



TETRA TECH

PITT-11-07-042

November 15, 2007

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 November 1, 2007
Former Naval Air Warfare Center (NAWC) Warminster, Pennsylvania

Dear Mr. Monaco:

Enclosed please find the minutes from the RAB meeting held on November 1, 2007. 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,

Jeffrey P. Orient
Project Manager

JPO/sic
Enclosure

C: Ron Sloto (USGS)
Jim Burke (PADEP)
Tony Sauder (Pennoni)
Dave Fennimore (Earth Data)
Garth Glenn (TiNUS)
Pat Schauble (ECOR)
Kathy Davies (U.S. EPA)
Russell Sirabian (Battelle)
Norm Kelly (RAB Co-Chair)
Dennis Orenshaw (U.S. EPA)
Charlene Creamer (U.S. EPA)
Curt Frye (Navy)
Bob Lewandowski (Navy BRAC PMO)
Mike Nines (MGKF Law)
Chris Candela (ATC Associates)
File: 0182

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

RESTORATION ADVISORY BOARD (RAB) MEETING NO. 108

REFERENCE: CLEAN CTO NO. 041

1. Meeting Date and Time: November 1, 2007, 9:40 AM to 11:00 AM
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).

Comments were solicited on the minutes from the previous meeting, with no comments offered by those in attendance. Mr. Monaco introduced Mr. Curt Frye, who will be taking over as the Navy RPM for NAWC Warminster as Mr. Monaco is retiring effective February 2, 2008.

Action Item Review

Action items from the August 1, 2007 RAB meeting were reviewed. The action items from the August 2007 meeting are summarized below:

1. **Mr. Chris Candela (ATC Associates) was to check into the Ann's Choice building construction details to see if a vapor barrier was installed below the floor slab.**
 - Mr. Candela verified that a vapor barrier is present beneath the floor slab, and sent an email to the TEG documenting this. Mr. Tony Sauder (Pennoni Associates) requested a copy of the email.
2. **Mr. Jim Burke (PADEP) was to send out a copy of the letter sent by PADEP to CRC Chemicals requiring them to perform site investigation activities.**

- Mr. Burke sent copies of the letter to the RAB via Mr. Jeff Orient (Tetra Tech NUS) shortly after the August RAB meeting. He also brought copies of the letter to the RAB meeting and distributed them. He stated that he had recently received a letter from CRC Chemicals (in October) informing PADEP that contamination had been found in groundwater and requesting that the site be entered into the Act 2 program, and distributed copies of this letter. Mr. Burke also stated that he had directed CRC to include WMA Well 26 in their site investigation. A site characterization report is due to be submitted by November 4.

Mr. Dave Fennimore (Earth Data) asked if Act 2 was an appropriate path given that the site is within the plume of a CERCLA site and their potential future status as a PRP under CERCLA. Mr. Walter Payne (PADEP) indicated that the Act 2 path is an appropriate approach for the site and does not eliminate any CERCLA PRP responsibilities. Mr. Burke pointed out that since the contamination is currently being attributed to spills during product loading/unloading instead of storage tank releases, the site does not fall into the UST program but does fit into the Act 2 program.

Mr. Sauder asked who would be given copies of the site investigation report once it is submitted to PADEP. Mr. Burke indicated that the TEG would get copies, and that he would ask CRC Chemicals counsel if they would be willing to provide a copy to Warminster Township.

3. The TEG was to meet and decide the next course of action for the Area C source investigation.

- Mr. Orient indicated that the TEG had met immediately following the August RAB meeting and a decision was made to investigate the geophysical anomaly found near HN-23A and to install one more well downgradient/downdip of HN-23A, for monitoring purposes and to potentially serve as an extraction well. He also provided an update on the Area C work, indicating that the geophysical anomaly turned out to be a thin layer of ash with concrete fragments. The new well drilled had the same PCE concentration as HN-23A (120 ug/L), but also has a low yield.

4. Battelle was to issue a changed page for the optimization study report to reflect the clarification requested at the August 1 RAB meeting.

