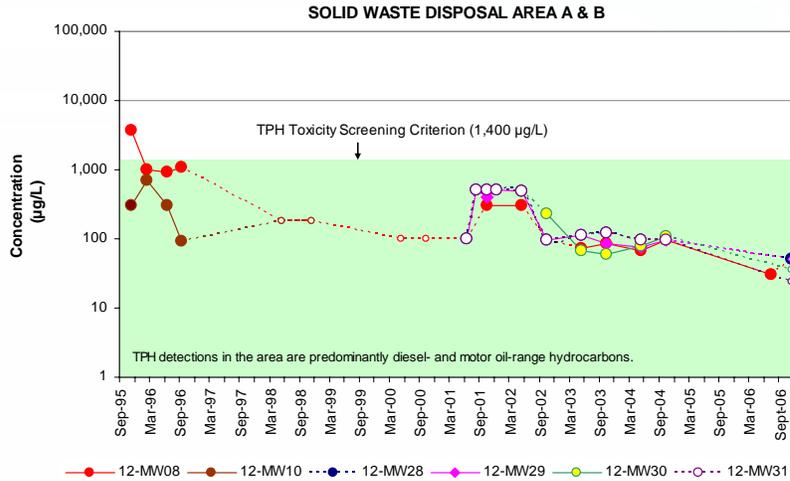
- Analytes of concern (Off Site Laboratory)
 - Volatile organic compounds
 - TPH as purgeables as gasoline
 - TPH as extractables as diesel and motor oil
 - Title 22 Metals
 - Major anions
 - Methane, ethane, and ethene
 - Nitrate
 - Sulfide
 - Total dissolved solids
 - Total suspended solids
- Analytes of concern (Field Test Kits)
 - Alkalinity
 - Iron (II)
 - Manganese (II)

