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PITT-02-7-029

February 21, 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 February 7, 2007
Former Naval Air Warfare Center (NAWC) Warminster, Pennsylvania

Dear Mr. Monaco:

Enclosed please find the minutes from the RAB meeting held on February 7, 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)
April Flipse (PADEP)
Tony Sauder (Pennoni)
Dave Fennimore (Earth Data)
Garth Glenn (TiNUS)
Pat Schauble (ECOR)
Kathy Davies (U.S. EPA)
Carolyn Ohart (Battelle)
Norm Kelly (RAB Co-Chair)
Dennis Orenshaw (U.S. EPA)
Bob Lewandowski (Navy BRAC PMO)
Mike Nines (MGKF Law)
File: 112G00182

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

RESTORATION ADVISORY BOARD (RAB) MEETING NO. 106

REFERENCE: CLEAN CTO NO. 041

1. Meeting Date and Time: February 7, 2007, 9:40 AM to 11:20 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.

Action Item Review

Action items from the November 1, 2006 RAB meeting were reviewed and are summarized below:

- Technical Evaluation Group (TEG) recommendations for the long term monitoring program – Mr. Jeff Orient (Tetra Tech NUS) indicated that the TEG is discussing potential recommendations internally and will provide a draft memo to the RAB by February 23.
- Submittal of ATC Associates as-built construction drawings for the utilities at Ann's Choice Retirement Community – Mr. Chris Candela (ATC) indicated that he has submitted the drawings to the Navy and to Tetra Tech NUS (TtNUS).
- EPA Site Assessment – Mr. Dennis Orenshaw (EPA) indicated that he had held off on providing the list of 13 sites that EPA is currently looking at in the area due to some confidentiality issues, as some of the sites are clearly not relevant to the Louis Drive

contamination issue. Mr. Drew Lausch (EPA) indicated that EPA is currently attempting to narrow down the list. Mr. Dave Fennimore [Earth Data; representing Warminster Municipal Authority (WMA)] asked Mr. Orenshaw what the criteria was for screening sites – Mr. Orenshaw stated that he would check with the site assessment staff and provide the criteria used. Mr. Orenshaw also asked that in the future this action item be changed to an investigation update.

- 1,4 Dioxane sampling at WMA 26 – Mr. Fennimore reported that WMA 26 has not yet been sampled for 1,4 dioxane, but the municipal authority plans to do so.
- Recommendations for water level monitoring during the drilling of a new extraction well near HN-69D – Mr. Orient indicated that a memo had been sent out to the RAB via email. Any comments on the proposed approach should be submitted by the end of February.
- Update on the status of the Act II investigation at 905 Louis Drive – Mr. Mike Nines (MGKF Law) indicated that he was in attendance to brief the RAB on their investigation findings to date.

Act II – 905 Louis Drive

Mr. Nines provided some background information relative to the site investigation that they are performing at 905 Louis Drive (See Attachment 3). The original Phase I site assessment was performed in support of some bank financing-related activities. His firm advised their client (owners of the property) to enter into the Act II program to get the liability protection afforded and to make the 6-acre property more marketable in the future. As part of the investigation, 4 shallow bedrock wells have been installed and sampled along with one shallow Navy well (HN-16S). Mr. Nines provided the sampling results to the Navy via email prior to the meeting, which the Navy subsequently provided to the RAB via email. Elevated concentrations of chlorinated volatiles have been detected in groundwater, with PCE in particular found at very high concentrations (up to 13,000 ug/L) in wells located along the property line separating 905 Louis Drive from the adjacent CRC Chemicals property. Mr. Nines indicated that their research had turned up information indicating that PCE is stored in the tank farm present on CRC property near the wells with the highest PCE detections. Mr. Tony Sauder (Pennoni Associates, representing Warminster Township) asked what the groundwater flow direction is at the site – Mr. Nines indicated that it is to the northwest. Mr. Nines also indicated that a report will be submitted to PADEP after two more rounds of groundwater monitoring, probably around the end of the year. Mr. Orient asked how close the tank farm is to MW 3 and MW-4 (the wells with the highest PCE

detections) – Mr. Nines indicated that the tank farm is near the property line. Mr. Orenshaw pointed out that the well location drawing shows a tank farm across the fence from MW-4. Mr. Nines then discussed soil boring results, indicating that samples collected from 4 soil borings located along the railroad spur running along the southeast property boundary came back clean.

Mr. Sauder asked Mr. Nines' opinion regarding the sources of the contamination – Mr. Nines indicated that he felt the shallow contamination was from the adjacent property to the south (and sampling data suggests was from a relatively recent release), while deeper contamination is probably from Area A on the former Navy property. Mr. Fennimore questioned the recent release interpretation – the PCE/TCE breakdown products present could indicate an older release. Mr. Sauder and Mr. Monaco asked for EPA to prioritize this information relative to their ongoing site assessments.