- The requested change has made by Battelle and the revised page was sent out to the report recipients for insertion into the Optimization Study report.

Offsite Investigations

Ms. Charlene Creamer (U.S. EPA site assessment group) provided an update on their efforts to look into potential additional contaminant sources in the Louis Drive area. A windshield survey of the area has been performed, and file records and aerial photos are being reviewed.

Mr. Burke indicated that the PADEP update on CRC Chemicals had been covered during the action item review.

Mr. Monaco stated that Mr. Mike Nines (MGKF Law) was unable to attend the RAB meeting, however he had provided a status update for 905 Louis Drive to Mr. Monaco via email. There is no new sampling data to report – a site investigation report is coming out that proposes a background standard for the site and indicates that there are offsite sources for the groundwater contamination found onsite – an adjacent landowner for the shallow contamination and the Navy for the intermediate and deep contamination. Mr. Nines indicated in his email that they anticipate getting a release of liability from PADEP based on the results of their work.

Mr. Vince Fioravanti, a real estate developer planning to build a small retail/office complex near Site 3, was invited to the RAB by Mr. Monaco to discuss his project as he is looking for guidance in regards to the installation of a sanitary wastewater line through a portion of Site 3 where an excavation control easement exists. Mr. Fioravanti was seeking Navy approval for the excavation and trying to determine whether any special requirements exist. After some general discussion, Mr. Orient suggested that they proceed with the excavation when ready and notify the Navy if anything unusual is encountered; otherwise backfill the excavation with the same materials that were excavated. Mr. Monaco concurred with this approach. Mr. Sauder suggested that the Navy have someone present to observe the excavation activities; Mr. Fioravanti stated that he would notify the Navy several days before the excavation is to occur to provide them with time to arrange for oversight. Mr. Fennimore asked if the planned excavation would cross the area where the groundwater transfer line from Area C exists. Mr. Monaco and Mr. Fioravanti indicated that it would not. Mr. Pat Schauble (ECOR) suggested that the location of the lines be checked one final time to ensure that the excavation is outside of the transfer line corridor.

Mr. Fioravanti also indicated that his firm was looking at developing the large paved area immediately south of site 3, and asked if stormwater infiltration would be allowed. Mr. Ron Sloto (USGS) pointed out that a prior request, associated with the county morgue construction, to infiltrate stormwater in the area had been denied as the large-scale infiltration would substantially

change the flow dynamics in the area of the OU-1A groundwater extraction system. Ms. Kathy Davies (U.S. EPA) concurred that this would be problematic and a consensus was reached that stormwater infiltration would not be acceptable in this area. Mr. Fioravanti asked for a map of groundwater extraction well and subsurface line locations as an aid to avoiding them during construction activities; Mr. Monaco indicated that a map would be provided to them.

Mr. Dennis Orenshaw (U.S. EPA RPM) asked about the structure and content of the excavation easements. Mr. Bob Lewandowski (Navy BRAC PMO) said that the Navy would review the ROD and associated easements and provide the easement requirements to Mr. Fioravanti.

Area C Source Assessment

In addition to the Area C summary provided in the review of action items, Mr. Orient indicated that the Area C Source Assessment report is under preparation and will likely be released in draft form in November.

Plant Operation/LTM Update

Mr. Will Torres (ECOR) provided a presentation updating the RAB on treatment plant operations and long term monitoring activities. The presentation is included as Attachment 3. Mr. Fennimore asked whether dichloroethene is present at significant concentrations. Mr. Orient indicated that historic data provided by ECOR indicates only low concentrations of dichloroethene in onsite wells, with analytical results mostly non-detect and ranging up to the 10's of ppb.

Mr. Schauble stated that an application has been submitted for the new NPDES permit for the treatment plant. A notice has also been put into the local paper – originally it wasn't felt to be required since the site is under CERCLA, however after further review a decision was made to go ahead with the notice.