6

Analytical Results



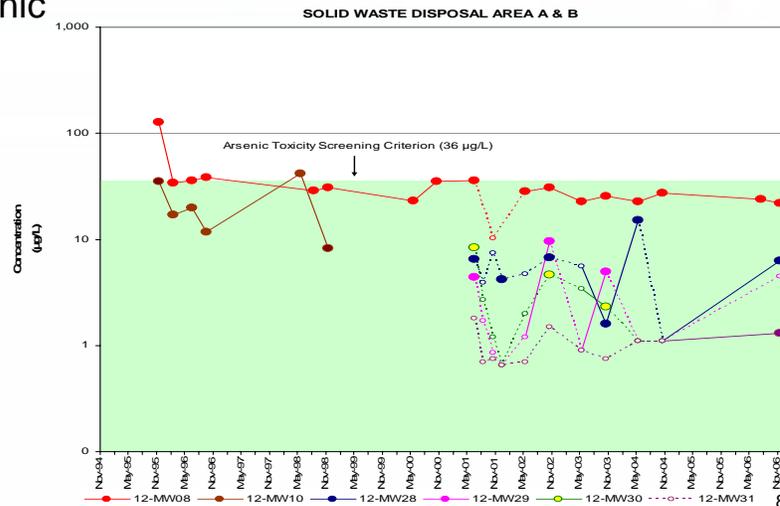
Petroleum



Analytical Results



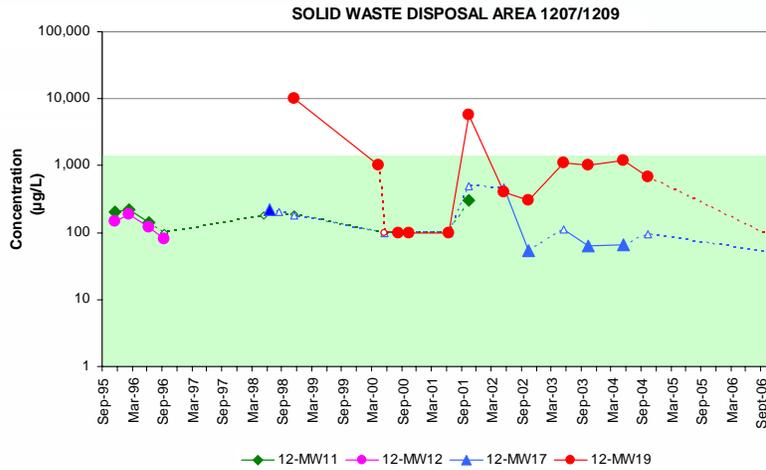
Arsenic



Analytical Results



Petroleum

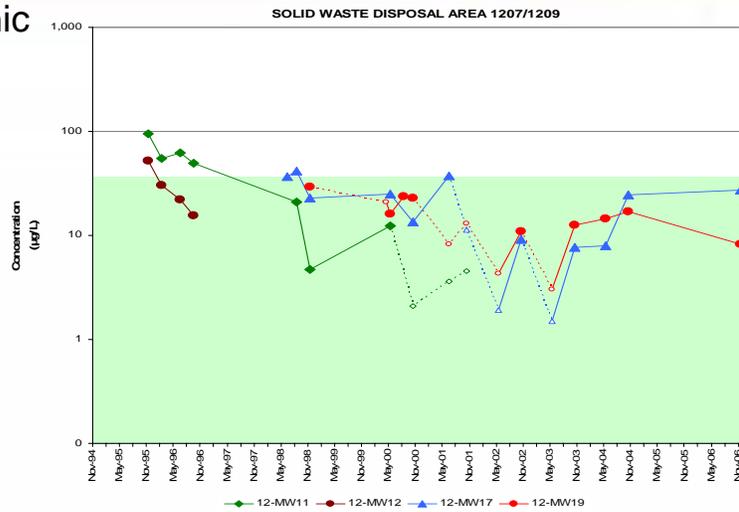


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Analytical Results



Arsenic

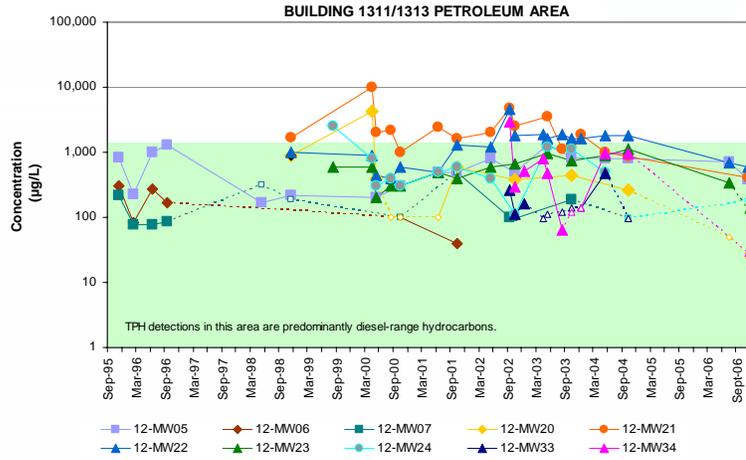


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Analytical Results



Petroleum

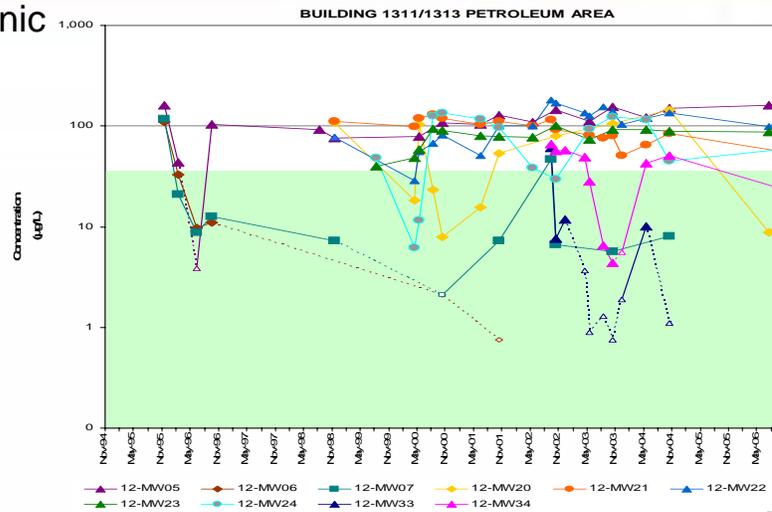


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Analytical Results



Arsenic

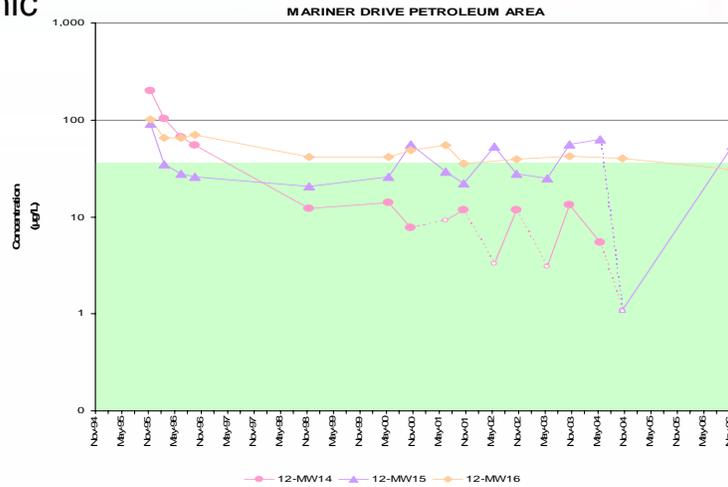


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Analytical Results



Arsenic



13

Conclusions and Recommendations



- **Conclusions**
 - Results for arsenic remain consistent
 - Results for TPH are trending down
- **Recommendations**
 - Continued semi-annual and annual sampling following removal actions at the solid waste disposal areas

14



Questions ??



SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR INSTALLATION RESTORATION SITES 6, 12, 21, 24, 30, 31, 32, AND 33

April 17, 2007
RAB Meeting
NAVSTA Treasure Island

SITE LOCATIONS



SITE LOCATIONS



3

SITE LOCATIONS



4

CHRONOLOGY FOR TERRESTRIAL ERA



- 1993 - Phase I Ecological Risk Assessment (ERA)
 - Recommended Phase II Screening Level ERA for IR sites on Yerba Buena Island (YBI)
 - Recommended no further evaluation for Sites on TI due to poor quality habitat
- 1994 - Agency Comments on Phase I ERA
 - Agencies agreed a SLERA should be conducted for sites on YBI
 - Requested a site tour to confirm the conclusions of the Phase I ERA that exposure to terrestrial receptors was limited due to poor quality habitat

5

CHRONOLOGY FOR TERRESTRIAL ERA



- 1994 - Site tour (June 3). Participants included the Navy, DTSC, EPA, and the Water Board
 - It was concluded by all that the TI sites do not have sufficient terrestrial habitat to warrant any additional effort beyond preparing a complete description of the site. The terrestrial habitat on TI was characterized as man-made, poor quality, with large areas of pavement, gravel, or buildings restricting use of the sites by ecological receptors.
 - Water Board recommended additional plant and animal surveys be conducted on YBI

6

CHRONOLOGY FOR TERRESTRIAL ERA



- 1994 - 1997 Phase II YBI Ecological Risk Assessment (ERA)
 - Plant and animal surveys were conducted
 - A Screening Level Ecological Risk Assessment (SLERA) was conducted for IR Sites on YBI (Sites 8, 11, 28, and 29)
 - Agencies comments on the SLERA requested further investigation to refine the risk to the Peregrine falcon

7

CHRONOLOGY FOR TERRESTRIAL ERA



- 1997 - 2001 Phase III YBI Ecological Risk Assessment (ERA)
 - A validation study was conducted for IR sites on YBI to refine the risk to the Peregrine falcon
 - Results of Phase III validation study concluded IR Sites on YBI posed minimal risk to the Peregrine falcon
 - The regulatory agencies concurred with the conclusion
 - No further assessment was needed

8

CHRONOLOGY FOR TERRESTRIAL ERA



- September 2005 - Remedial Project Manager Base Closure Team Meeting
 - Purpose of meeting was to discuss the previous ERA for terrestrial sites on TI
 - Agencies commented that historical information should be compiled in a new Tier 1 document for the BCT to review and finalize
 - Agencies commented that conclusions based on the draft Phase I report and the 1994 site tour applied only to mobile receptors. A new Tier I SLERA must be conducted to evaluate risk to non-mobile receptors
 - The Navy agreed to conduct a Tier I SLERA evaluating risk to invertebrates, plants, and resident birds and mammals

9

NAVY POLICY FOR CONDUCTING AN ERA



Navy policy for conducting ERAs consists of the following tiers:

- Tier 1 - SLERA
- Tier 2 - Baseline Ecological Risk Assessment (BERA)
- Tier 3 - Evaluation of remedial alternatives

The focus of this presentation is on Tier 1

10

NAVY POLICY FOR CONDUCTING AN ERA



There are two components of the Tier 1 SLERA - Steps 1 and 2:

- Step 1 - designed to help answer the question, “Are pathways present that link site contaminants to ecological receptors?” Step 1 includes:
 - Environmental Setting and Ecological Characterization
 - Identification of Preliminary Chemicals of Potential Ecological Concern (COPEC)
 - Preliminary conceptual site model (CSM)
 - Stressors
 - Chemical
 - Physical (salinity, pH, nutrient deficiencies, invasive species disturbance)
 - Fate and transport
 - Exposure Pathways
 - Preliminary Assessment and Measurement Endpoints

11

NAVY POLICY FOR CONDUCTING AN ERA



- Step 2 - designed to help answer the question, “Are risks to ecological receptors present at the site?” Step 2 includes:
 - Risk Characterization
 - Calculate a Hazard Quotient (HQ) Risk Number for plants, invertebrates, American robin, and Ornate shrew
 - $HQ > 1$ = Potential Risk
 - $HQ < 1$ = No Risk
 - Uncertainty and Data Gaps Analysis

12

NAVY POLICY FOR CONDUCTING AN ERA



Two decision criteria control the outcome of the Tier 1 SLERA:

- Existence of a complete exposure pathway from the chemical to the receptor (Step 1) and
- Chemical concentrations or doses that exceed the screening criteria used for comparison (Step 2)

If both criteria are met, then a Tier 2 BERA evaluation or remediation are initiated. No further action is warranted if only one of the criteria is met.

13

TIER 1 - STEP 1



To answer the question “Are pathways present that link site contaminants to ecological receptors?” the Navy:

- Compiled historical information for Sites 6, 12, 21, 24, 30, 31, 32, and 33
- Conducted site surveys in March 2006 using EPA checklist as provided in EPA guidance

14

TIER 1 - STEP 2



To answer the question “Are risks to ecological receptors present at the site?” the Navy:

- Calculated hazard quotients for plants, invertebrates, American robin, and Ornate shrew
- HQs were calculated using the maximum soil concentration in the 0 to 4 foot depth interval for each site
- HQs were also calculated based on the 95th percent upper confidence limit of the mean in the 0 to 4 foot depth interval for each site

15

UPDATE



- The Draft SLERA was submitted for agency and RAB review on August 14, 2006
- The regulatory agencies concurred with the conclusions of the SLERA
- Minor revisions were made according to agency and RAB comments
- The Final SLERA was submitted March 23, 2007
- DTSC letter of concurrence with Final SLERA - April 5, 2007

16

A LOOK AHEAD



- The SLERA results will be incorporated into Remedial Investigation reports and other documents for Sites 6, 12, 21, 24, 30, 31, 32 and 33

17

QUESTIONS?



