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PITT-05-6-044

May 17, 2006

Project Number 0182

Mr. Lonnie Monaco
BRAC Program Management Office Northeast
4911 South Broad Street
Philadelphia, Pennsylvania 19112-1303

Reference: CLEAN Contract No. N62472-03-D-0057
Contract Task Order 041

Subject: Restoration Advisory Board (RAB) Meeting Minutes of May 2, 2006
Former Naval Air Warfare Center (NAWC) Warminster, Pennsylvania

Dear Mr. Monaco:

Enclosed please find the minutes from the RAB meeting held on May 2, 2006. Copies of the minutes are being sent to the individuals identified on the distribution list.

Please contact me if you have any questions or comments.

Sincerely,

A handwritten signature in black ink that reads "Jeff Orient".

Jeffrey P. Orient
Project Manager

JPO/sic

Enclosure

c: Distribution List
File 0182



TETRA TECH NUS, INC.

DISTRIBUTION LIST

Bob Lewandowski (Navy)
Ron Sloto (USGS)
April Flipse (PADEP)
Tony Sauder (Pennoni)
Dave Fennimore (Earth Data)
Garth Glenn (TiNUS)
Rich Evans (ECOR)
Pat Schauble (ECOR)
Kathy Davies (U.S. EPA)
Andrew Barton (Battelle)
Carolyn Ohart (Battelle)
Norm Kelly (RAB Co-Chair)

**FORMER NAVAL AIR WARFARE CENTER (NAWC) WARMINSTER
MEETING MINUTES**

RESTORATION ADVISORY BOARD (RAB) MEETING NO. 104

REFERENCE: CLEAN CTO NO. 041

1. Meeting Date and Time: May 2, 2006, 9:40 AM to 12:15 PM
2. Location: Warminster Municipal Authority Board Room
3. Attendees: See Attachment 1 (attendance list)
4. Summary of Meeting Discussions: See below.

Introduction and Administrative Update

Mr. Lonnie Monaco, 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). Introductions were made for those in attendance.

Mr. Monaco and Mr. Bob Lewandowski (the BRAC Environmental Coordinator, or BEC, also of the BRAC PMO Office) outlined the recent changes to the Navy organization as it relates to the former NAWC Warminster. Mr. Monaco now works for MIDLANT as a liaison with the BRAC PMO office in his role as RPM for the former NAWC Warminster.

Navy Housing Update (Navy)

Mr. Lewandowski provided a current status update of the housing in the Shenandoah Woods area that had been transferred from NAWC Warminster to NAS Willow Grove upon the closure of NAWC Warminster. Since NAS Willow Grove is now to be closed, the housing will eventually be turned over to private sector buyers. There is also some housing along Jacksonville Road that the Navy will be transferring. Transfers of both the Shenandoah Woods housing and the housing along Jacksonville Road will be handled by NAS Willow Grove. Ms. Kathy Davies (U.S. EPA) asked what environmental issues the Navy anticipates during the release of these properties. Ms. April Flipse (PADEP) pointed out that there may be issues with PAHs in soils ("Site 5" soils) that need to be addressed prior to turning ownership of the parcels over to others. Mr. Lewandowski replied that one potential possibility could be for the Navy to transfer any requirements for cleanup to the developers that would purchase the properties. Ms. Flipse

pointed out that the developers could take the properties through the Act 2 process to address contamination concerns. There are no groundwater issues associated with the land parcels.

Mr. Tony Sauder (Pennoni Associates) asked what the general timetable is for transferring the properties. Mr. Lewandowski replied that an initial screening (surplus determination) to see if other federal agencies want the properties will be completed by May 9 (note that since the RAB meeting the surplus determination deadline has been extended by three months). Following the Federal Government's surplus determination, the LRA will then have 30 days to begin their "community outreach" which will include evaluating any interest by State and local government as well as homeless providers. Since NAS Willow Grove is not closing until 2011, the housing properties will continue to be required for the Navy personnel at NASJRB Willow Grove during that time, so no target date has been set for release of the properties. Ms. Davies asked that Mr. Dennis Orenshaw (the U.S. EPA RPM for the site) be kept informed as the process moves along. Mr. Lewandowski stated that he was trying to get all closure issues funneled through the U.S. EPA's NAS Willow Grove RPM to simplify the process.

Mr. Monaco provided a general historical overview of Installation Restoration Program (IRP) activities that have occurred for the parcels designated for release. A Record of Decision (ROD) is in place that addresses Site 5 soil. A general discussion of the transfer decision process and who participates in it from the Navy and regulatory agencies ensued.