Mr. Sauder asked if there is any data showing the effects of the optimization activities implemented to date. Mr. Schauble indicated that the only effect seen to date is an increase in flow to the treatment plant. Mr. Sauder also asked about the status of the new extraction well planned for adjacent to HN-69D. Mr. Monaco indicated that ECOR would be tasked with the installation of the new well in the 2nd quarter of FY 2008.

Ms. Carolyn Scala (Battelle) asked if there have been any observed changes since extraction well D4 was taken off line. Mr. Schauble indicated that it was shut down on May 4 and there are no new observations to date.

Mr. Sauder asked that future quarterly monitoring reports include a summary outline of what information is supposed to be included in each of the submittals through the year, as it is difficult to determine the completeness of each individual submittal given that some are supposed to be more streamlined than others.

Post-ROD Monitoring at OU-10

Mr. Orient indicated that the draft OU-10 Sampling Report had been sent out on October 29. He briefly summarized the results of the 2007 round of sampling, indicating that the results were mostly similar to background levels and suggesting that there are minimal impacts from the Area B Navy sites. Mr. Sauder asked that the report conclusion section be supplemented by adding some of the observations discussed earlier in the report. A due date was established for submittal of review comments as the end of the week following Thanksgiving (November 30).

WMA Update

Mr. Fennimore indicated that Warminster Municipal Authority (WMA) will be submitting a letter to the Navy asking for approval of the proposed treatment system designs. As soon as the Navy approves the design, funding for the project will be approved and construction started.

Fractured Rock Conference Presentation

Mr. Orient briefly summarized the NAWC Warminster case history presentation regarding the design and implementation of the OU-1A groundwater remedy that was given at the EPA/NGWA Fractured Rock Conference in September, co-authored by himself and Mr. Monaco, Ms. Davies, and Mr. Sloto. Copies of the accompanying technical paper that was published were provided to interested RAB members. Ms. Davies, Mr. Sloto, and Mr. Lewandowski also provided additional observations regarding the conference in general and the reaction to the NAWC presentation/paper. The iterative approach taken for the design and implementation was strongly endorsed by EPA as a preferred approach to remedy implementation at fractured rock sites.

Miscellaneous Topics and Issues – Action Items

Action Items identified at the conclusion of the meeting include:

- The Navy is to look into ROD and easement issues related to Site 3 soils.
- The Navy is to provide a layout drawing to Mr. Fioravanti showing the locations of extraction system-related subsurface lines crossing Site 3.
- PADEP is to send out copies of the CRC report as appropriate and the letter requesting that CRC Chemicals include WMA 26 in their site investigation.
- WMA is to provide an approval request letter to the Navy for the proposed treatment system designs.

Mr. Norm Kelly (RAB Co-Chair) informed that RAB that the Federal Lands Reuse Authority (FLRA) for NAWC Warminster has completed it's mission and will cease to operate, pending submittal/approval of some final paperwork.

Next Meeting Date

The next RAB meeting date was set for January 30, 2008 at 9:30 AM in the WMA Board Room.

The meeting was adjourned at approximately 11:00 AM.

**ATTACHMENT 1
ATTENDANCE LIST**

NAWC WARMINSTER
TECHNICAL SUBCOMMITTEE/RAB MEETING

DATE: Nov. 1, 2007

| NAME | AFFILIATION | PHONE | EMAIL |
|------------------|-------------------------|-------------------|---------------------------------|
| Jeff Orient | Tetra Tech | 412/921-8778 | jeff.orient@tetratech.com |
| Ron Soto | U.S. Geological Survey | 610-321-2434x212 | RASLOTO@USGS.GOV |
| Kathy Davies | EPA | 015-814-3315 | davies.kathy@epa.gov |
| LONNIE MONACO | US NAVY | 215 897-4911 | orlando.monaco@navy.mil |
| James R Burke | PA DEP | 484-250-5779 | Jaburke@STATE.PA.US |
| John B. Kime | PA DEP | 484-250-5155 | jeekime@state.pa.us |
| Patrick Schauble | ECOR Solutions | 484-887-7510 | Schauble@ecor-solutions.com |
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| JENNIS ORENSHAW | US EPA | 215-814-3361 | ORENSHAW.JENNIS@EPA.GOV |
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| Curt Frye | USNAVY | 215-897-4914 | curtis.frye@navy.mil |
| NORM KELLY | CO-CHAIR - RAB | 215-675-1157 | N.A |
| Jim Krueger | Warm Twp | 215-443-5423 | |
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**ATTACHMENT 2
MEETING AGENDA**

