



FORMER NAVAL AIR WARFARE CENTER WARMINSTER

Restoration Advisory Board (RAB) Meeting Minutes

FORMER NAVAL AIR WARFARE CENTER (NAWC) WARMINSTER MEETING MINUTES

RESTORATION ADVISORY BOARD (RAB) MEETING NO. 118

REFERENCE: CLEAN CTO NO. WE23

1. Meeting Date and Time: June 9, 2010, 9:35 AM to 10:45 AM
2. Location: Warminster Municipal Authority Board Room
3. Attendees: See Attachment 1 (attendance list)
4. Summary of Meeting Discussions: See below.

Administrative Update

Jeff Dale, the Navy's Remedial Project Manager (RPM) for the project working out of the Navy's Base Realignment and Closure Program Management Office (BRAC PMO) in Philadelphia, opened the meeting by welcoming the attendees and providing an agenda for the meeting (Attachment 2).

Comments were solicited on the March 10, 2010 RAB meeting minutes. No comments were offered by those in attendance and the meeting minutes were approved as-is.

Action items from the March 10, 2010 RAB meeting were addressed as topics were brought up for discussion. The action items from the previous RAB meeting are summarized below:



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- The Navy is to update the treatment plant data evaluation to include 1,1,1-TCA and month-to-month changes in mass removal rates for key contaminants.
- PADEP is to provide an update r.e. the status of the CRC Industries investigation.
- WMA/Earth Data is to provide an update of the municipal wells treatment systems upgrade status.
- The Navy is to release the CSM for RAB review upon approval by DOJ.
- The Navy is to update the RAB on the progress of property transfers for the remaining Navy properties along Jacksonville Road and the Shenandoah Woods housing area.

Off-Site Investigations

Michelle Rudnick (CRC Industries) provided an update on the status of the work being performed to address soil and groundwater impacts related to their facility. A risk assessment was recently submitted to PADEP for review. DNAPL monitoring is still ongoing, however no more DNAPL has been found recently. All of the site monitoring wells were sampled recently (May 26-28), to generally coincide with the Navy's round of LTM sampling that was initiated during the last week of May.

WMA Update

Tim Hagy provided an update to the RAB regarding recent activities related to WMA water supply wells 13 and 26. The treatment system upgrade for WMA 26 has been completed and the well is online. The design for a treatment system for WMA 13 has been completed, however any further work related to WMA 13 is on hold for now.



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Navy Housing Transfer Update

Bob Lewandowski (BRAC PMO) updated the RAB regarding property transfers from the Navy. Findings of Suitability to Transfer (FOST) have been prepared for the Jacksonville Road and Shenandoah Woods housing developments, however finalization/submission of the documents is on hold until they are supplemented with information from upcoming asbestos and lead-based paint surveys. The work will be tied into NAS Willow Grove closure activities, as the base is closing. Jim Krueger (Warminster Township) asked about the old maintenance building that formerly existed at OU-10/Site 5 – the consensus was that the site has been adequately characterized and there are no remaining concerns/issues. Bob Tate (Warminster Township) asked about the NAS Willow Grove closure timeline – Mr. Lewandowski indicated that the base must be closed by September 2011. There was some general discussion regarding the timing of intermediate activities associated with the closure.

Treatment Plant Operation/LTM

Jeff Orient (Tetra Tech) updated the RAB on the status of the spring 2010 round of LTM sampling. Sampling has been completed in some wells, PDB samplers have been installed in other wells, and these remaining samples will be pulled next week. The update LTM Plan is currently out for review. Upon approval, this plan will be used for LTM activities moving forward.

Jen Good (ECOR) was unable to attend the meeting to provide a groundwater extraction and treatment plant O&M update due to traffic/travel problems. Mr. Dale provided a brief update in



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her absence. All Area C extraction wells designated for operation are now running again. Area D pumping has been throttled back as pumping is no longer required for these wells. Pumping at extraction well EW-A19 in Area A has been cut back to increase VOC concentrations and reduce chromium levels in the plant influent. The Navy looked at 1,1,1 TCA removal from Area A groundwater over time – a total of approximately 0.13 pounds of 1,1,1-TCA have been removed since the startup of the extraction system.

After the RAB meeting, the ECOR update was obtained from Ms. Good and is provided as Attachment 3 to the minutes.