WMA-13 Status (Navy)

Mr. Monaco asked Warminster Municipal Authority (WMA) representatives if an air stripper had been installed or was planned for municipal well 13 (WMA-13). He pointed out that the Navy had paid for past costs and agreed to fund the installation of an air stripper on WMA 13 as part of a settlement agreement reached between the Navy and WMA. Mr. Dave Fennimore (Earth Data, representing WMA) replied that it was his recollection that no final decision was ever made regarding the installation of a treatment system. Mr. Tim Hagey (WMA) asked if approval was required from the Navy prior to installing a stripper – Mr. Monaco asked that they contact the Navy through Tim Bergier (WMA attorney) if they want to install a treatment system. Mr. Jeff Orient (Tetra Tech NUS) asked if money for the air stripper had been provided by the Navy to WMA as part of the settlement, or if there was simply an understanding that the Navy would pay the cost if a stripper was installed. Mr. Monaco replied that the funding was to be provided if the treatment system was installed.

WMA-26 Status (Warminster Municipal Authority/RAB)

Mr. Fennimore expressed concerns over high levels of PCE now being seen at municipal well WMA-26, and asked for any ideas as to why the PCE concentrations in this well have increased significantly and are now higher than TCE concentrations. Ms. Davies suggested that the data indicates there is another contaminant source in the area – this idea was supported by Ms. Flipse and several Navy representatives. Ms. Flipse also stated that a private party is currently performing a Phase I/Phase II environmental site assessment along Louis Drive, but did not have any details regarding who it is and who their client is. Mr. Rich Evans (ECOR) stated that 905 Louis Drive (where well cluster HN-16S/I/D is located) is currently in the process of being sold. Mr. Sauder pointed out that CRC Chemicals (a local business) uses PCE. Mr. Fennimore asked about a preliminary assessment performed in the past by the U. S. EPA – Ms. Davies directed him to contact Mr. Drew Lausch who performed the assessment. Mr. Sauder and Mr. Orient pointed out that the contamination found at monitoring well cluster 52 (most notably HN-52S) has had a different chemical fingerprint from the contaminants found onbase, suggesting that an offbase source is contributing to the plume.

Mr. Fennimore asked if the extraction system operation had changed recently. Mr. Pat Schauble (ECOR) stated that the system is pumping a little more than usual. Mr. Evans pointed out that the long term drought in the area has depressed groundwater levels up to as much as 20 feet in the area. Mr Schauble provided the most recent sampling results for PCE (360 ug/L) and TCE (77 ug/L) at WMA-26. There was a general discussion of possible treatment processes that could be used to augment the current pump and treat remedy in Area A. Mr. Hagey expressed concern that the effluent PCE concentrations (up to 3 ug/L) are close to the MCL, and asked that the air stripper be upgraded. Mr. Monaco suggested that WMA go ahead with any changes that they feel that they need to make and submit an invoice to the Navy for payment. The Navy will either pay the invoice or deny payment and the lawyers can argue their cases, but in any event the public will be protected. The Navy will also review the settlement agreement to look at language addressing Navy/WMA roles regarding the potential presence of alternate or additional sources of contamination.

Mr. Schauble mentioned that PCE has been found at concentrations up to 14,000 ug/L in HN-52S (3rd quarter 2005). Ms. Davies pointed out that PCE concentrations in that range are nearing 10% of the solubility limit and suggest the potential presence of a DNAPL source. There was further general discussion of groundwater flow, contaminant concentrations, and potential contaminant sources in the area near the base and WMA-26. A path forward for further work

related to the issue of potential other sources and their impacts on WMA26 was laid out by Mr. Monaco, including:

- WMA should do whatever they feel is necessary to protect the public water supply.
 - Any related invoices should be submitted to the Navy for their consideration.
 - Lonnie will talk with Navy counsel regarding additional source investigation.

Mr. Lewandowski suggested a future technical meeting specifically targeted to discuss the WMA-26/additional contaminant source(s) issue. Mr. Monaco tasked ECOR to do an evaluation of the groundwater data and provide the evaluation in advance of the technical meeting. Tetra Tech NUS is to check their GIS database for the base to see what data is available regarding concentrations over time and provide any helpful information to ECOR to expedite the evaluation process. A meeting date and time of June 6, 2006 at 9:30 AM was set for this discussion, with the meeting to be held at the WMA Board Room. The Navy, PADEP, and the U.S. EPA are also to check into mechanisms/processes available for initiating additional investigations to look for other contaminant sources in the area.