**NAWC WARMINSTER
TECHNICAL SUBCOMMITTEE/RAB MEETING**

01 November 2007 9:30 AM

**WMA Board Room
415 Gibson Ave
Warminster, PA**

MEETING AGENDA

Administrative Update

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

Off-Site Investigations

- EPA update on Louis Drive assessments
- PADEP update on CRC Chemicals
- 905 Louis Drive update (Mike Nines)

Area C Source Assessment Status

- Status of site investigation

Plant Operation/LTM Update

- Operating status
- LTM update

Post-ROD Monitoring at OU-10

- Status Update

WMA Update

- Status of Wells #13 and #26

Fractured Rock Conference Presentation

Miscellaneous Topics and Issues – Action Items

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

Action Items

The following action items were identified at the wrap-up of our last meeting:

- 1) Mr Candela is to check Ann's Choice building construction details to see if a vapor barrier was installed below the slab.
- 2) Mr. Burke is to send out a copy of the letter sent by PADEP to CRC Chemicals.
- 3) The TEG is to meet and discuss the next course of action for the Area C source investigation.
- 4) Battelle is to issue a changed page for the optimization study to reflect the clarification requested at the August 1 RAB meeting.

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

1 November 2007

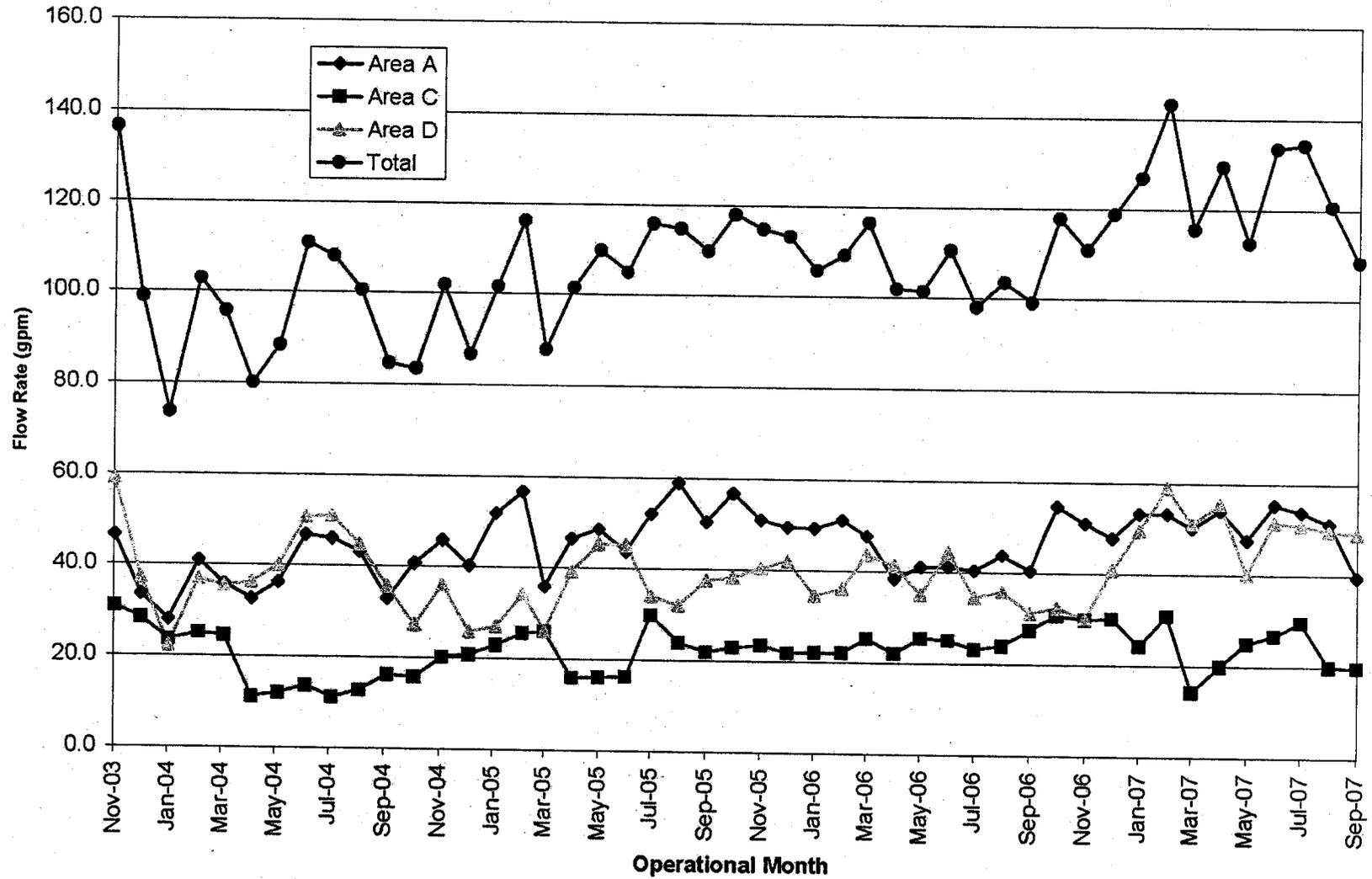
Delivering environmental construction, operations and remediation solutions to industry and government