18



CLIPPER COVE SKEET RANGE IR SITE 27 SEDIMENT SAMPLING FOR LEAD SHOT

April 17, 2007
RAB Meeting
NAVSTA Treasure Island

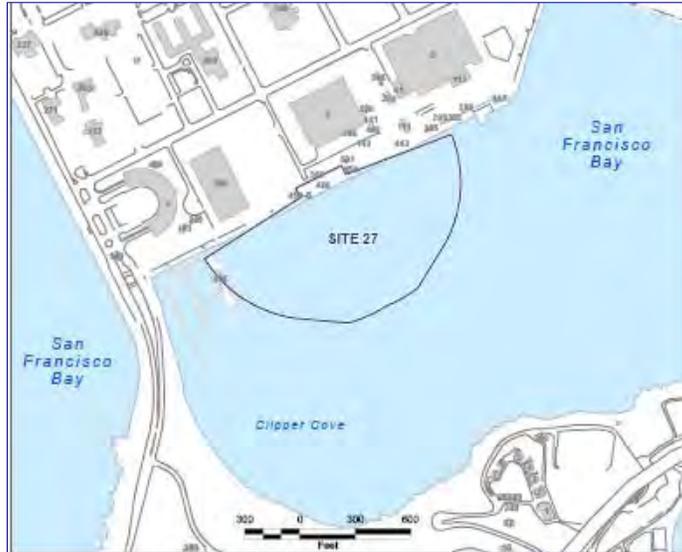
SITE 27



- The Navy is conducting a feasibility study (FS) to evaluate remedial alternatives at Installation Restoration (IR) Site 27, the Clipper Cove Skeet Range, at former Naval Station Treasure Island (NAVSTA TI)
- The remedial alternatives are focused on reducing potential risk to diving ducks from ingestion of lead shot in sediment, which was identified in the offshore sediment remedial investigation (RI) report

2

SITE 27



3

DIVING DUCKS



Surf Scoter



Lesser Scaup



Western Grebe



Common Goldeneye



Ruddy Duck

4

BACKGROUND



- Hydrographic surveys of Site 27 have shown that sediment is naturally being deposited in the Skeet Range area, except within 150 feet of the shoreline
- It is unknown whether an ingestion pathway for diving ducks is complete within 150 feet of the shoreline
- The Navy will conduct an additional field investigation within 150 feet of the shoreline to further characterize lead shot in sediment

5

BATHYMETRY



DATA QUALITY OBJECTIVES



- Decision - Is lead shot present in sufficient quantities to pose a risk to diving ducks in sediment within 150 feet of the shoreline at Site 27?
- Inputs to Decision -
 - Validated data results from previous investigations
 - Lead shot data from this investigation
 - Secondary characterization data collected from this investigation

7

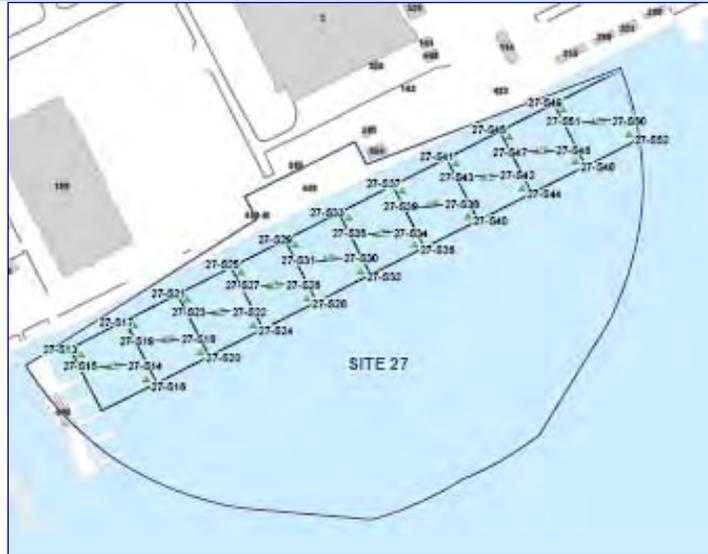
DATA QUALITY OBJECTIVES



- Study Boundaries
 - Vertical: 2 feet into the sediments
 - Horizontal: 150-foot zone directly adjacent to the shoreline at Site 27
- Decision
 - If more than one lead shot is present in a sampling grid, then the grid will be further evaluated in the FS; otherwise, the grid will not be evaluated in the FS.