Treatment System O&M/Performance Monitoring Update (ECOR)

Mr. Schauble provided an update on recent O&M/performance monitoring activities (see the presentation in Attachment 3). Mr. Sauder commented on ECOR's drawing of the plume isopleths and asked if the monitoring frequency could be increased for selected wells. Mr. Schauble and Mr. Evans replied that the monitoring program that ECOR implements has been set by the Technical Evaluation Group (TEG). Mr. Sauder recommended a different interpretation of how some of the groundwater flow maps are drawn. Mr. Orient suggested that Mr. Sauder provide alternate interpretations (maps) of the groundwater flow data to ECOR for their consideration, which can be presented and discussed at the next meeting.

Mr. Schauble also indicated that ECOR was experiencing difficulty in accessing the HN-66 well cluster (Aztec Machinery Company) and residential wells R6 (Young) and R7 (Martindell) for abandonment purposes, as the property owners were denying them permission to come onto the properties. Mr. Monaco indicated that he would look into it with Navy real estate personnel.

Groundwater Extraction and Treatment System Optimization Study (Battelle)

Ms. Carolyn Ohart (Battelle) provided an update regarding the optimization study. Comments on the draft document have been received from PADEP and Mr. Sauder, and Battelle is waiting on comments from the U.S. EPA. Ms. Davies stated that she hoped to provide U.S. EPA comments

within 2 weeks. Mr. Sauder asked about the plans for Area D, as he is in disagreement with the application of monitored natural attenuation for the plume associated with this area. Ms. Ohart indicated that Battelle is still evaluating MNA for Area D and that they feel strongly that it should be considered. Ms. Davies asked if biodegradation breakdown products were being observed or just a decrease in concentrations – Ms. Ohart indicated that a decrease in concentrations was primarily being seen. There was a general discussion of the concentrations observed within Area D over time, the lack of any identifiable discrete contaminant source, and the TEG decision to shut down a few extraction wells in Area D because of very low contaminant levels.

For Area C, Battelle is recommending that pumping be continued but at a lower rate. There was a general discussion of recent sampling results, including the high PCE levels found in replacement monitoring well DG-23A. Mr. Lewandowski asked whether another round of chemical oxidation should be considered for groundwater in Area C – Ms. Ohart felt that it would not be a good idea as the source location is still unknown. Mr. Lewandowski then asked whether additional source investigation should be undertaken – both Ms. Flipse and Mr. Evans indicated that much of Area C has been redeveloped by Ann's Choice Retirement Community. Mr. Ron Sloto (USGS) suggested looking into making HN-23A an extraction well since it has the highest contaminant levels of any well in Area C. A general discussion of potential investigation and/or alternate groundwater extraction options ensued. Both Mr. Monaco and Mr. Lewandowski favored looking at potential additional investigation activities first, then possible alternate remedial approaches.

CERCLA Five Year Review Update (Tetra Tech NUS)

Mr. Orient briefly summarized the CERCLA five year review process and provided a handout that describes the process and how it is being applied for the former NAWC (see Attachment 4). The Five Year Review document is due out in draft form by the end of May. Mr. Sauder asked whether the review looked at alternate remedial options - Mr. Orient indicated that evaluation of alternate approaches is an optimization activity, not a five year review topic. Ms. Davies mentioned that vapor intrusion from shallow groundwater (<100 ft in depth) needs to be considered in the five year review process. The evaluation needs to consider contaminants that exceed MCLs and for contaminant plume and the concentrations in the most shallow portion of the plume (i.e. the water table).

Miscellaneous Topics and Issues

No miscellaneous topics or issues were brought up for discussion.

Next Meeting Date

The next RAB meeting date was tentatively set for November 2006, exact date and time to be determined.

The meeting was adjourned at approximately 12:15 P.M.