Miscellaneous Topics and Issues – Action Items

Mr. Dale updated the RAB on the current status of the CSM. A draft version is currently in TEG review – WMA has also seen the draft document. Once TEG review is completed, a revised version will be sent out for expanded review. No other miscellaneous topics were raised for discussion.

Action Items that will be carried through to the next RAB meeting include:

- The Navy is to provide an update on groundwater extraction/treatment/monitoring activities.
- PADEP is to provide an update r.e. the status of the CRC Industries investigation.
- WMA/Earth Data is to provide an update of the municipal wells treatment systems status.
- The Navy is to release the CSM for RAB review upon completion of the TEG review.



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- The Navy is to update the RAB on the progress of property transfers for the remaining Navy properties along Jacksonville Road and the Shenandoah Woods housing area.

Next Meeting Date

The next RAB meeting date was set for September 15, 2010 at 9:30 AM in the WMA Board Room. The meeting was adjourned at approximately 10:30 AM.



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ATTACHMENT 1 ATTENDANCE LIST

NAWC WARMINSTER
 TECHNICAL SUBCOMMITTEE/RAB MEETING
 DATE: June 9, 2010

NAME	AFFILIATION	PHONE	EMAIL
Kathy Davies	US EPA	215-814-3315	kathy.davies.kathy@epa.gov
Jeff Dale	NAVY	215-897-4194	jeffrcy.m.dale@navy.mil
BOB TATE	WARMINSTER TOWNSHIP	215-443-5414	btate@warminsterpa.org
JENNIS ORENSHAM	U.S. EPA	215-814-3361	ORENSHAM.JENNIS@EPA.GOV
Bob Lewandowski	Navy	215-897-9908	Robert.F.Lewandowski@navy.mil
Carolyn Scala	Buttelle	215-524-5203	scalac@buttelle.org
Stewart Abrams	Langan	215-864-0640	Sabrams@langan.com
Michelle Rudnick	CRC Industries Inc.	215-442-6224	mrudnick@crcindustries.com
Toby Kessler	Gilmer & Assoc./Warminster Twp	215-345-4330	tkessler@gilmore-assoc.com
Jim Krueger	Warminster Twp	215-443-6467	JKrueger@warminsterpa.org
TIM HAGEY	WMA	215-675-3301 x201	timh@warminsterauthority.com
Dave Ferrimore	EDW/WMA	610-524-9406	dferrimore@edwhdpc.com
Tom BUTERBAUGH	PADEP	484-250-5790	tbutsbaugh@state.pa.us
Charles Clark	PADEP	484-250-5731	charclark@state.pa.us
Ron Sloat	US Geological Survey	610-321-2434 x212	rsloat@usgs.gov
JEFF ORIENT	TERRA TECH	412-921-8778	jeff.orient@tetratech.com



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ATTACHMENT 2 MEETING AGENDA



AGENDA

FORMER NAWC WARMINSTER

Technical Subcommittee/Restoration Advisory Board (RAB) Meeting

Date: 10 MAR 2010

Time: 9:30 AM

Location: WMA Board Room, 415 Gibson Ave., Warminster, PA

- **Administrative Update**
 - Minutes of the Last Meeting
 - Review Action Items (see below)

- **Off-Site Investigations**
 - PADEP update on CRC Chemicals

- **WMA Update**
 - Status of Wells #13 and #26 treatment upgrades.

- **Navy Housing Transfer Update**
 - Status of property transfer activities along Jacksonville Road and Shenandoah Woods.

- **Treatment Plant Operation/LTM**
 - Plant operating status
 - Remote communication configuration – Area C
 - Reduction in flow from Area D
 - Chromium removal
 - VOC removal evaluation, air stripper versus liquid-phase carbon
 - LTM update
 - Status of quarterly monitoring reports

- **Other Activities**
 - ECOR presentation on current/upcoming work activities:
 - Offsite well surveys and preparation of legal descriptions.
 - Conversion of monitoring data for uploading into the Navy's NIRIS database, and maintenance of the NIRIS electronic database for the site.