8

SAMPLE LOCATIONS



9

SAMPLING BOAT



SAMPLING CREW



LEAD SHOT DATA VIBRACORE SAMPLES



- Sediment samples will be collected at three locations within each grid
- Each sample will be collected to a total depth of 2 feet and divided into four 6-inch sub-samples (0 - 6, 6 - 12, 12 - 18, and 18 - 24 inches)
- Each sub-sample will be sieved for lead shot
- After sieving, the sample will be sent to the laboratory for residual lead analysis

VIBRACORE SAMPLER



13

VIBRACORE SAMPLER



14

SAMPLE PROCESSING



15

SECONDARY CHARACTERIZATION DATA GRAB SAMPLES



- One grab sample will be collected in each grid and evaluated for benthic biomass in the top 3 inches of sediment to assess the availability of food and grit at the site and the potential for diving ducks to use the area.
- Sediment will be sieved and major taxonomic groups will be identified. The wet weight of each group observed will be recorded.



GRAB SAMPLER



17

BIOMASS



18

SITE 27 SCHEDULE



- Draft Sampling and Analysis Plan (SAP) - *May 18, 2007*
- Final SAP - *August 6, 2007*
- Field Investigation - *August to October 2007*
- Revised Draft Final Feasibility Study - *March 2008*

19

QUESTIONS?



20



**Draft
Remedial Investigation and
Focused Feasibility Study Report
Installation Restoration Site 24
Former Dry Cleaning Facility**

April 17, 2007
RAB Meeting
NAVSTA Treasure Island

Outline



- Remedial Investigation (RI) Results
- Focused Feasibility Study (FFS) Remedial Alternatives
- Site 24 RI/FFS Schedule
- Site 24 Closure Strategy

IR Site 24 - Former Dry Cleaning Facility



3

Combined RI and FFS Strategy



- Navy preparing combined RI and FFS Report to accelerate the CERCLA process
- RI portion of Report documents investigation results, baseline Human Health Risk Assessment (HHRA), and Screening Level Ecological Risk Assessment (SLERA)
- FFS portion of Report uses results of baseline HHRA to develop appropriate remedial alternatives
- FFS appropriate because expanded Treatability Study is successfully reducing PCE concentrations

4

Human Health Risk Assessment



| Receptor | Evaluated Soil Depth (ft) | Within Risk Range? | Contaminants of Concern (COCs) |
|-------------------------------------|---------------------------|--------------------|-----------------------------------|
| Current Land Use | | | |
| Commercial/Industrial Worker | 0-2 bgs, unpaved | Below | None |
| Future Land Use | | | |
| Commercial/ Industrial Worker | 0-2 bgs | Above | GW: TCE, PCE, VC |
| | 0-GW | Above | GW: TCE, PCE, VC |
| Construction Worker | 0-GW | Above | GW: 1,2-DCE , TCE, PCE, VC |
| Hypothetical Future Land Use | | | |
| Resident | 0-2 bgs | Above | GW: 1,2-DCE , TCE, PCE, VC |
| | 0-GW | Above | GW: 1,2-DCE , TCE, PCE, VC |

5

Screening-Level Ecological Risk Assessment



- SLERA conducted for Site 24
 - Chemicals in groundwater do not pose an unacceptable risk to benthic invertebrates or other aquatic biota offshore of NAVSTA TI
 - No complete exposure pathways to terrestrial ecological receptors

6

Focused Feasibility Study



- Remedial Action Objectives (RAOs) established for future commercial/construction/industrial workers, based on industrial use as the reasonably anticipated future use
- Remedial Goals (RGs) based on a risk management goal of 1×10^{-5} for cancer risk and a hazard index of 1 for noncancer risk
- Applicable or Relevant Appropriate Requirements (ARARs) analysis
- Remedial alternative development and analysis

7

Remedial Alternatives



- Alternative 1 – No Action:
 - Basis to compare other alternatives
- Alternative 2 – Engineering and Institutional Controls:
 - Maintain existing hardscape as exposure prevention barriers
 - Require that engineering controls be installed in existing and new buildings if future use increases from current use
 - Perform routine inspections and maintenance, when necessary
 - Conduct yearly reporting and 5-year reviews
- Alternative 3 – In-Situ Anaerobic Bioremediation:
 - In-situ bioremediation (ISB) evaluated for cleaning up the entire plume based on Treatability Study results
 - Post-remediation soil and groundwater sampling and groundwater monitoring

8

Site 24 RI/FFS Schedule



- 04/30/07: Draft RI and FFS Report for Regulatory Review
- 05/30/07: Regulatory Agency Review Comments Due
- 08/30/07: Final RI and FFS Report

9

Site 24 Closure Strategy



- Complete Treatability Study
- Conduct post-Treatability Study sampling
- Prepare Treatability Study Field Activity Report
- Prepare Proposed Plan and Record of Decision