**ATTACHMENT 1
ATTENDANCE LIST**

Warminster RAB Meeting

5/2/06

Name	Affiliation	Phone/Email
Jeff Orient	Tetra Tech NUS	412/921-8778 jorienta@tetus.com
Bob Lewandowski	NAVY PROGRAM MGT. OFFICE	(215) 899-4908 robert.f.lewandowski@NAVY.MIL
LONNIE MONACO	NAVY RRM	(610) 595-0567 x164 orlando.monaco@navy.mil
Kathy Davies	EPA	(215) 814-3315 davies.kathy@epa.gov
RICH EVANS	ECOR SOLUTIONS	(610) 431 8731 evans@ecor-solutions.com
Patrick Schaubert	ECOR Solutions	610 431-8731 schaubert@ecor-solutions.com
TIM HAGEY	Warminster Authority	215 675 3301 x 202 timh@warminsterauthority.com
Tony Sauder	Pennsylv Assoc/Warminster	215-222-3000 tsauder@pennva.org
NORM KELLY	RAB (CO-CHAIR)	(215) 675-1157 .com
Carolyn Ohart	Battelle	215-504-5003 ohartc@battelle.org
APRIL FLIPSE	PADEP	484-250-5721 aflipse@jete.pa.us
Ron Sloto	US Geological Survey	610-321-2324 x 212 rsloto@usgs.gov
Dave Ferrisone	Earth Data	610 524-9466 dferrisone@earthdata.net

**ATTACHMENT 2
MEETING AGENDA**

**NAWC WARMINSTER
TECHNICAL SUBCOMMITTEE/RAB MEETING**

2 May 2006 9:30 AM

WMA Board Room

415 Gibson Ave

Warminster, PA

MEETING AGENDA

Administrative Update – Intros and Roles/Responsibilities

Minutes of the Last Meeting (Tetra tech NUS)

Navy Housing – Jacksonville Road/Shenandoah Woods

Treatment System O&M Update (ECOR)

Performance Monitoring Update (ECOR)

Groundwater Recovery System Optimization (Battelle)

5-Year Review Update (Tetra Tech NUS)

Status Update on WMA-13 Treatment System (WMA/Navy)

Miscellaneous Topics and Issues

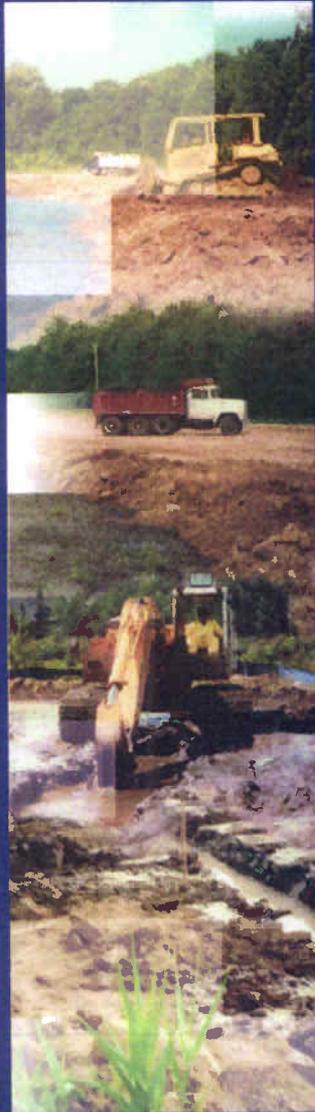
Time and Location of Next Meeting: November 2006 - Date to be determined

Directions to the WMA Board Room:

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.

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.