Mr. Monaco asked if PADEP could do anything once the 905 Louis Drive Act II report is submitted. Ms. April Flipse (PADEP) stated that the ability of PADEP to act would depend on whether funding is available. She indicated that she would check to see if there have been any reported tank releases at CRC Chemicals. Mr. Sauder suggested that the Navy sample their shallow wells located along the railroad tracks, including HN-14S and HN-59S. Mr. Jim Burke (PADEP) suggested that Mr. Nines' firm do the sampling at the same time as their next scheduled round of sampling, to maintain consistency of the timing of the sampling, sampling techniques, and labs used. Mr. Nines stated that he would check with his client r.e. this suggestion.

Area C Source Assessment Status

Mr. Monaco indicated that the final work plan has been submitted and the Navy has asked TtNUS for a cost estimate for implementation of the work. The estimate is due to be submitted to the Navy by next week, with the field work likely to occur in the mid to late spring. Mr. Orient asked Mr. Candela who TtNUS should coordinate with for site activities – Mr. Candela indicated that he is the point of contact. Mr. Sauder asked where he could find a summary of the risk assessment results for Sites 4 and 8, as he is scheduled for a presentation about Area C to the Federal Lands Reuse Authority (FLRA). Mr. Orient suggested he check the post-removal action confirmation sampling report for Site 4, while Mr. Monaco and Ms Flipse stated that Site 8 soils had been cleaned up to allow for unrestricted use.

Mr. Sauder asked whether there were still any residential wells along Kirk Road near Area C. Mr. Orient indicated that the information he had was that there are still a couple wells east of Site 4, but they are not near the PCE plume associated with Area C. Mr. Monaco stated that there is still

a well or two across Kirk Road from the Area C extraction system – the residents refused to allow the Navy to permanently close their wells as they still wanted them to be available for non-potable use, i.e. washing cars, etc.

Update on Status of Wells 13 and 26

Mr. Monaco asked the Warminster Municipal Authority representatives present for a status update regarding the treatment system upgrade work for wells 13 and 26. Mr. Tim Hagey (WMA) indicated that he would provide the Navy with a memo about where the upgrades stand.

Post-ROD Monitoring at OU-10

Mr. Orient indicated that no comments had been received to date regarding the work plan that had been submitted in October 2006. Mr. Sauder indicated that he would have no comments. Mr. Orenshaw provided a comment memo that he had received from EPA's Biological Technical Assistance Group (BTAG). Mr. Monaco directed TtNUS to prepare a response to comment letter for the BTAG memo and to finalize the work plan.

1.4 Dioxane Discussion

Mr. Pat Schauble (ECOR) provided a handout with recent 1,4 dioxane sampling results for HN-16S and HN-52S, along with a summary of recent treatment system O&M activities (see Attachment 4). Of note, Mr. Schauble pointed out that 1,4 dioxane was found in HN-52S but not in HN-16S. Mr. Fennimore asked why these two wells were targeted for sampling – Mr. Schauble indicated that the selection of wells was based on the relatively high historic levels of 1,1,1 TCA found in them – 1,4 dioxane is used as a stabilizer for 1,1,1 TCA. Mr. Fennimore asked if any 1,4 dioxane sampling was done within Area A onsite – Mr. Schauble indicated that the treatment plant influent and effluent had been sampled previously. Mr. Monaco asked Ms. Flipse for any insights that she could share in regards to a nearby site (Doylestown) that she is involved with – Ms. Flipse stated that 70 wells were sampled, but no strong correlation was seen between 1,1,1 TCA and 1,4 dioxane. Ms. Kathy Davies (EPA) indicated that 1,4 dioxane moves much more quickly through groundwater than 1,1,1 TCA, as it doesn't adsorb onto organic carbon present and also does not biodegrade. Mr. Lausch and Ms. Davies stated that the EPA does not have an MCL for 1,4 dioxane, but the risk-based screening criteria (1×10^{-6} incremental risk) is 6.1 ug/L. Ms. Flipse indicated that PADEP has a state standard of 5.6 ug/L, which correlates to a 1×10^{-5} risk level. Mr. Fennimore noted that the December 2006 sampling results for HN-16S that ECOR reported were about $\frac{1}{2}$ the December 2006 concentration reported by Mr. Nines. Possible

reasons for this mentioned in the ensuing discussion included the use of different labs or differing sampling methods.

Mr. Monaco summarized the next steps to be taken regarding the 1,4 dioxane issue. WMA will sample Well 26, while the Navy will not do any additional sampling at this time. Following completion of the WMA 26 sampling and evaluation of the sampling data, the need for follow-on actions will be discussed.