10

**Naval Station Treasure Island
Environmental Cleanup Program
Document Tracking Sheet
April - October 2007**

| Item | Document Title & Information | CTO/DO | INTERNAL DRAFT | | DRAFT | | | | | | RTC | | INTERNAL F I N A L | | F I N A L | NOTES | | | | | | |
|--------------------------------------------------|---------------------------------------------------------------------|---------|----------------------------|-------------------|-------------------|----------|----------|-------------|----------|------|-----|-------|------------------------------|----------------------------|------------------------|-------------------|-------------------|----------|----------|----------------------------------------------------------------------------------------------------------------|--|--|
| | | | Internal Draft Due to Navy | Navy Comments Due | Draft to Agencies | Date Due | DTSC | Water Board | EPA | TIDA | RAB | OTHER | Preliminary RTCs to Agencies | Resolve and Concur on RTCs | Internal Final to Navy | Navy Comments Due | Final to Agencies | Comments | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| SulTech - Non Petroleum Related Documents | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Site 32 Remedial Investigation Report | 94 | 08/18/06 | ✓ | 09/17/06 | ✓ | 10/20/06 | ✓ | 02/14/07 | ✓ | ✓ | ✓ | ✓ | ✓ | TBD | TBD | TBD | TBD | TBD | *Other* agency comments provided by US Fish and Wildlife. RI on hold while path forward on RTCs is determined. | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Pam Baur | | | | | | | | | | | | | | | | | | | | | |
| 2 | Site 33 Remedial Investigation Report | 103 | 09/07/06 | ✓ | 10/16/06 | ✓ | TBD | | TBD | | | | | | TBD | TBD | TBD | TBD | TBD | | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Kevin Hoch | | | | | | | | | | | | | | | | | | | | | |
| 3 | Sites 9 and 10 Record of Decision | 24 | 12/21/06* | ✓ | 01/19/07* | ✓ | 04/20/07 | | 05/21/07 | | | | | | TBD | TBD | TBD | TBD | TBD | * Navy technical review ** Navy legal review | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Laura Newman | | | | | | | | | | | | | | | | | | | | | |
| 4 | Site 24 Remedial Investigation Report/ Focussed Feasibility Study | 92 /123 | 12/22/06* | ✓ | 01/31/07* | ✓ | 04/30/07 | | 05/30/07 | | | | | | 06/27/07 | TBD | 08/13/07 | 08/23/07 | 08/30/07 | * Navy technical review ** Navy legal review | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Jean Michaels | | | | | | | | | | | | | | | | | | | | | |
| 5 | Site 27 SAP/HSP | 43 | 04/06/07 | ✓ | 04/20/07 | | 05/18/07 | | 06/18/07 | | | | | | TBD | TBD | 07/02/07 | 07/16/07 | 08/06/07 | Field investigation scheduled for August 2007 | | |
| | RPM: Charles Pery | | | | | | | | | | | | | | | | | | | | | |
| | PM: Cindi Rose | | | | | | | | | | | | | | | | | | | | | |
| 6 | Site 12 Halyburton Court Indoor Air Evaluation Technical Memorandum | 52 | 04/19/07 | | 04/26/07 | | 05/03/07 | | 06/01/07 | | | | | | TBD | TBD | 07/25/07 | 08/09/07 | 08/23/07 | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Kevin Hoch | | | | | | | | | | | | | | | | | | | | | |
| 7 | Site 6 Remedial Investigation Report | 91 | TBD | | TBD | | TBD | | TBD | | | | | | TBD | TBD | TBD | TBD | TBD | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Von Gusa | | | | | | | | | | | | | | | | | | | | | |
| 8 | Site 21 Feasibility Study | 144 | TBD* | | TBD* | | TBD | | TBD | | | | | | TBD | TBD | TBD | TBD | TBD | * Navy technical review ** Navy legal review | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Jean Michaels | | | | | | | | | | | | | | | | | | | | | |
| 9 | Sites 8, 28, and 29 Revised Remedial Investigation Report | 104 | TBD | | TBD | | TBD | | TBD | | | | | | TBD | TBD | TBD | TBD | TBD | The Draft RI Report was submitted in March 2006. | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Marcie Rash | | | | | | | | | | | | | | | | | | | | | |
| 10 | Site 12 EU Calculations White Paper | 52 | TBD | | TBD | | TBD | | TBD | | | | | | TBD | TBD | NA | NA | NA | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Victor Early | | | | | | | | | | | | | | | | | | | | | |

