

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND, MID-ATLANTIC 9742 MARYLAND AVENUE NORFOLK, VIRGINIA 23511-3095

> IN REPLY REFER TO: 5090 OPNEEV/15/lbf 11 February 2009

MEMORANDUM

FOR THE MEMBERS OF THE RESTORATION ADVISORY BOARD (RAB) FOR THE INSTALLATION RESTORATION PROGRAM AT NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK

The Navy would like to announce that a <u>Restoration Advisory Board (RAB)</u> meeting has been scheduled for Thursday, March 12, 2009. This meeting is open to the general public and will begin at 7:00 PM. The location of the meeting is the Calverton Community Center, Grumman Boulevard, Calverton, New York.

Items that will be discussed during this meeting will include:

- Site 2 Removal
- Sites 2, 6A, 10B, and Southern Area August 2008 Groundwater Results
- Sites 2, 6A, 10B, and Southern Area Groundwater Work Plan
- Site 7 Remedial Activities

Attached for your review are the minutes from the RAB meeting held on November 6, 2008. The Navy requests that you review the meeting minutes and provide comments that you have to either myself or to the RAB Community Co-Chair, Mr. Bill Gunther. These minutes will be discussed and approved at the March 12th meeting. If you need additional information, I am available by telephone, 757-444-0781, or email, <u>lora.fly@navy.mil</u>.

Sincerely,

Lora Fly

Remedial Project Manager By direction of the Commanding Officer

Distribution:

NAVFAC Mid-Atlantic, Lora Fly NAVAIR, Richard Smith NYSDEC (Albany), Larry Rosenmann NYSDEC (Albany), Henry Wilkie NYSDEC (Stony Brook), Walter Parrish NYSDOH, Jacqueline Nealon SCDHS, Andrew Rapiejko USEPA Region II, Ellen Stein USEPA Region II, Carla Struble Public Repository Town of Riverhead, Chris Kempner Tetra Tech NUS, David Brayack ECOR Solutions, Al Taormina ECOR Solutions, Patrick Schauble Community Co-Chair, Bill Gunther Community RAB Member, Sidney Bail Community RAB Member, Art Binder Community RAB Member, Louis Cork Community RAB Member, John Hall Community RAB Member, Harry Histand Community RAB Member, Jean Mannhaupt Community RAB Member, Ann Miloski Community RAB Member, Vincent Racaniello

Non-RAB Member Mailing List:

Frank Anastasi (SCA Associates) Tony Muratore Bob Conklin

RESTORATION ADVISORY BOARD MEETING NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP), CALVERTON CALVERTON COMMUNITY CENTER, CALVERTON, NEW YORK THURSDAY, NOVEMBER 6, 2008

The twenty-eighth meeting of the Restoration Advisory Board (RAB) was held at the Calverton Community Center. Meeting attendees included representatives from the Navy (Lora Fly), New York State Department of Environmental Conservation (NYSDEC) (Henry Wilkie), RAB Community members (Bill Gunther, Harry Histand, Lou Cork, and Vincent Racaniello), Suffolk County Department of Health Services (SCDHS) (Doug Feldman, Mary Hime, and Andrew Rapiejko), Town of Riverhead (Chris Kempner), Peconic River Sportsmen Club (PRSC) (John Hall and Anthony Muratore), Tetra Tech NUS, Inc. (David Brayack, Debbie Cohen, and Robert Sok), ECOR Solutions, Inc. (Bob Ingram, Matt Lapp, Patrick Schauble, David Streetsmith, and Al Taormina), TAPP Consultant (Frank Anastasi), Sovereign Consulting (Marc Cicalese), and PFRC (Bob Conklin). The meeting sign-in sheet is provided as Attachment 1.

WELCOME AND AGENDA REVIEW

The Navy representative, Ms. Lora Fly, welcomed everyone to the RAB meeting and introduced the meeting agenda. The agenda for the meeting is included as Attachment 2. The presentations for the meeting are included as Attachments 3 to 6.

DISTRIBUTION AND APPROVAL OF MINUTES

Ms. Fly mentioned that based on Mr. Bill Gunther's comments on the draft July 2008 minutes, revised minutes were distributed on October 27, 2008. Ms. Fly asked the RAB to review the revised minutes for approval at the next RAB meeting. The revised July 2008 minutes will be submitted with the November 2008 draft minutes.

