



TETRA TECH NUS, INC.

661 Andersen Drive • Pittsburgh, PA 15220
Tel 412.921.7090 • Fax 412.921.4040 • www.tetrattech.com

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July 7, 2005

Project Number 4061

Mr. Frank Cellucci
Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mailstop No. 82, Code EV21
Lester, Pennsylvania 19113

Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order 0817

Subject: Restoration Advisory Board (RAB) Meeting Minutes of May 17, 2005
Former Naval Air Warfare Center (NAWC) Warminster, Pennsylvania

Dear Mr. Cellucci:

Enclosed please find the minutes from the RAB meeting held on May 17, 2005. 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 4061



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DISTRIBUTION LIST

Lonnie Monaco (Navy)
Ron Sloto (USGS)
April Flipse (PADEP)
Dave Fennimore (Earth Data)
Garth Glenn (TiNUS)
Rich Evans (ECOR)
Pat Schauble (ECOR)
Kathy Davies (U.S. EPA)
Andrew Barton (Battelle)
Mark Nielson (Battelle)
Chris Candela (ATC/Erickson)

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

RESTORATION ADVISORY BOARD (RAB) MEETING NO. 102

REFERENCE: CLEAN CTO NO. 817

1. Meeting Date and Time: May 17, 2005, 9:25 AM to 10:30 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. Frank Cellucci, the Navy's technical manager for the project who is standing in for Mr. Lonnie Monaco, the Base Realignment and Closure (BRAC) environmental coordinator (BEC), opened the meeting by welcoming the attendees and providing an agenda for the meeting (Attachment 2). Introductions were made for those in attendance and the minutes for the November 2004 RAB meeting were approved.

Treatment System O&M Update (ECOR)

Mr. Pat Schauble of ECOR Solutions Inc. provided an update on the treatment system O&M activities (see handout; Attachment 3). Some notable information presented includes data indicating that pumping rates have stayed relatively consistent over time; total contaminant mass removed to date is approximately 3,700 lbs, with about 400 – 500 lbs removed in the past two years; and the lbs of TCE being removed is staying about the same from month to month.

Performance Monitoring Update (ECOR)

Mr. Schauble indicated that the Final Quarterly Monitoring Report for the Fourth Quarter FY 2004 Performance Monitoring Event should be sent out next week, and the draft 1st and 2nd Quarter FY 2005 reports are in preparation (see handout; Attachment 3). Resurveying of some monitoring wells is planned for later in May. Contaminant concentrations continue to be below MCLs in WMA 13, meeting the criteria for removal of this well from the groundwater monitoring program.

Long Term Monitoring Program Optimization (ECOR)

ECOR is currently implementing the long term monitoring program modifications recommended by the Technical Evaluation Group (TEG) in the memo released by Jeff Orient (Tetra Tech NUS) in September 2004 (see handout; Attachment 3). One exception to the memo recommendations is that ECOR is continuing to sample well HN-67D quarterly since there was a spike in concentration in the August 2004 round of sampling (41 mg/L instead of <1 mg/L typically).

Miscellaneous Topics and Issues

Mr. Schauble and Mr. Rich Evans of ECOR indicated that the HRC injection in Area C has not been effective in reducing contaminant concentrations (mostly PCE) in groundwater. Mr. Orient recommended that they check the groundwater pH, as low pH levels may inhibit biological activity. Ms. Kathy Davies (EPA) suggested that the Navy consider switching to chemical oxidation, as it doesn't appear that there is the necessary biological activity for biodegradation.

Mr. Evans stated that ECOR has not been able to find specific references to the decision process by which the sampling of WMA 13 can be stopped. Ms. Davies indicated that the language is in a legal agreement signed between the Navy and Warminster Municipal Authority and suggested that ECOR look there. There was general agreement with stopping the sampling of WMA 13 among the TEG members, although Ms. Davies pointed out that in the event of a shutdown of the Area C extraction system, the possibility of collecting some additional samples from WMA 13 should be revisited.

Mr. Evans asked whether PDB sampling of the HN-100S/I cluster is OK. Mr. Ron Sloto (USGS) pointed out that there is a process in place for determining the suitability of using this sampling approach. After some discussion, Ms. Davies recommended that ECOR proceed with some testing to verify the applicability of using PDBs for these wells. Mr. Sloto will look over the geophysical well logs and make recommendations for PDB depth placements in the wells.