**ATTACHMENT 3
ECOR UPDATE**



ECOR Solutions, Inc.
Restoration Advisory Board
Meeting for
NAWC Warminster

2 May 2006

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



Topics of Discussion

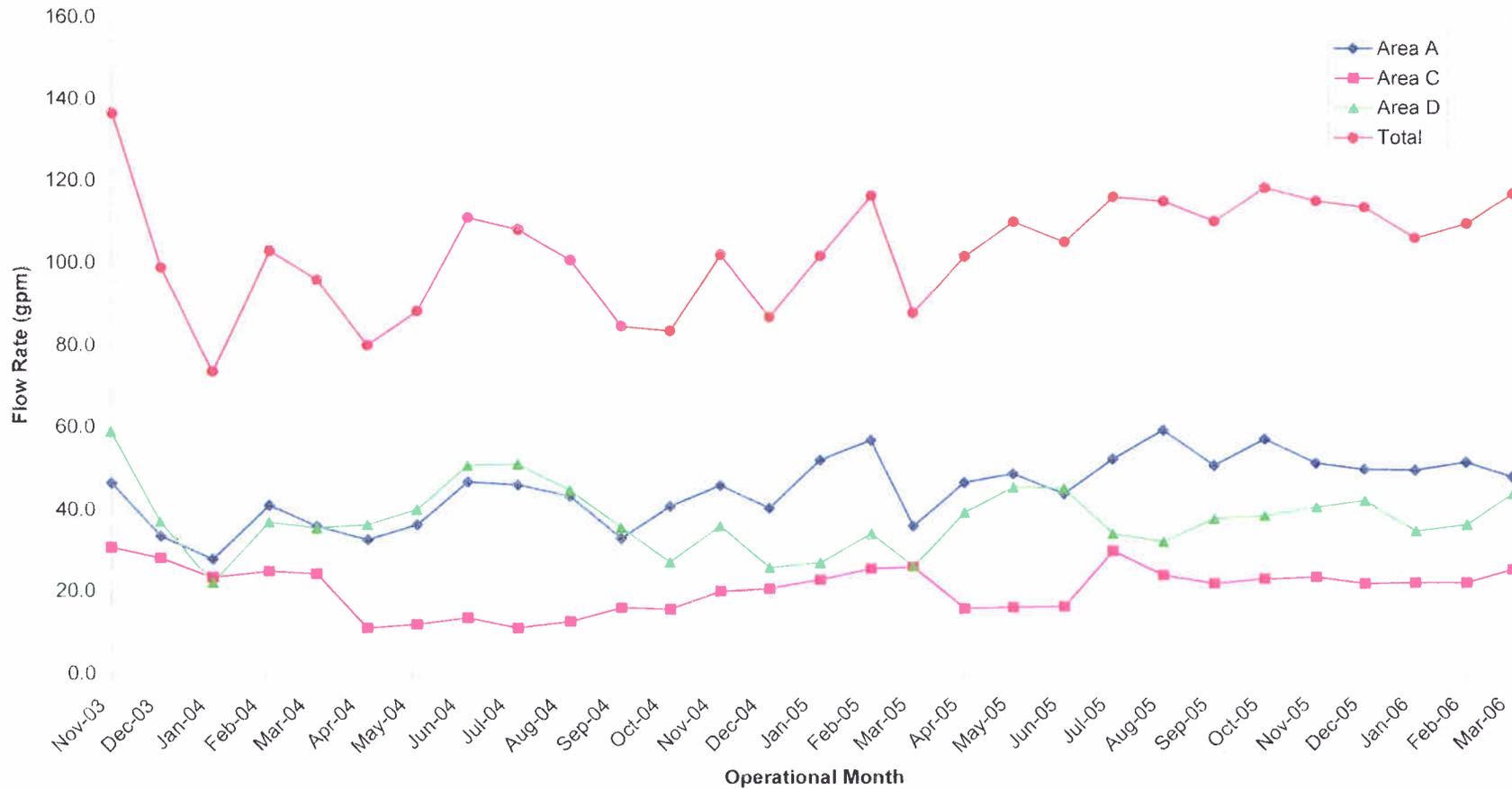
- **Administrative Update**
- **Navy Housing – Jacksonville Road/Shenandoah Woods**
- **GWTP Performance (ECOR)**
- **Performance Monitoring (ECOR)**
- **GWTP Optimization (Battelle)**
- **5-Year Review (Tetra tech NUS)**
- **WMA-13 Treatment System (WMA/Navy)**
- **Miscellaneous Topics, Issues, and Discussion**

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

Groundwater Treatment Plant Performance

- 425,170,076 gallons recovered and treated (1999 start up through March 2006 reporting period).
- System up-time >95%.
- Cumulative dissolved-phase hydrocarbon recovery through March 2006 reporting period:
 - Tetrachloroethene (PCE) – 95 pounds
 - Trichloroethene (TCE) – 3,975 pounds
 - Carbon Tetrachloride (CCl₄) – 138 pounds
- Currently, 97% of TCE recovered is from Area A with the remainder from Area D.