Ms. Fly asked whether the RAB members had any comments or concerns for reducing the frequency of the RAB meeting from three times a year to twice a year. The next RAB meeting is planned for March 5, 2009 and if the frequency of meetings is reduced, the other meeting would be held early in September 2009. Mr. Gunther requested that the Navy wait to make a decision on the frequency of RAB meetings until the March 2009 RAB meeting so that the RAB members can consider what information will be available between March and September 2009.

COMMUNITY UPDATE

Mr. Bill Gunther, RAB Community Co-chair, indicated that there are a few items that he would like to be discussed as part of the presentations for the meeting. He will identify them during the discussions. Mr. Andrew Rapiejko (SCHDS) introduced SCHDS colleagues Mr. Doug Feldman from the Office of Water Resources and Ms. Mary Hime from the Bureau of Groundwater.

TECHNICAL PROGRESS – GENERAL PROGRAM

Ms. Fly continued the meeting with a review of the Navy's program and provided information on the funding status for fiscal year (FY) 08 and FY09 for NWIRP Calverton projects. Details on funding are provided in the presentation in Attachment 3. Ms. Fly mentioned that source area (soil) removal actions for Sites 2, 6A (partial funding with the balance in FY 09 and 10), and 10B are being funded. The removal action for Site 6A will begin after Long Island Power Authority (LIPA) relocates a utility line that runs through the removal action area.

TECHNICAL PROGRESS – SITE 7 REMEDIAL ACTIVITIES

Mr. David Streetsmith (ECOR Solutions, Inc.) provided a presentation on the status of remedial activities at Site 7. The presentation is included in Attachment 4.

The presentation provided updated contaminant concentration trend maps and mass removal statistics since reactivating the Air Sparge/Soil Vapor Extraction System in April 2008. As discussed at the July 2008 RAB meeting, the data showed several locations had elevated concentrations of several volatile organic compounds (VOCs) (including naphthalene) and the concentrations appear to be increasing. Therefore, the Navy conducted additional sampling to determine the cause for the elevated and potentially increasing concentrations.

As part of the sampling, groundwater samples were collected from soil vapor extraction locations, existing monitoring wells, and additional groundwater sampling points (geoprobe locations). The information will be used to determine whether modification to the existing treatment system or an alternative remedy is needed to address the contamination.

Mr. Streetsmith reviewed the results of the groundwater sampling conducted in September 2008 and the geoprobe groundwater sampling conducted in October 2008. The geoprobe locations

were installed around SV-11, where elevated Freon concentrations were detected in groundwater, and SV-2 where elevated VOCs were detected in groundwater. The results show that Freon in groundwater is localized at SV-11; where Freon was detected at approximately 100 ug/L. Except for at SV-11, Freon was not detected in groundwater at Site 7, including locations downgradient of SV-11. Concentrations of Freon at SV-11 were greater in the past; however, the initial ozone treatment conducted for Site 7 likely addressed most of Freon contamination in groundwater. The most recent data indicated that there is a partial rebound of Freon in this area. The Navy believes that Freon was used to pressure test a former fuel line before the line was put into use.

VOC (BTEX and naphthalene) contamination was found to be localized around SV-2. The results of the treatment system for Site 7 show that most of the groundwater contamination has been treated; however, the Navy will evaluate optimization of the treatment system to address the remaining contamination at SV-2 and to achieve the target mass removal goal of 90 percent removal. The Navy will also evaluate the results of the September and October 2008 groundwater results to determine whether additional air sparging wells can be added to address the contamination at SV-2 or whether additional treatment options need to be considered.

TECHNICAL PROGRESS – SITE 2 REMOVAL ACTION

Mr. Marc Cicalese, Sovereign Consulting, provided a presentation on the status of the Site 2 soil removal action. The presentation is included in Attachment 5.

As discussed at the July 2008 RAB meeting, the Navy is conducting a source area (soil) removal action to remove accessible contaminated soil that is acting as a continuing source of groundwater contamination. The final work plan for the Site 2 soil removal action was submitted in August 2008 and it provided the excavation plan for removal of petroleum-contaminated soil to 6 feet below ground surface (bgs) and petroleum- and PCB-contaminated soil to 1 foot bgs. As part of the removal action activities the following activities have been conducted:

- The air sparging treatment system was dismantled and extraction and injection wells were abandoned. Free product recovery wells used in the 1980s were also abandoned.
- An existing access road from Grumman Road to Site 2 was upgraded and a new entrance gate was installed.
- The concrete ring for the former Fire Training Area was demolished. Mr. Cicalese explained that when the concrete ring was removed, clean soil was found directly

underneath and stained soil with ash was found from approximately 1 to 5 feet bgs. Clean soil was found at 5 feet bgs.