There was also discussion about some potential changes that ECOR suggested to the TEG-recommended modifications to the groundwater sampling program. Specific wells evaluated (and the associated conclusions) include:

- HN-67D – will go with semiannual sampling as per TEG recommendation.
- EW-18 – will drop from the sampling program as per TEG recommendation.
- WW-1 – will sample annually as per TEG recommendation.

Mr. Sloto encouraged ECOR to continue evaluating the most recent results and temporarily modify the plan if unusual results are seen (i.e. the high detection recently observed in HN-67D).

Mr. Cellucci indicated that Battelle will be performing an optimization study for the Warminster groundwater remediation systems. Ms. Davies asked for a draft copy of their report, as she is the optimization liaison for EPA Region III. Mr. Cellucci concurred and also directed Battelle to provide draft copies to Mr. Sloto, Mr. Orient, and ECOR.

Mr. Cellucci asked Mr. DiGangi (CKS Engineers, representing Warminster Municipal Authority) for an update on excavation activities for the new wastewater treatment plant being built in the vicinity of Area A. Mr. Digangi indicated that all excavations have been completed in the areas where the Navy has underground piping/lines, the discharge line has been completely installed, and the treatment plant should be up and running in the fall.

Mr. Cellucci briefly mentioned the ongoing long term easement activities. The Navy is trying to complete a comprehensive effort to update and complete all required easement-related activities (legal descriptions, maps, etc.) that have been performed at various times in the past. He also mentioned that the Navy is planning on installing some new sewer lines in the Shenandoah Woods housing area. The planned lines will not interfere with any of the remaining monitoring wells in that area, based on an evaluation performed by Mr. Cellucci and Mr. Orient.

Finally, Mr. Cellucci addressed the anticipated impacts of the base closure activities on Warminster. Engineering Field Activity Northeast is scheduled for closure eventually, but will remain operational for awhile yet. The pending closure of Willow Grove Naval Air Station may impact the Shenandoah Woods housing area and the monitoring wells located between the housing area and nearby Casey Village. Mr. Cellucci recommended this for discussion at the next RAB meeting.

Next Meeting Date

The next RAB meeting date was tentatively set for Tuesday, November 15, 2005 at 9:00 A.M. pending later confirmation by the Navy.

The meeting was adjourned at approximately 10:30 A.M.

**ATTACHMENT 1
ATTENDANCE LIST**

17 May 05

Warminster RAB

Frank Cellucci

Navy

(610) 595-0567 X12.
Frank.Cellucci@navy.mil

Rich Evans Ecor 610 431 8731 x117

evans@ecor-solutions.com

Pat Schauble Ecor 610 431 8731 x108

schauble@ecor-solutions.com

JEFF ORIENT Tetra
Tech NUS 412/921-8778

orientj@ttus.com

Kathy Davies EPA 215-814-3315

davies.kathy@epa.gov

Greth Martin Washington Erickson 215-443-350

GWASHINGTON@ERICKSONMAIL.COM

Chris Canjela ATC/Erickson 610 313 3100

christopher.canjela@atcassociates.com

MARK NIELSEN BATTLE 215-504-5059

nietzenj@battelle.org

Carolyn Ohart Battelle 215-504-5003

ohartc@battelle.org

ARKIL FLIPSE PADEP ~~484~~ 250-5721

aflipse@state.pa.us

PATRICK D. GANGI CKS/WMA 215 340 0600

pdigangi@cksengineers.com

Ron Sloto USGS 610-321-2434 X212

rsloto@usgs.gov

**ATTACHMENT 2
MEETING AGENDA**

**NAWC WARMINSTER
TECHNICAL SUBCOMMITTEE/RAB MEETING**

17 May 2005 9:00 AM

WMA Board Room

415 Gibson Ave

Warminster, PA

MEETING AGENDA

Administrative Update

Minutes of the Last Meeting (Tetra tech NUS)

Treatment System O&M Update (ECOR)

Performance Monitoring Update (ECOR)

Long Term Monitoring Program Optimization (ECOR/Tetra tech NUS)

Miscellaneous Topics and Issues

Time and Location of Next Meeting: 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**

**NAWC WARMINSTER
17 MAY 2005 RAB MEETING**

ECOR Presentation

1. Groundwater Treatment Plant Performance

- 365,570,973 gallons recovered and treated (1999 start up through March 2005 reporting period).
- System up-time >95%.
- Replaced groundwater pumps and motors as needed.
- Cumulative dissolved-phase hydrocarbon recovery through March 2005 reporting period:
 - Tetrachloroethene (PCE) – 82.2 pounds
 - Trichloroethene (TCE) – 3,683.8 pounds
 - Carbon Tetrachloride (CCl₄) – 135.8 pounds
- Typically, 95⁺% of the TCE recovered is from Area A.
- Replacement secondary transfer pumps were installed in the GWTP. The new transfer pumps replace non-functioning in-line spares. Each critical transfer pump in the GWTP has an operable spare installed to minimize down-time in the event of a primary transfer pump failure.