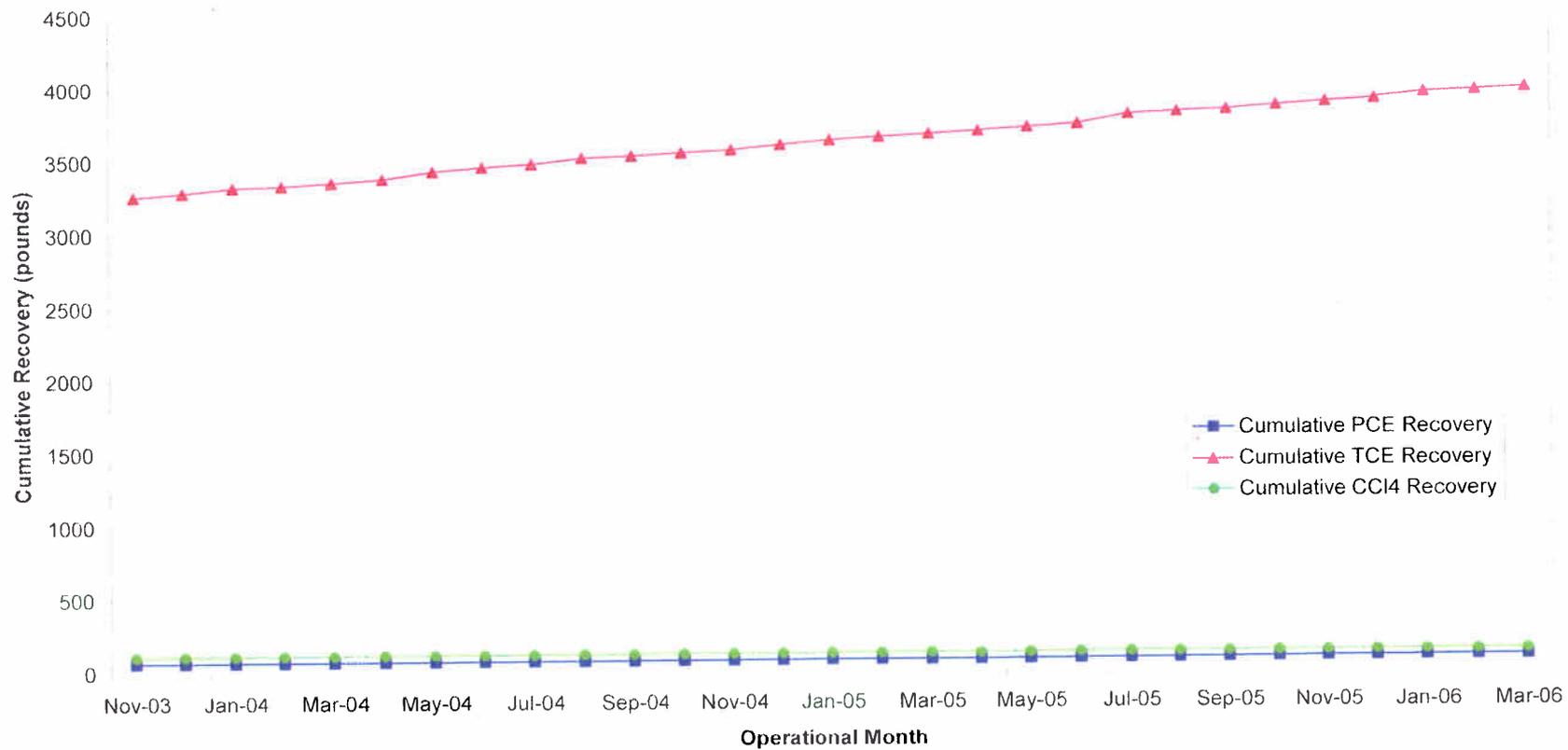
Groundwater Treatment Plant Recovery Flow Rates