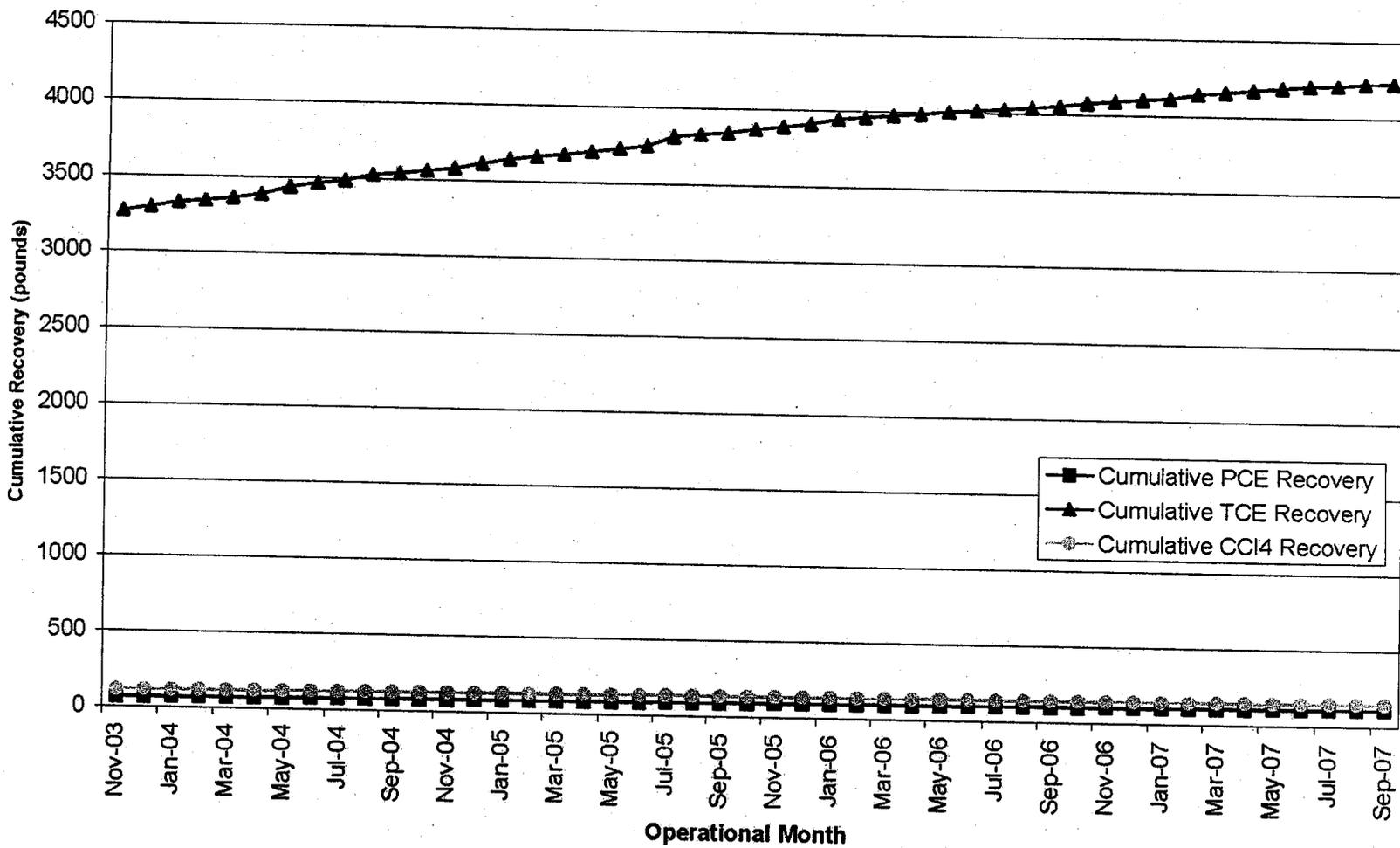
Groundwater Treatment Plant Performance

- 514,814,954 gallons recovered and treated (1999 start up through September 2007 reporting period).
- System up-time >95%.
- Cumulative dissolved-phase hydrocarbon recovery through September 2007 reporting period:
 - Tetrachloroethene (PCE) – 109 pounds
 - Trichloroethene (TCE) – 4,217 pounds
 - Carbon Tetrachloride (CCl₄) – 146 pounds
- Currently, 97% of TCE recovered is from Area A with the remainder from Area D.

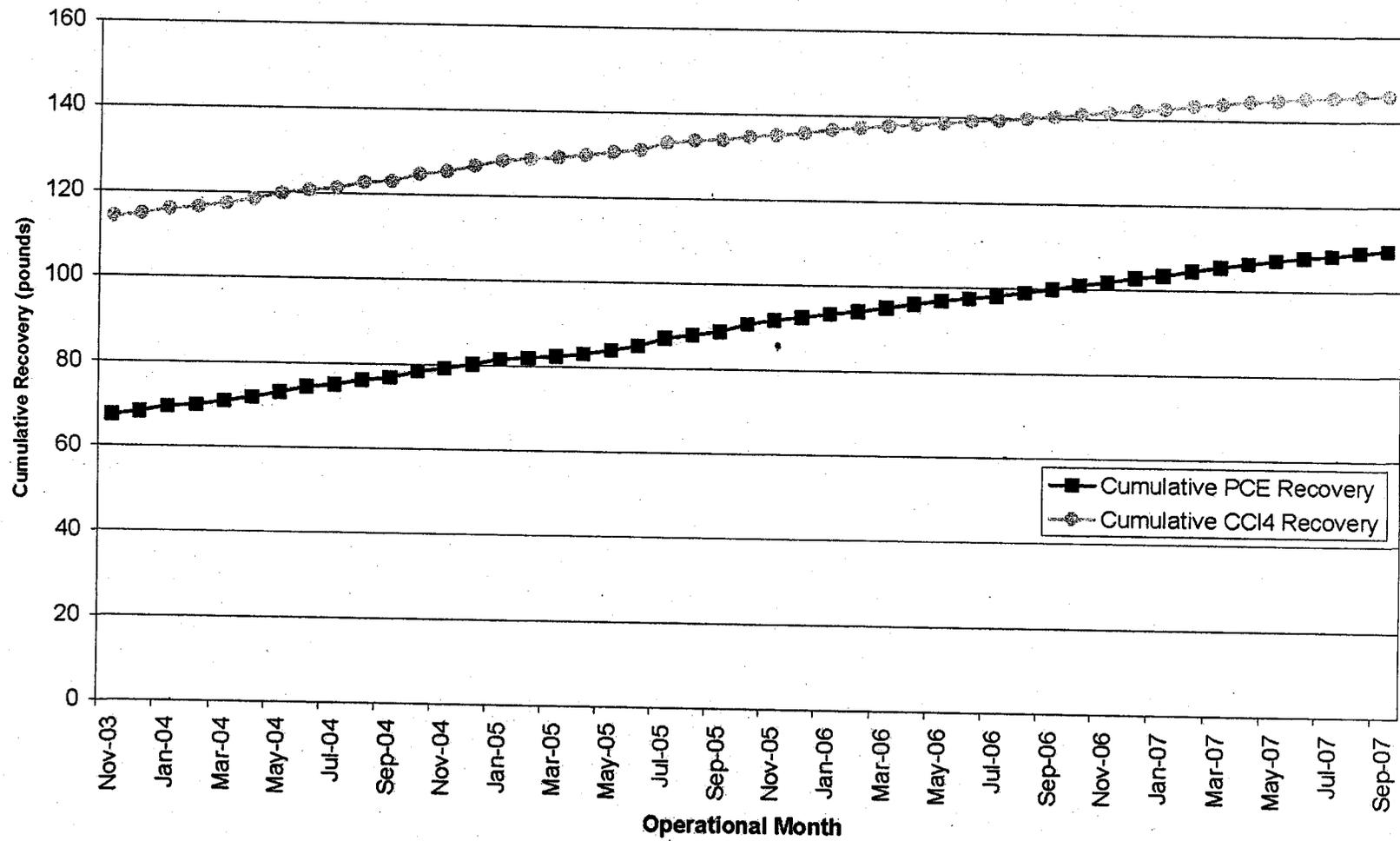
Groundwater Treatment Plant Recovery Flow Rates