2. Performance Monitoring (Long Term Monitoring)

- Events completed by ECOR:
 - 3rd Quarter FY 2004 – April and May 2004
 - 4th Quarter FY 2004 – July and August 2004
 - 1st Quarter FY 2005 – October 2004
 - 2nd Quarter FY 2005 – January and February 2005
 - 3rd Quarter FY 2005 – April 2005
- Reports submitted:
 - 3rd Quarter FY 2004 Final Report
 - 4th Quarter FY 2005 Draft Final Report
- Repairs to several monitoring wells were completed (replacement of concrete pads, well protectors, etc.) during April 2005. Resurveying of modified wells is scheduled to be completed in May 2005, including wells modified during ECOR repairs and wells modified during construction activities at Ann's Choice (Area C) and for the Warminster Wastewater Facility (Area A).
- Access has been denied to monitoring wells HN-66I (Aztec Machinery Company) and R-7 (Martindell residence). These monitoring wells are proposed for

abandonment during 2005. The Navy is working to obtain an access agreement with the property owners.

- *The Revised Long-Term Performance Monitoring Plan for Operable Units 1A, 3, and 4 Remedial Actions (LTPMP)* (Battelle, June 2003) indicates that Warminster Municipal Supply Well WMA-13 is to be removed from the long term monitoring after four consecutive quarters of laboratory analytical data indicating that all contaminants are below the maximum contaminant levels (MCL). During the 4 May 2004 RAB meeting, Battelle indicated that if all contaminants were below the MCLs during the next monitoring event (3rd Quarter 2004), that sampling may be discontinued at WMA-13. Through the 2nd Quarter FY 2005, all analytes remain below the MCL. Therefore WMA-13 sampling will be discontinued.

3. Long Term Monitoring Program Optimization

- A copy of a 2 September 2004 memo (TEG-recommended changes) was distributed by Jeff Orient of Tetra tech NUS during the 9 November 2004 RAB meeting detailing proposed changes to the Long Term Monitoring Program. No comments have been received to date. The proposed changes were implemented with the 3rd Quarter 2005 monitoring event (April 2005). The revised LTM plan is being prepared by ECOR.
- The TCE concentration in HN-67D from the 4th Quarter FY04 (41,000 µg/L) was two orders of magnitude higher than the 3rd Quarter FY04 sampling event concentration (330 µg/L). TCE concentrations observed in the two subsequent quarters observed at HN-67D were 720 µg/L (1st Quarter FY05) and 360 (2nd Quarter FY05).

4. Area C Groundwater Remediation

- Relatively low concentrations of PCE have consistently been detected in Area C at concentrations above the MCL (5 µg/L).
- ECOR implemented an HRC injection Pilot Study at the two wells where the highest PCE concentrations (HN-23 and BG-05A) were observed. No significant reduction in PCE was observed in either location following the injection. In addition a lack of breakdown compounds (DCE, VCE) indicates that further HRC injection would not be warranted as discussed in the January 2005 Pilot Test Report.
- An engineering analysis should be performed to determine the most feasible means to expedite groundwater remediation.

5. Follow-up Items

- Gain Access to HN-66I (Aztec Machinery Company) and R-7 (Martindell residence) through Navy Real Estate to abandon .

- Confirm with TEG that sampling is to be discontinued at WMA-13.
- Monitor and evaluate TCE concentrations in the vicinity of HN-67D to determine whether any additional action is needed.
- Perform an engineering analysis to determine the best means of expediting groundwater remediation in Area C.
- Determine if a PDBs were evaluated for use in HN-100.
 - Reconcile Sampling Frequencies between ECOR and Memo.
 - HN-67D Quarterly vs. Semiannually (to monitor 67 D)
 - EW-18 Quarterly vs. Drop (to monitor 67D)
 - WW-1 Semiannually vs. Annually (to close isopleth)
- Perform an Optimization Analysis of the GWTP operations (Battelle).