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



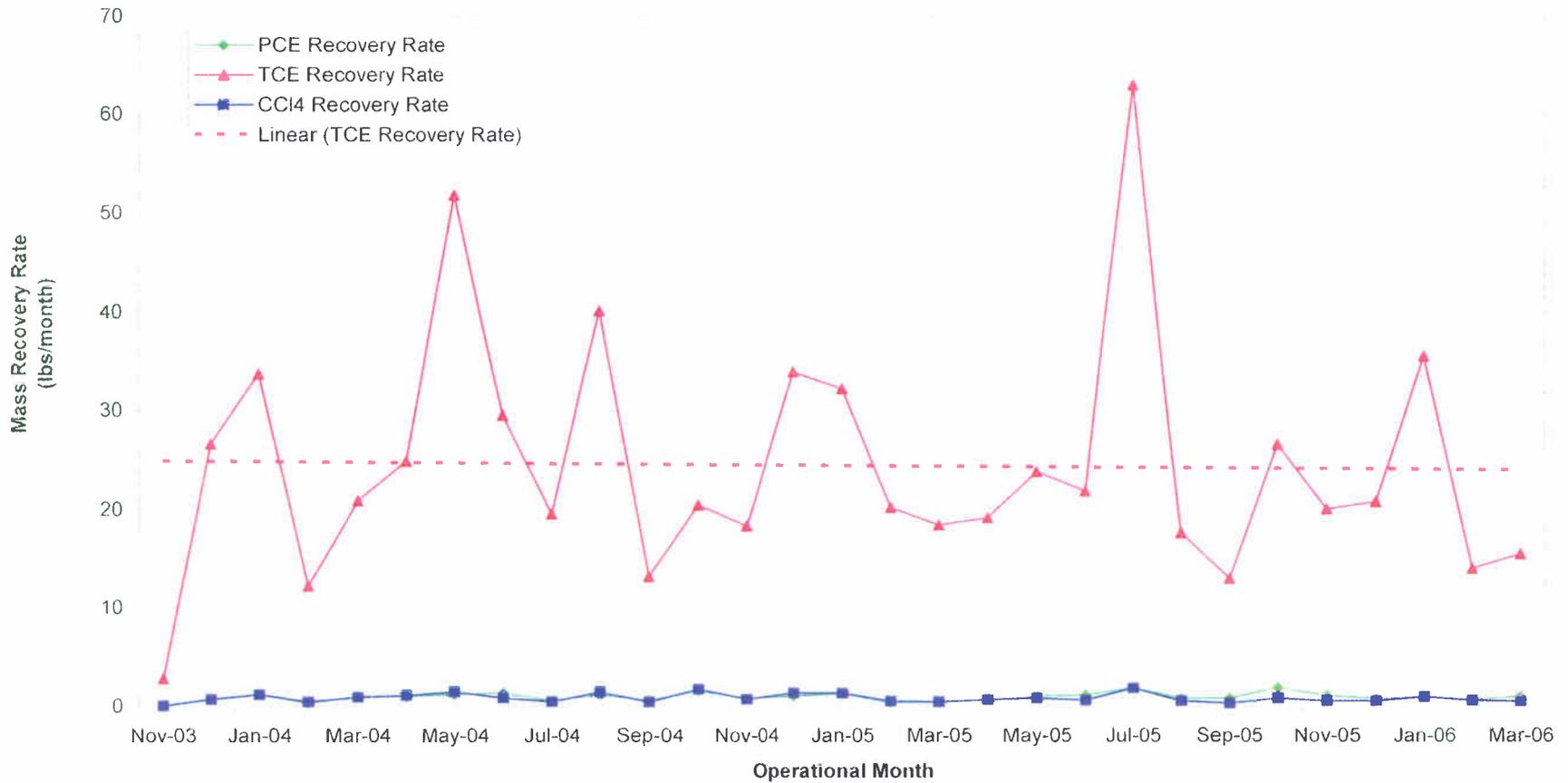
Dissolved-phase Cumulative Mass Recovery



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Dissolved-phase Monthly Recovery Rates



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Performance Monitoring (LTM)

- Sampling events completed by ECOR:
 - 3rd Quarter FY 2004 – April and May 2004 through
 - 3rd Quarter FY 2006 – April 2006
- Recent reports submitted:
 - 4th Quarter FY 2005 (Final)
 - 1st Quarter FY 2006 (Draft)
- Reports in progress:
 - 2nd Quarter FY 2006 (January 2006)
 - 3rd Quarter FY 2006 (April 2006)

Follow-up Items

- Gain Access to HN-66I (Aztec Machinery Company), R-6 (Young residence), and R-7 (Martindell residence) through Navy Real Estate to abandon.
- Implement Final Optimization Study recommendations for GWTP modifications.

**ATTACHMENT 4
TETRA TECHNUS UPDATE**

Fact Sheet: Five Year Review

April 2006

This fact sheet was developed to notify the Restoration Advisory Board (RAB) that the second Five-Year Review at Naval Air Warfare Center (NAWC) Warminster has begun as part of the Installation Restoration Program (IRP). The IRP process at NAWC Warminster is being used to transfer the property for reuse and redevelopment.

The Five-Year Review

The Five-Year Review applies to sites where remedial actions have been or are being conducted under Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The U.S. Environmental Protection Agency (U.S. EPA) is responsible for making sure that Five-Year Reviews are conducted at National Priorities List (NPL) Federal facility sites. However, by Executive Order 12580, NPL Federal facilities sites under the jurisdiction, custody, or control of the Department of Defense (DoD) relieves the U.S. EPA of this responsibility and delegates the responsibility to the DoD. The Navy is the lead agency responsible for the Five-Year Review at NAWC Warminster, working with the U.S. EPA and Pennsylvania Department of Environmental Protection (PaDEP) through the Federal Facilities Agreement.

The purpose of the five-year review is to determine whether a remedial action taken at a site is protective of human health and the environment. Where remedial actions are still under construction, the five-year review confirms that the immediate threats have been addressed and that U.S. EPA expects the remedial action to be protective when the remedial actions are complete. The five-year review evaluates the implementation and performance of the selected remedial action. The decisions made during the selection of the remedial action are not reconsidered during the five-year review. The five-year review also identifies deficiencies and makes recommendations to correct these deficiencies.