- Approximately 80 percent of excavation of soil has been completed. The surficial soil with petroleum and PCB contamination has not been excavated. Mr. Cicalese discussed that a 0.5- to 1-foot thick lens of contaminated soil was found at approximately 2 feet bgs that extends beyond the planned excavation area. The Navy will remove this additional soil. The Navy believes that it is residual contamination from past operations.
- Confirmation soil samples were collected from the excavated area to determine whether the targeted soil contamination has been removed or whether additional soil excavation is needed as part of the removal action.

Mr. Cicalese showed photographs of the excavation activities. He explained that previous soil data were used to delineate the initial area for excavation. Field observations of stained soil with a petroleum odor or photoionization detector (PID) reading was used to identify an additional area for excavation. Confirmation sampling will also be used to determine whether additional soil excavation is needed. After confirming that excavation of the targeted contaminated soil is complete, certified clean fill will be used to back fill the excavation area. NYSDEC has a certification process that requires testing to show that the fill soil is clean. Prior to backfilling, dry ORC[®] will spread in the excavation area. The ORC is expected to treat some of the residual soil contamination at depths deeper than 6 feet bgs and will address potential mobilization of contamination from excavation activities.

Several questions were raised regarding the management of the excavated materials. Mr. Cicalese explained that the concrete was pressure washed before transport offsite for recycling. The petroleum contaminated soil will be taken to a soil recycling facility in New Jersey. The soil with PCB contamination will be taken to a facility in Pennsylvania that can manage petroleum and PCB-contaminated soil. The excavated soil is being trucked to the disposal facilities. Mr. Cicalese estimated that 20 to 40 truck loads per day (400 to 1200 tons per day) are being removed. Based on transportation requirements, 10-wheeler trucks are being used.

TECHNICAL PROGRESS – SITES 2, 6A, AND 10B AND SOUTHERN AREA AUGUST 2008 GROUNDWATER RESULTS AND GROUNDWATER WORK PLAN

Mr. Brayack presented the August 2008 Groundwater Results and Mr. Sok presented the Groundwater Work Plan for Sites 2, 6A, and 10B and Southern Area. The presentation is included in Attachment 6.

As part of Mr. Brayack's presentation, he reviewed past groundwater investigations and conclusions to explain how the understanding of groundwater flow and contaminant migration have evolved since 1997. The following summarizes the current understanding of groundwater flow and contaminant migration:

- Groundwater contamination has migrated offsite. The Southern Area has been divided into an onsite component (within the fence) and an offsite component (south of the fence). Investigations have shown that groundwater flows south-southeast towards the Peconic River. The groundwater contaminant plume flows into the Peconic River and does not flow underneath the river. Therefore, the river is the southern most boundary of the contaminant plume.
- A shallow clay unit (approximately 40 to 60 feet bgs) is present under the northern portion of the plume and groundwater contamination is present above this clay unit. Groundwater contamination was found at deeper depths where the clay unit is not present in the southern portion of the plume. However, there is another clay unit at 140 to 150 feet bgs and contaminated groundwater has not been found beneath the deeper clay unit. The deeper clay unit extends to the river.
- Several streams or stream channels are present throughout the area and can result in a
 preferential flow path for shallow groundwater. One stream in particular from Swan
 Pond to the Peconic River represents the western boundary of the Southern Area plume.
 Flow at this location is not constant. Mr. John Hall mentioned that this stream normally
 is flowing on the PRSC property where it enters the pond. He also mentioned that 25
 years ago there were other streams that are now overgrown, including one to the east
 near Connecticut Avenue. Mr. Brayack indicated that the old flow channels are taken
 into consideration when evaluating the extent of groundwater contamination and
 preferential flow paths.