**Naval Station Treasure Island
Environmental Cleanup Program
Document Tracking Sheet
April - October 2007**

| Item | Document Title & Information | CTO/DO | INTERNAL DRAFT | | DRAFT | | | | | | RTC | | INTERNAL FINAL | | FINAL | NOTES | | | | | | |
|---------------------------------------------------------------------------------------|---------------------------------------------------|----------|----------------------------|-------------------|-------------------|----------|-----------------|-------------|----------|------|-----|------------------------------|----------------------------|------------------------|-------------------|-------------------|----------|---------------------------------------------------------------------------|----------|----------|---------------------------------------------|--|
| | | | Internal Draft Due to Navy | Navy Comments Due | Draft to Agencies | Date Due | Agency Comments | | | | | Preliminary RTCs to Agencies | Resolve and Concur on RTCs | Internal Final to Navy | Navy Comments Due | Final to Agencies | Comments | | | | | |
| | | | | | | | DTSC | Water Board | EPA | TIDA | RAB | | | | | | | OTHER | | | | |
| SulTech - Non Petroleum Related Documents (continued) | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Site 12 Remedial Investigation Report | 117 | TBD | TBD | TBD | TBD | | | | | | | TBD | TBD | TBD | TBD | | | | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Ginna Demetrios | | | | | | | | | | | | | | | | | | | | | |
| 12 | Fact Sheet: Site 12 Remedial Investigation Report | 52 | TBD | TBD | TBD | TBD | | | | | | | TBD | TBD | TBD | TBD | | | | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Ginna Demetrios | | | | | | | | | | | | | | | | | Fact sheet will be distributed near the submittal of the Draft RI Report. | | | | |
| 13 | Fact Sheet: Radiological Program Update | FZN6 | TBD | TBD | TBD | TBD | | | | | | | TBD | TBD | TBD | TBD | | | | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Marcie Rash | | | | | | | | | | | | | | | | | | | | | |
| Sullivan Consulting Group/Tetra Tech EM Inc. - Non Petroleum Related Documents | | | | | | | | | | | | | | | | | | | | | | |
| 14 | PCB Summary Report (Phase I and II) | CLIN0001 | 09/12/06 | ✓ | 01/27/07 | ✓ | 02/09/07 | ✓ | 03/09/07 | ✓ | ✓ | ✓ | ✓ | | | TBD | TBD | 05/09/07 | 05/23/07 | 06/06/07 | Anticipating receipt of other BCT comments. | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Pam Baur | | | | | | | | | | | | | | | | | | | | | |
| 15 | Annual Groundwater Status Report, Site 12 | CLIN0002 | 03/02/07 | ✓ | 03/05/07 | ✓ | 03/26/07 | ✓ | 05/02/07 | | | | | | TBD | TBD | 05/16/07 | 05/30/07 | 06/13/07 | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Pam Baur | | | | | | | | | | | | | | | | | | | | | |
| 16 | Annual Groundwater Status Report, Sites 6A and 25 | CLIN0002 | 04/20/07 | | 05/04/07 | | 05/18/07 | | 06/18/07 | | | | | | TBD | TBD | 07/02/07 | 07/16/07 | 07/30/07 | | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | | | | |
| | PM: Pam Baur | | | | | | | | | | | | | | | | | | | | | |
| Shaw Group | | | | | | | | | | | | | | | | | | | | | | |
| 17 | PCB Work Plan | FZN1 | 03/19/07 | ✓ | 04/10/07 | ✓ | TBD | | TBD | | | | | | TBD | TBD | TBD | TBD | TBD | TBD | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | | | | |
| | PM: Pete Bourgeois | | | | | | | | | | | | | | | | | | | | | |
| Tetra Tech EM, Inc. | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 2007 Site Management Plan | FZN6 | 05/24/07 | | 06/07/07 | | 06/20/07 | | 07/20/07 | | | | | | TBD | TBD | 08/23/07 | 09/05/07 | 09/19/07 | | | |
| | RPM: Charles Perry | | | | | | | | | | | | | | | | | | | | | |
| | PM: Marcie Rash | | | | | | | | | | | | | | | | | | | | | |
| 19 | Island Times Volume 13 - Spring/Summer 2007 | FZN6 | 04/25/07 | | 05/09/07 | | 05/18/07 | | 06/01/07 | | | | | | TBD | TBD | 06/08/07 | 06/15/07 | 06/22/07 | | | |
| | RPM: James Sullivan | | | | | | | | | | | | | | | | | | | | | |
| | PM: Marcie Rash | | | | | | | | | | | | | | | | | | | | | |