Five-Year Review Process

Facilities with multiple Operable Units (OUs) address the OUs and remedial actions at the facility for which there is a Record of Decision (ROD) in a 5-Year Review report that addresses all of the OUs. The "triggering" event for the comprehensive Five-Year Review is the within five years of the signature of the first Five-Year Review Report.

The technical assessment conducted during the five-year review examines three questions:

- Question A – Have conditions external to the remedial action changed since the remedial action was selected?
- Question B – Has the remedial action been implemented in accordance with the decision documents?
- Question C – Has any risk information changed since the remedial action was selected?

The five-year review process includes several steps to answer these questions. The steps include:

- Review of documents
- Interviews
- Site Inspection
- Review of applicable or relevant and appropriate requirements
- Review of site-specific, risk-based levels, if applicable
- Review of monitoring and sampling data, if applicable
- Review of documentation of operation and maintenance, if applicable

The information obtained in the steps above is assessed and is focused on answering the three questions for the technical assessment. Based on the assessment, the Five-Year Review Report documents deficiencies, provides recommendations, identifies required actions, includes a protectiveness statement, and provides statement regarding when the next review is required and what tasks should be performed.

The protectiveness statement documents the determination of whether the remedial action is protective of human health and the environment. The protectiveness statement is accompanied by a supporting discussion of the major points used to develop the statement. For facilities with multiple OUs, separate protectiveness statements are written for each OU. When the OUs have reached construction completion, a facility-wide protectiveness statement is developed.

Five-Year Review at NAWC Warminster

This is the second five-year review for the NAWC Warminster sites. To date, there are 10 OUs (two interim remedial actions and 11 final remedial actions [five of the 11 final actions are no further action]) in the IRP where remedial actions have been or are being conducted under Section 121 CERCLA. The actual and potential hazardous waste disposal locations at the base were originally grouped into four areas: Area A (Sites 1, 2, 3, and the Impoundment Area), Area B (Sites 5, 6, and 7), and Area C (Sites 4 and 8), and a fourth general area, Area D, that primarily includes the main building complex at the base and lies west of Jacksonville Road.

The "triggering" action for the Five-Year Reviews was the initiation of the remedial action for OU-1 that began on January 15, 1995. Due to the fact that hazardous substances, pollutants, or contaminants remain at some of the OUs at NAWC Warminster above concentrations that allow for unlimited use and unrestricted exposure, Five-Year Reviews are required. Currently, the steps of the Five-Year Review process are being conducted to answer the questions that are part of the technical assessment. The Draft Five-Year Review Report will be submitted in late May 2006 for review. The final Five-Year Review Report will be placed in the Information Repository when it is completed.

This repository contains program documents, including technical reports prepared in connection with the IRP at NAWC Warminster and is available for your review. The Administrative Record for NAWC Warminster is also available for public review. The Administrative Record contains files of specific documents and correspondence that form the basis for site cleanup decisions.

**Table 1
Site Description Table
NAWC Warminster 5-Year Review**

OU	AREA/ SITE NO.	CONTAMINATED MEDIA	INTERIM/ FINAL REMEDY	REMEDY	STATUS
1	A	Shallow groundwater	Interim	Groundwater extraction wells, treatment system, sampling, vapor-phase carbon adsorption	--
1A	A	Groundwater	Final	Continue with OU-1 remedy	Operation & Maintenance and Long Term Monitoring
1B	B	Groundwater	Final	No further action	Completed
2	C	Domestic well water for residences near the base	Final	Connected to local water treatment authority	Completed
3	C	Groundwater	Final	GW extraction, O&M, OPS	Operation & Maintenance and Long Term Monitoring
4	D	Groundwater	Interim & Final	GW extraction, O&M, OPS	Operation & Maintenance and Long Term Monitoring
5	C/Site 8	Soil, sediment, and surface water	Final	No further action	Completed
6	C/Site 4	Soil, sediment, and surface water	Final	No further action	Completed
7	B/Sites 6 & 7	Soils and wastes	Final	2-foot soil cover	Five-Year Reviews
8	D	Soil	Final	No further action	Completed
9	A	Soil, surface water, and sediment	Final	Erosion & Sedimentation Controls	Operation & Maintenance
10	B/Site 5	Soil, surface water, and sediment	Final	No further action	Completed