Mr. Brayack reviewed the August 2008 results and indicated the few refinements in the groundwater plume since the July 2008 RAB meeting presentation. The August 2008 results were used to identify data gaps that will be addressed in the subsequent groundwater monitoring program. A question was asked whether there was any connection between groundwater contamination offsite of Site 2 and groundwater contamination offsite of Site 3 and 10B. Mr. Brayack explained that the current data does not suggest a connection between the two plumes. Previous investigation in the area between the two plumes (McKay Lake) showed that groundwater in the area was not impacted. Mr. Brayack will review the current data to see whether there is any potential connection between the plumes.

Mr. Sok reviewed the planned groundwater monitoring and investigation program. The groundwater monitoring program will provide information on overall groundwater conditions. The groundwater investigation will target potential source areas and fill data gaps in the monitoring program. The monitoring program includes annual monitoring in 2009 and 2010 as follows:

- 13 monitoring wells at Site 2 for VOCs.
- 12 monitoring wells at Site 6A for VOCs.
- 3 monitoring wells at Site 10B for VOCs.
- 23 monitoring wells in the Southern Area for VOCs with biodegradation components (e.g., methane, ethane, and ethane) at select wells.

Quarterly sampling will be conducted at wells at the PRSC and semi-annual surface water and sediment sampling will be conducted in the Peconic River. The samples will be analyzed for volatile organic compounds (VOCs). In answer to a question about previous surface water sampling, Mr. Brayack indicated that several locations are only accessible by canoe. VOCs were either not detected or detected at very low concentrations in the surface water samples. There were some detections of VOCs in groundwater samples collected from piezometers installed along the bank of the river. Annual sampling will target the dry season (September), when there are lower flow periods. The decision to use September for sampling was questioned and in particular whether a seasonal evaluation had been conducted. Although a seasonal study has not been conducted, based on previous work at the site there has not been any apparent significant fluctuations in concentrations based on the season.

A temporary monitoring well groundwater investigation will be conducted in the on site portion of the Southern Area where there are several potential source areas to be considered. The proposed locations are provided on Figure 3-1 in the work plan. The investigation is anticipated to be completed by April 2009, before the 2009 annual groundwater monitoring event. The groundwater investigation will include:

- Groundwater grab sampling (geoprobe) to investigate potential source areas and address data gaps in upgradient areas of the groundwater plume. Grab sampling results will be used to determine where additional monitoring wells are needed. Geoprobes will be sampled at two depths above the upper clay unit (expected to be at 30 to 40 feet bgs). The locations were selected because data for downgradient locations suggests a potential upgradient source area may be present.
- Two new monitoring well clusters will be installed on the PRSC property to address data gaps in that area. The new wells will be included in the groundwater monitoring program.

Wells are not planned in wetlands between the roads east and west of PRSC. The Navy believes that the proposed locations by the road will be adequate to define the extent of the downgradient edge of plume; however, data for the new wells will be evaluated to determine whether any data gaps in the area remain and additional sampling locations area needed.

During the RAB meeting, concerns were raised about offsite groundwater contamination relating to the timing of investigations, priority for investigation and remediation activities, and possible remedial options for the offsite plume. During the discussion over these concerns, it was agreed that conducting removal actions to address source areas (soil) contributing to the groundwater contamination was very important. The source area removal action is being conducted at Site 2 and the removal action is in the planning stages for Sites 6A and 10B. As part of the removal action for Sites 6A and 10B, the Navy will excavate soil to the water table to remove the majority (expected to be greater than 90 percent) of contamination and then use ORC to treat residual soil contamination. The community RAB members indicated that they would like the groundwater monitoring and remediation to proceed at a faster pace. The following summarizes the discussion related to the groundwater concerns:

• Remedy for offsite groundwater contamination. The Navy believes there is sufficient information to proceed with a natural attenuation with monitoring remedy for the off site

groundwater plume that is provided in the draft Corrective Measures Study (CMS) from 2006. However, it acknowledges that additional data are needed to determine remedies to address the contaminant source areas. The focus of the current groundwater investigation is to fill data gaps to support identification of source area removal actions. The Navy does not expect a different remedy from the CMS would be needed unless there is an unacceptable impact to the river. The surface water and sediment data are not showing an unacceptable impact to the river. Based on 2009 and 2010 groundwater, surface water, and sediment data, the CMS will be reviewed and revised as needed.