**Naval Station Treasure Island
Environmental Cleanup Program
Document Tracking Sheet
April - October 2007**

| Item | Document Title & Information | CTO/DO | INTERNAL DRAFT | | DRAFT | | | | | | | RTC | | INTERNAL FINAL | | FINAL | NOTES | | |
|----------------------------------------|------------------------------------------------|--------|----------------------------|-------------------|-------------------|-----------------|------|-------------|-----|------|-----|-------|------------------------------|----------------------------|------------------------|-------------------|-------------------|--------------------------------------------------------|----------------------------------------------------------------------|
| | | | Internal Draft Due to Navy | Navy Comments Due | Draft to Agencies | Agency Comments | | | | | | | Preliminary RTCs to Agencies | Resolve and Concur on RTCs | Internal Final to Navy | Navy Comments Due | Final to Agencies | Comments | |
| | | | | | | Date Due | DTSC | Water Board | EPA | TIDA | RAB | OTHER | | | | | | | |
| Tetra Tech EM, Inc. (continued) | | | | | | | | | | | | | | | | | | | |
| 20 | Community Involvement Plan 2007 | FZN6 | 10/19/07 | 11/20/07 | 12/05/07 | 01/03/08 | | | | | | | | TBD | TBD | 01/17/08 | 01/24/08 | 01/26/08 | Anticipate conducting interviews July 26 through September 28, 2007. |
| | RPM: James Sullivan | | | | | | | | | | | | | | | | | | |
| | PM: Marcie Rash | | | | | | | | | | | | | | | | | | |
| Tetra Tech EC, Inc. | | | | | | | | | | | | | | | | | | | |
| 21 | Basewide Radiological Support Work Plan | 21 | 11/29/06 | ✓ 01/04/07 | ✓ 02/20/07 | ✓ 04/05/07 | ✓ | ✓ | | | | | 04/25/07 | 05/03/07 | 05/18/07 | 06/01/07 | 06/21/07 | | |
| | RPM: James Whitcomb | | | | | | | | | | | | | | | | | | |
| | PM: Brian Maidrand | | | | | | | | | | | | | | | | | | |
| Barajas & Associates, Inc. | | | | | | | | | | | | | | | | | | | |
| 22 | Site 30 Proposed Plan | 25 | 12/22/06 | ✓ 03/06/07 | ✓ 03/23/07 | ✓ 04/23/07 | | | | | | | TBD | TBD | 05/23/07 | 06/06/07 | 06/13/07 | Navy comments on internal draft includes legal review. | |
| | RPM: Charles Perry | | | | | | | | | | | | | | | | | | |
| | PM: Margaret Berry | | | | | | | | | | | | | | | | | | |
| 23 | Site 31 Proposed Plan | 25 | 01/19/07 | ✓ 03/06/07 | ✓ 03/23/07 | ✓ 04/23/07 | | | | | | | TBD | TBD | 05/23/07 | 06/06/07 | 06/13/07 | Navy comments on internal draft includes legal review. | |
| | RPM: Charles Perry | | | | | | | | | | | | | | | | | | |
| | PM: Margaret Berry | | | | | | | | | | | | | | | | | | |
| 24 | Site 11 Remedial Investigation Report | 24 | 05/22/07 | 06/21/07 | 07/19/07 | 08/18/07 | | | | | | | TBD | TBD | 09/15/07 | 10/25/07 | 11/08/07 | | |
| | RPM: Scott Anderson | | | | | | | | | | | | | | | | | | |
| | PM: Margaret Berry | | | | | | | | | | | | | | | | | | |

✓ Production or review of document is complete.

Blue shading indicates agency review comments are due within the next 60 days.

Yellow shading indicates documents that will be issued draft or final within the next 60 days.

Grey shading indicates the document is complete.

Abbreviations:

BCT= Base Realignment and Closure (BRAC) Cleanup Team
 CTO = Contract Task Order
 DO = Delivery Order
 DTSC = Department of Toxic Substances Control
 EU = Exposure Unit

HSP = Health and Safety Plan
 NA = Not Applicable
 PCB = Polychlorinated Biphenyls
 PM = Project Manager
 RAB = Restoration Advisory Board
 RI = Remedial Investigation
 RPM = Remedial Project Manager

SAP = Sampling and Analysis Plan
 SLERA = Screening Level Ecological Risk Assessment
 TBD = To Be Determined
 TI = Treasure Island
 TIDA = Treasure Island Development Authority
 Water Board = Regional Water Quality Control Board

**Naval Station Treasure Island
Navy Field Schedule**

April - June 2007

| Item | Activity & Investigation Area | DTR # | Field Dates | Navy RPM | CTO/DO | PM | FTL | Complete |
|------------------------------------------------------|-------------------------------------------------------|------------|-------------------------------------|----------------------------------|--------|-----------------------------------|------------------------------------|----------|
| Tetra Tech EM Inc. | | | | | | | | |
| | <i>None</i> | | | | | | | |
| Sullivan Consulting Group/ Tetra Tech EM Inc. | | | | | | | | |
| | <i>None</i> | | | | | | | |
| SulTech | | | | | | | | |
| | <i>None</i> | | | | | | | |
| Shaw | | | | | | | | |
| 1 | Site 24 Treatability Study Phase II <i>Site 24</i> | Doc N/A | Start: 01/29/07 Finish: TBD | Scott Anderson (619) 532-0938 | FZN1 | Peter Bourgeois (415) 277-6983 | David Cacciatore (925) 288-2299 | |
| 2 | Site 21 Pilot Treatability Study <i>Site 21</i> | Doc N/A | Start: 01/29/07 Finish: TBD | Scott Anderson (619) 532-0938 | FZN1 | Peter Bourgeois (415) 277-6983 | Dan Leigh (925) 288-2193 | |
| 3 | Non-Time Critical Removal Action <i>Site 12</i> | Doc N/A | Start: 02/26/07 Finish: 10/26/07 | Jim Whitcomb (619) 532-0936 | 10 | Peter Bourgeois (415) 277-6983 | Peter Bourgeois (415) 277-6983 | |

CTO - Contract Task Order

DO - Delivery Order

DTR # - Denotes document tracking reference. The number listed corresponds to the associated documentation listed on the Document Tracking Sheet

FTL - Field team lead

N/A - not applicable, there is no associated documentation listed on the DTS.

RPM - Remedial Project Manager

TBD - To Be Determined

✓ Field work is complete.

Yellow shading indicates field activities that will start or finish within the next 60 days.

Grey shading indicates field activities are complete.