- **Miscellaneous Topics and Issues – Action Items**
 - Conceptual Site Model Update
 - Long Term Performance Monitoring Plan Update

Time and Location of Next Meeting: - Date to be determined

▪ **Action Items**

The following action items were identified as a result of the December 2010 meeting:

- PADEP is to provide an update r.e status of the CRC Industries investigation.
- Tetra Tech NUS is to submit the CSM update for Navy, then TEG review.
- WMA/Earth Data is to provide an update of the treatment system upgrade status.
- The Navy is to continue pursuing additional in-house support for completing lease agreements for monitoring well access.
- The Navy is to update the RAB on the progress of property transfers for the remaining Navy properties along Jacksonville Road and the Shenandoah Woods housing area.

Directions to the WMA Board Room:

From the former NAWC - Proceed to the intersection of Street and Jacksonville Rd. Turn west (right) onto Street Rd. Continue west to York Rd. Turn south (left) onto York Rd. Continue to Henry Ave. Turn west (right) onto Henry Ave. Follow directions as above to the WMA building.

From County Line Rd - Instead of turning north (right) onto Jacksonville, continue west on County Line to York Rd. Turn north (right) onto York Rd. Continue to Henry Ave. Turn west (left) onto Henry Ave. Continue to Gibson Ave. Turn right into the parking lot shared by the Warminster Township and WMA. The WMA building is located towards the rear.



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ATTACHMENT 3 ECOR PRESENTATION



Restoration Advisory Board Meeting

NAWC WARMINSTER

09 JUNE 2010

Presented by



Presentation Agenda

- **GWTP Status**
 - Plant Operation
 - Mass Removal
 - Hexavalent Chromium (Cr⁺⁶) Removal
- **LTM Status**
 - Spring 2010 Sampling Round Status
 - Long-Range LTM Plans

Groundwater Treatment Plant Operating Status

Plant Operation

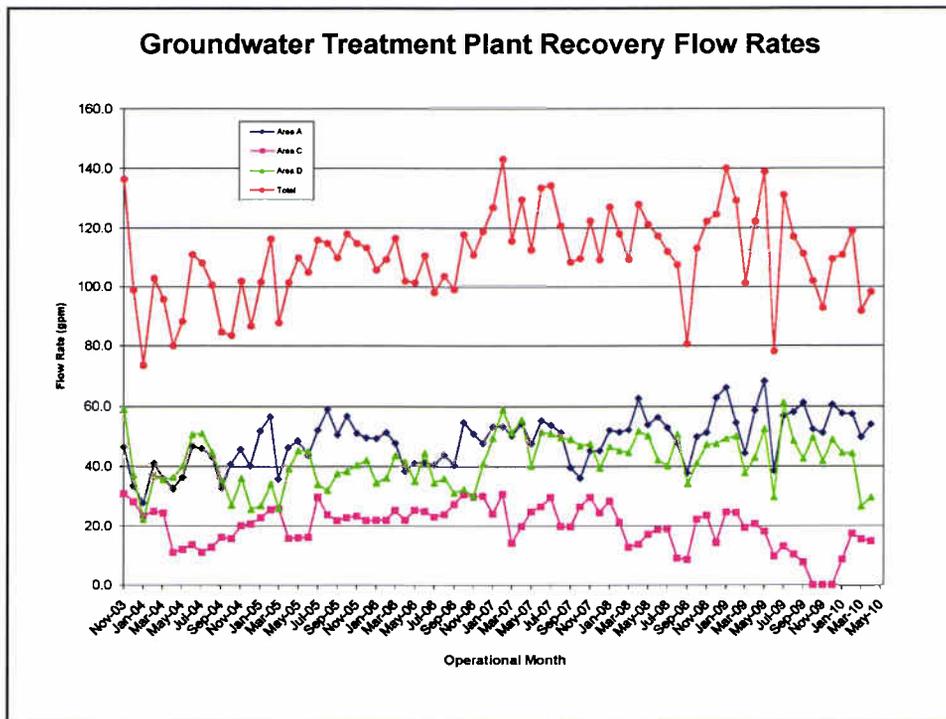
Average flowrates since Jan 2009:

- 56 gpm from Area A
- 13 gpm from Area C
- 43 gpm from Area D
- 112 gpm overall

670,388,035 gallons treated through 5/2010

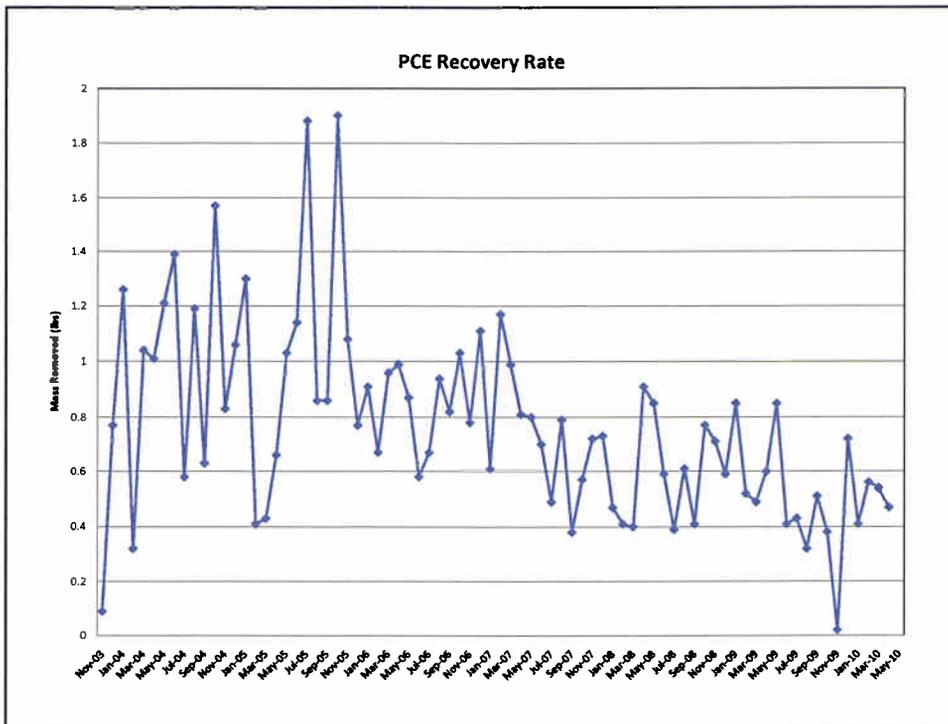
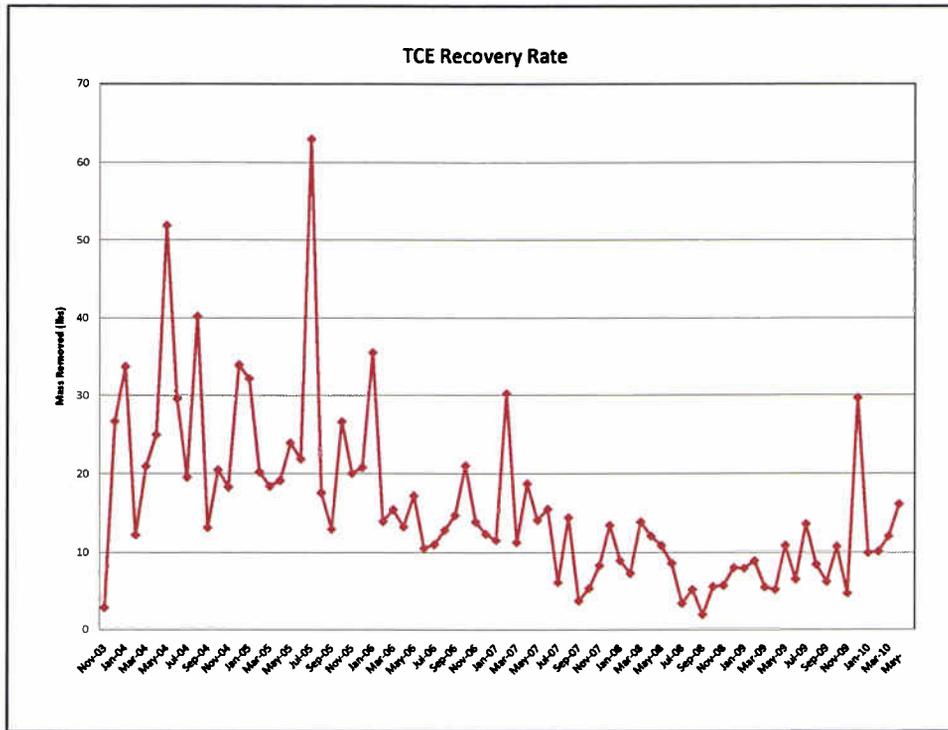
• Area C repaired and restarted on 1/22/2010 with
EW-C21 to remain off