- Time to determine a remedy for the offsite groundwater plume. The community expressed concerns that it was taking several years to investigate and fill data gaps for the offsite plume, which was delaying determination of a remedy for the offsite plume. The Navy indicated that because there are no longer activities that contribute contamination to the source areas, the concentrations of VOCs are not expected to change quickly. Since VOCs tend to attenuate over time, the Navy does not expect the relatively high VOC concentrations detected in groundwater along the road to reach the river at those concentrations.
- Contamination in the offsite plume reaching the river. The community was concerned that there were significant detections of VOCs (up to approximately 1,000 µg/L) in the offsite plume and the community does not want the contamination to go into the river. The community expressed concern that monitored natural attenuation may not be sufficient to ensure that VOC contamination does not enter the river.
- Funding affecting timing of remediation. The community was concerned that funding
 may be affecting the timing of remediation work. The Navy explained that the current
 focus for funding was on conducting source area removal actions and getting
 groundwater monitoring data after the removal actions. This approach was based on the
 priority of work the Navy discussed with the RAB. While the source removal actions are
 being conducting, the Navy is continuing with the monitoring program needed to support
 a decision for the groundwater.

Other questions and discussion during the RAB meeting related to groundwater monitoring and investigation included the following:

- In answer to a question about the basis for conducting the monitoring annually, Mr. Brayack indicated that the frequency of monitoring was based on the groundwater flow rate for the area. Groundwater in the source area would take 1 to 2 years to reach the downgradient locations. After removal of contaminated soil as part of the source removal action, the Navy will collect groundwater monitoring data to make sure that groundwater contamination has not migrated downgradient. The groundwater monitoring data are needed before preparing a revised groundwater FS/CMS.
- In answer to a question of whether groundwater flow is to the east along River Road (as suggested by SCDHS data), Mr. Brayack explained that groundwater flow direction in this area needs to be better defined. The regional groundwater throughout the Southern Area is southeast to the Peconic River. Based on the SCDHS data, groundwater may locally be flowing east, but the findings can also be explained by relatively wide plume moving to the southeast. The Navy plans on installing additional groundwater flow off site and the distribution of contamination. Factors that may be affecting groundwater flow locally are a clay unit, the pond on PRSC, and the river.
- In answer to a question of whether SCDHS would be doing any more groundwater sampling at NWIRP Calverton, Mr. Rapiejko indicated that after his presentation of data at the July 2008 RAB meeting, SCDHS collected two surface water samples from the Peconic River. VOCs were not detected in these two samples. Mr. Rapiejko indicated that no other data collection was planned.
- Mr. Rapiejko asked whether the Navy or PRSC would be providing SCDHS with the results of the quarterly sampling results for the PRSC wells. The Navy has been sending the quarterly reports to Mr. Hall. Ms. Fly and Mr. Hall will need to determine who will forward the reports on to the SCDHS.
- Mr. Conklin asked Mr. Rapiejko whether SCDHS has VOC data for the Peconic River in other areas besides near NWIRP Calverton. Mr. Rapiejko was not certain and will see whether these data are available for the Peconic River.

CLOSING REMARKS

Ms. Fly indicated that the next meeting will be on March 5, 2009. *Note:* Based on a post-RAB meeting schedule conflict, the next RAB meeting is being scheduled for March 12, 2009.

ATTACHMENT 1

NOVEMBER 6, 2008 RAB MEETING SIGN-IN SHEET

28th RAB Meeting for NWIRP Calverton November 6, 2008 Sign-In List

Name Address (if interested in being on mailing list) Organization How Did You Hear of Meeting? DNKCIN 0 50 α SUVEREIGN Consuting 1CALese 20 B arn Toi 0 Vank SCA nn 251 550C, ZNUS Jayor .

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28th RAB Meeting for NWIRP Calverton November 6, 2008 Sign-In List

Name	Address (if interested in being on mailing list)	Organization	How Did You Hear of Meeting?
Robert Sok	-	Tetra Tech NW	5
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M2H Lapp		ECOR Solu	tions
Debbie Coher	<u>٦</u>	TENUS	
Loca Fy		U.S-NAVY	
Bill Gut	tr	RAB	
Arthony Mu	RATORE	PRSC	
Andrew RADIA	erko	SCDHS	
DONG F	ELDMAN	Scott 5	
Lou Cork		R.A.B.	