Dissolved-phase Cumulative Mass Recovery



Dissolved-phase Cumulative Mass Recovery



Optimization Report Recommendations (GWTP)

Recommendations In Progress

- Install a new extraction well near monitoring well HN-69D.
 - Adjust water level set points and extraction flow rates in Area A
 - Modify Long Term Monitoring Program after new well is connected to the GWTP
- NPDES and RFD applications were filed with the PADEP in March 2007 to update all permit requirements for the modified treatment system.
- Install an air stripper with higher VOC removal efficiency, and eliminate the need for liquid-phase GAC (Pending NPDES).

Optimization Report Recommendations (GWTP)

Recommendations Implemented

- Discontinued pumping from Area D extraction well EW-D4.
- The EQ tank VFD controls were reprogrammed in accordance with recommendations in the draft of this optimization report.
- Hex chromium samples are collected monthly from the ion exchange influent and effluent.
- TSS/Metals treatment equipment was taken offline.
- An additional VGAC unit was installed and is operating in series with the two existing units.
- An RFD was completed for air emissions. No permit was required

Performance Monitoring (LTM)

- Sampling events completed by ECOR:
 - 4th Quarter FY 2007 – July 2007
through
 - 1st Quarter FY 2008 – October 2007
- Recent reports submitted:
 - 2nd Quarter FY 2007 (Final)
 - 3rd Quarter FY 2007 (Draft)
- Reports in progress:
 - 4th Quarter FY 2007
 - 1st Quarter FY 2008

Optimization Report Recommendations (LTM)

Recommendations In Progress

- Remove monitoring well HN-69S and HN-69D from the monitoring program in Area A.
- Reduce the sampling frequency in upgradient Area C monitoring wells BG-05A, HN-23A, HN-27S, and HN-28S from quarterly to semi-annually.
- In accordance with the TEG recommendation, streamline the quarterly monitoring reports to include only pumping rates, sampling results, groundwater-level measurements, and any notable issues.
- Create/maintain a database with current and historical monitoring data and submit as a deliverable with the quarterly monitoring reports.