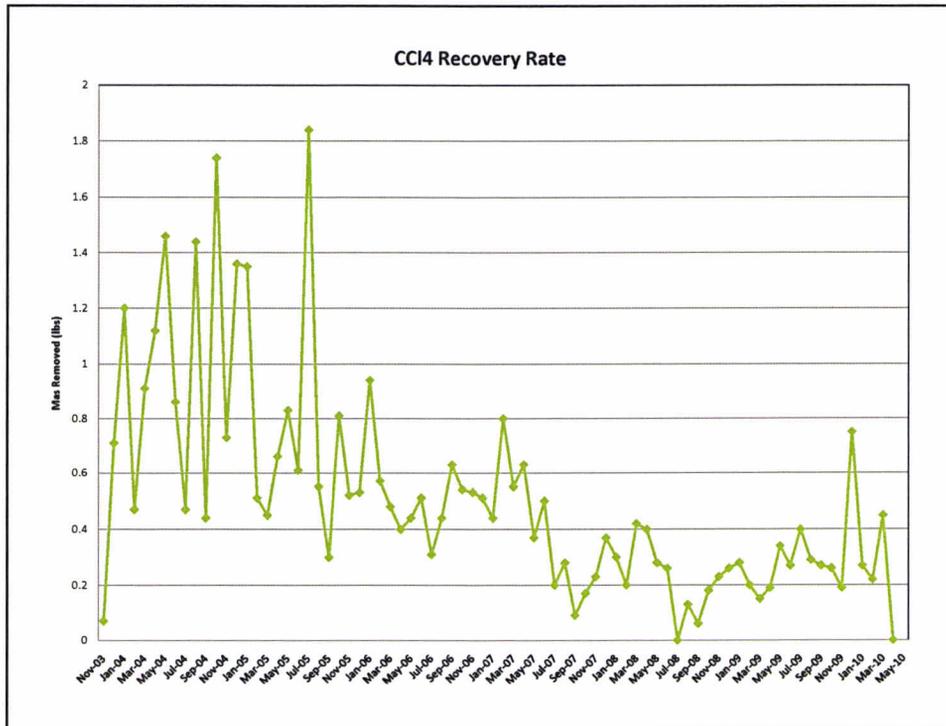
• Remaining Area D wells turned off on 8 June 2010



Mass Removal

- Cumulative dissolved-phase VOC recovery through April 2010 reporting period:
 - Tetrachloroethene (PCE) – 127 pounds (0.47 lbs in Apr)
 - Trichloroethene (TCE) – 4,512 pounds (16.5 lbs in Apr)
 - Carbon Tetrachloride (CCl₄) – 154 pounds (0.45 lbs in Apr)
- Currently most of TCE recovered is from Area A
- Most of PCE recovered is from Area A with the remainder from Area C
- TCA is not detected in the plant influent.





Activities

Shutdown Area D wells

- Delay in turning off all of Area D wells until EW-C18 was repaired.
- EW-C18 required repairs to vault to eliminate storm water run-off from flooding vault and shorting electrical components.
- EW-C18 pump turned on 25 May 2010.
- EW-D1, EW-D2 and EW-D3 turned off 8 June 2010.

Activities (con't)

- **Hexavalent Chromium (Cr⁺⁶) Removal**
 - Three wells [EW-A1 (28 μ g/L), EW-A2 (35 μ g/L), and EW-A19 (53 μ g/L)], have Cr⁺⁶ above the NPDES discharge permit limits.
 - Well flows in these wells reduced by 20%
 - Design/install pH adjustment system for improved Cr⁺⁶ removal and increased resin life

Future Activities

- **Evaluate removing air stripper and using liquid phase carbon**
 - With the reduction in flow and decrease in concentrations at the site, carbon may be a more efficient and cost effective remediation technology
- **Modify NPDES permit as necessary to accommodate any changes to GWTP**

Long-Term Monitoring Status

Report Status

- Recent reports submitted:

None

- Reports in progress:

None

- Upcoming LTM:

Annual sampling event (3rd Quarter FY 2010) completed in May 2010

NIRIS Monitoring Data

- Converted and migrated Warminster groundwater data in electronic format to NEDD
- Worked with TtNUS to create database forms
- Converted geospatial data to the ESRI format
- Coordinate data in State Plane Coordinate System NAD 83
- Sent NIRIS formatted pdf deliverables and NEDDs to TtNUS
- Uploaded data to NIRIS. Completed 8 June 2010.

Questions?