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ATTACHMENT 2

NOVEMBER 6, 2008 RAB MEETING AGENDA

Agenda

Restoration Advisory Board Naval Weapons Industrial Reserve Plant Calverton

November 6, 2008 Calverton Community Center, Calverton NY 7:00 p.m.

> <u>Welcome and Agenda Review</u> Lora Fly, NAVFAC Mid-Atlantic

> > Distribution of Minutes All Members

<u>Community Update</u> Bill Gunther, RAB Co-chair

Technical Progress

General Program Lora Fly

Site 7 Remedial Activities David Streetsmith, ECOR

Site 2 Removal Action Marc Cicalese, Sovereign

6A and 10B, and Southern Area August 2008 Groundwater Results David Brayack, Tetra Tech

Sites 2, 6A, and 10B and Southern Area Groundwater Work Plan Rob Sok, Tetra Tech

> Closing Remarks Lora Fly

Presenters will be available after the program for questions.

ATTACHMENT 3

NAVY PRESENTATION



NAVFAC MIDLANT, NORFOLK, VA

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) CALVERTON, NEW YORK INSTALLATION RESTORATION PROGRAM

BUDGET UPDATE – FY-08 ACTUAL COSTS AND FY-09 EXECUTION PLAN

Restoration Advisory Board (RAB) Meeting

11/06/2008

NWIRP Calverton FY-08 ACTUAL EXECUTION

FUNDED

PROJECT



REMARKS

Site 2 – Soil Removal Action	\$ 1,699,427	Removal Underway
Site 6A – Site Preparation for Soil Removal	\$ 411,001	Developing Work Plan
Site 7 – Long Term Monitoring AS/SVE Operation and Maintenance	\$ 337,661	O&M Proceeding
Site 10B – Soil Removal Action	\$ 1,039,003	Work Plan Under Navy Review
Off Site Groundwater Investigation	\$ 537,657	Work Plan under Review
TAPP for RAB Support	\$ 24,999	Final Award
TOTAL for FY-08 =	\$ 4,049,748	

PROJECT



- •Site 6A Soil Removal
- •Site 7 Long Term Monitoring Air Sparging/Soil Vapor Extraction Operation & Maintenance
- •Evaluate Alternative Water Supply with PRSC
- •Community Support

ATTACHMENT 4

ECOR SOLUTIONS, INC. PRESENTATION



Site 7: Former Fuel Depot Air Sparge/Soil Vapor Extraction System Former Naval Weapons Industrial Reserve Plant Calverton, NY

Restoration Advisory Board Meeting November 6, 2008



Delivering environmental construction, operations and remediation solutions to industry and government

Project Overview

- Constituents of Concern:
 - BTEX, Naphthalene, and Freon in groundwater
- AS/SVE System constructed 2004
- Goal:
 - Mass removal of groundwater constituents
 - Operate and maintain in-situ AS/SVE system until remediation goals are attained



Site 7: Former Fuel Depot



Source: TtEC, Inc.

Area Map

Delivering environmental construction, operations and remediation solutions to industry and government



The Site









Source: TtEC, Inc.

Delivering environmental construction, operations and remediation solutions to industry and government

ECOR Solutions, Inc.

Operational Activities

- System was restarted on April 3, 2008 following winter shutdown
- Latest groundwater samples collected September 8-10, 2008
- Groundwater sampling event scheduled for December following the winter shutdown.
- Performed weekly O&M visits to:
 - Monitor vapor-phase carbon adsorbers
 - Obtain instrument measurements
 - Insure proper system operation
 - Perform general site inspections
- On October 2-3, 2008, used direct-push method to collect groundwater samples at 16 locations south and east of SV-2 and south of SV-4



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Well Location/Contaminant Concentration Map



Groundwater Contaminant Concentrations at Monitoring Well Locations NWIRP Calverton, NY September 2008


Groundwater Contaminant Concentrations at Select SVE Wells NWIRP Calverton, NY September 2008



Groundwater Analytical Results at Select SVE Well Locations NWIRP Calverton, NY September 2008



Groundwater Analytical Results at SV-2 NWIRP Calverton, NY September 2008



System Runtime

- April 2008 624 hours (86.7%)
- May 2008 738 hours (99.1%)
- June 2008 628 hours (87.2%)
- July 2008 684 hours (91.9%)
- August 2008 724 hours (97.3%)
- September 2008 643 hours (89.3%)
- Year to date 4041 hours (92.0%)



Mass Removal

Mass Removal is calculated from:

- The concentration of contaminants in vapor samples collected monthly at a location immediately prior to carbon adsorption.
- The flowrate of the vapor through the adsorbers
- And the operational time of the system for the month.





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Mass Removal Statistics

Monthly Mass Removals:

- April 2008 2.06 lbs
- May 2008 1.08 lbs
- June 2008 3.14 lbs
- July 2008 0.60 lbs
- August 2008 1.11 lbs
- September 2008 1.14 lbs
- Cumulative Mass Removals:
 - 2008 year to date 9.1 lbs
 - Start-up to date 158.5 lbs





NWIRP Calverton AS/SVE system Monthly Mass Removal by Soil Vapor Extraction May 2006 to date

Time

NWIRP Calverton AS/SVE system Cumulative Mass Removal by Soil Vapor Extraction May 2006 to date



Time

Additional Groundwater Investigation

- Collected groundwater samples from 16 locations south and east of SV-2 and south of SV-4.
- Used direct-push method as approved by NYSDEC
- Better delineation of VOC impact areas
- Results indicate majority of impact in the vicinity of SV-2





Future Activities

- Continue collecting monthly effluent air samples to monitor vapor concentrations
- Determine if new AS/SVE wells could reduce increasing concentrations in SV-2 area
- Investigate rate of GW movement toward MW-10S
- Determine well casing elevations to determine groundwater flow rate and direction







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ATTACHMENT 5

SOVEREIGN CONSULTING PRESENTATION



Restoration Advisory Board (RAB Meeting)

Site 2 – Removal Action Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York November 6, 2008

FACILITY LAYOUT





SITE 2 GROUNDWATER INVESTIGATION



- •Fire Training Activities 1950s to mid-1990s.
- •Free product recovery from late 1980s to mid-1990s.
- •Free product and limited solvents present in soil and groundwater at site.
- •Air sparging/soil vapor extraction was used to treat solvents (volatile organic compounds) in soils 1995 to 2001.
- •Good success on groundwater, but did not address a continuing source of groundwater contamination above the groundwater.
- •Removal action is underway (October to December 2008).

SITE 2 REMOVAL ACTION – EXCAVATION PLAN



SITE 2 REMOVAL ACTION – EXCAVATION PLAN



NATAC

















ATTACHMENT 6

TETRA TECH NUS, INC. PRESENTATION



Restoration Advisory Board (RAB Meeting)

Site 6A, 10B, and Southern Area Groundwater Investigation Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York November 6, 2008

FACILITY LAYOUT





SITE 6A, 10B, AND SOUTHERN AREA INVESTIGATION HISTORY



- 1997 Groundwater Investigation
- 2000 Groundwater Investigation
- •2004/2005 Groundwater Investigation
- •2007/2008 Groundwater Investigation

1997 REGIONAL GROUNDWATER FLOW





SITE 6A AND 10B, 1997 TO 2000 INVESTIGATION HISTORY



FORM CHOD NO. TURUS_BRIDGH - REV 8 - 1/85/98

SOUTHERN AREA, 1997 TO 2000 INVESTIGATION HISTORY





FORM CADD NO. THNUS_BABEN - REV 0 - 1/20/98

1997 TO 2000 GROUNDWATER INVESTIGATION





1997 TO 2000 GROUNDWATER INVESTIGATION





SOUTHERN AREA 2004/2005 INVESTIGATION HISTORY





2008 GROUNDWATER INVESTIGATION RESULTS






SOUTHERN AREA 2008 GROUNDWATER INVESTIGATION





SOUTHERN AREA 2008 GROUNDWATER INVESTIGATION



November 6, 2008

SOUTHERN AREA 2008 INVESTIGATION





SOUTHERN AREA QUESTIONS/DISCUSSION



Questions/Discussion



Groundwater Investigation/Monitoring at Sites 2, 6A, 10B, and the Southern Area RAB Presentation

Naval Weapons Industrial Reserve Plant (NWIRP) Calverton, New York November 6, 2008



•Continuance of groundwater monitoring at:

- -Site 2-Former Fire Training Area -Site 6A-Old Fuel Calibration Area
- -Site 10B-Engine Test House
- -Southern Area On Site/Off Site

•Groundwater investigation to target potential source areas and identified data gaps in current monitoring program.

- -Temporary monitoring points to be installed to screen potential source areas and identified data gap areas.
- -Permanent monitoring wells will be installed to address data gaps and support the ongoing groundwater monitoring program.

NWIRP Calverton – Site Location Map





P-QI@WWIRP_CALVERTON@URFACE_WATER_HYDROLOGY.APR REVISED SITE LOCATION MAP 10/15/05 85

Site 2-Fire Training Area



Current Action and Scope

- •Removal Action in Progress to address shallow soil contamination
- Groundwater Contaminants of Concern (COCs) VOCs (chloroethane, 1, 1-dichloroethane, toluene, and 1,2dichlorobenzene)
- •13 existing monitoring wells
- •Groundwater sampling for VOCs, annually, 2009 and 2010

Site 2-Fire Training Area





Site 6A-Fuel Calibration Area



Current Site Scope

- •Groundwater COCs VOCs (chloroethane, 1,1-dichloroethane, 1,1,1-trichloroethane, 1,2-Dichlorobenzene, 1,1-dichloroethene, benzene, chloroethane, ethylbenzene, toluene, and total xylenes)
- •12 existing monitoring wells
- •Groundwater sampling for VOCs, annually, 2009 and 2010

Site 10B-Engine Test House



Current Site Scope

- •Groundwater COCs VOCs (chlorinated VOCs, BTEX)
- •3 existing monitoring wells
- •Groundwater sampling for VOCs, annually, 2009 and 2010

Site 6A-Fuel Calibration Area and 10B- Engine Test House







Current Site Scope

•Groundwater COCs - VOCs

(1,1,1-trichloroethane, freon 113, 1,1-dichloroethane, 1,1dichloroethene, bromomethane, chlorobenzene, chloroethane, chloroform, methylene chloride, and vinyl chloride)

- •23 existing monitoring wells
- •Groundwater sampling for VOCs (and methane, ethene, ethane at select monitoring wells), annually, 2009 and 2010
- •Quarterly sampling at the Peconic River Sportsmen Club
- •Semi-annual surface water and sediment sampling in the Peconic River



Background

- •Mostly wooded, includes two shallow ponds near northern edge.
- •Ponds receive runoff through a drainage swale and culvert from Site 6A Fuel Calibration Area.
- •From the late 1980's to the early 1990's, groundwater from Site 6A-Fuel Calibration Area was discharged into this drainage swale and culvert and into the western pond.
- •Presence of chlorinated VOC contaminated groundwater at the Southern Area may be attributable to Site 6A-Fuel Calibration Area.



Background (cont.)

- •A relatively large (approximately 160 acres), chlorinated VOC groundwater plume.
- •Contamination extends to maximum depth of 60 to 80 feet below the water table.
- •Potable water use at the Peconic River Sportsman's Club result in potential receptors.
- •Groundwater discharges into the Peconic River.
- •Suffolk County Health Department conducted groundwater sampling along Grumman Road in June 2008.





Southern Area – August 2008 Groundwater Contours (Shallow)





2-23

Southern Area – August 2008 Groundwater Contours (Deep)





November 2008

Southern Area – Cross Section Location Map





November 2008

Southern Area - August 2008





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Southern Area Groundwater Plume (1997-2001)





November 2008

Southern Area Plume – August 2008







Groundwater Investigation

- •Groundwater grab sampling (approximately 9 locations) to investigate potential source areas and address identified data gaps in upgradient area of the groundwater plume.
- •Based on results from the groundwater grab sampling, additional monitoring wells will be placed to best support the existing monitoring well network at the site.
- •Two new monitoring well clusters are proposed on PRSC property to address data gaps.
- •The new monitoring wells will be added to the groundwater sampling events.

Southern Area – Groundwater Grab and Monitoring Well Locations





Anticipated Schedule



•Groundwater Investigation

- -Temporary monitoring point installation, January-February 2009
- -Permanent monitoring well installation, March-April 2009

•Groundwater Monitoring

- –March 2009, quarterly sampling event at PRSC and semi-annual surface water sediment sampling
- –June 2009, quarterly sampling at PRSC
- –September 2009, annual groundwater sampling event, quarterly PRSC sampling and semi-annual surface water sediment sampling
- -December 2009, quarterly sampling at PRSC
- -2010 sampling schedule TBD