Groundwater Treatment Plant Upgrade

Mr. Schauble went over some recent treatment plant upgrades (see Attachment 4). Mr. Schauble also indicated that the search for the treatment plant outfall is continuing. Mr. Matt Lapp (ECOR) stated that an outfall was recently found along the north edge of Bristol Road. Mr. Schauble also stated that ECOR is considering methods to verify whether the outfall, about 20-30 gpm, is for the treatment plant. Mr. Hagey offered to assist in locating the outfall as he has some knowledge of it.

Extraction Well Near 69D

Mr. Orient stated that a draft memo, addressing TEG recommendations for water level monitoring during the drilling of the new extraction well, has been sent out to the RAB via email. Mr. Russell Sirabian (Battelle) asked whether anything was planned regarding the shutdown of extraction wells during the extraction well drilling/water level monitoring process. Mr. Monaco directed the TEG to evaluate this and make recommendations in a revised memo.

Revised Optimization Study

Mr. Sirabian summarized the revised optimization study, which had been sent out for review last week. He requested that the TEG check the recommendations for long term monitoring in particular. Mr. Monaco asked that any review comments be submitted by March 9.

MW-11 Update

Mr. Monaco briefed the RAB about the issue regarding MW-11. The Navy had received a call from the owner of the property upon which the well is located, requesting that the well be abandoned as they are trying to sell the property. Mr. Schauble indicated that ECOR inspected

the well and found out that it had already been grouted closed, with the casing still in place. Mr. Monaco stated that the casing will be cut off flush with the ground to complete the abandonment.

Miscellaneous Topics and Issues – Action Items

No miscellaneous topics or issues were brought up for discussion. Action items identified at the wrap-up of the meeting include:

- EPA is to provide an update of the status of site assessment activities around late March or early April.
- Mr. Nines is to provide groundwater flow maps for the 905 Louis Drive investigation, and is to expand the scope of groundwater sampling to include shallow Navy wells along the railroad tracks (pending client approval).
- PADEP is to investigate whether data exists regarding tank farm releases at CRC Chemicals.
- Warminster Municipal Authority is to look into whether any private wells are in use along Kirk Road.
- The Navy (TtNUS) is to address BTAG comments on the OU-10 work plan.
- ECOR is to find the treatment plant outfall location (with help from Mr. Hagey).
- The TEG is to identify extraction wells for shutdown during the water level study and address any comments on the draft memo.
- WMA is to sample Well 26 for 1,4 dioxane.
- Any optimization study comments are to be submitted by 3/9.
- The TEG is to provide a recommendations memo for long term monitoring by 2/23.

Next Meeting Date

The next RAB meeting date was set for May 2, 2007 at 9:30 AM in the WMA Board Room.

The meeting was adjourned at approximately 11:20 AM.

**ATTACHMENT 1
ATTENDANCE LIST**

Warminster RAB Meeting

Feb. 7, 2007

<u>Name</u>	<u>Affiliation</u>	<u>Phone/Email</u>
Jeff Orient	Tetra Tech NUS	412/921-8778 jeff.orient@tetra.com
Kathy Davies	EPA	215-814-3315 davies.kathy@epa.gov
Lonnie Monaco	NAVY	215-897-4911 orlando.monaco@navy.mil
Matt Lapp	ECOR Solutions	2610-431-8731 lapp@ecor-solutions.com
Amanda Bell	ECOR Solutions	610-431-8731 / bell@ecor-solutions.com
Patrick Schauble	ECOR Solutions	610-431-8731 / schauble@ecor-solutions.com
DENNIS ORENSHAW	US EPA	215-814-3361 ORENSHAW.DENNIS@EPA.GOV
Bob Lewandowski	NAVY BRAC PMO	210-897-4908 ROBERT.F.LEWANDOWSKI@NAVY.MIL
Carolyn Scala	Battelle	215-504-5003 scala.c@battelle.org
Russell Sirabian	Battelle	914-576-7713 sirabianr@battelle.org
Chris Conde	ATC/FARUKSON	610-313-3100 x495 chris.conde@atc-usa.com
Dave Fennimore	EDN/WMA	610-524-9466 dfennimore@earthdata.net
Drew Lausch	EPA R3	215-814-3359 (Lausch.robert@epa.gov)
MICHAEL NINES	MGRFLAW	484-430-2350 (MNINES@MGRFLAW.COM)
TONY SAUNDER	PENNSONI	215-222-3000 (t.sauder@pennoni.com)
Tim Hagey	WMA	215-675-3301 x202 timh@warminsterauthority.com
APRIL FLIPSE	PA DEP	484-250-5721 aflipse@state.pa.us
Jim Burke	PA DEP	484-250-5779 jburke@state.pa.us
Ron Soto	US Geological Survey	610-321-2434 x212 rsoto@usgs.gov

**ATTACHMENT 2
MEETING AGENDA**

**NAWC WARMINSTER
TECHNICAL SUBCOMMITTEE/RAB MEETING**

07 February 2007 9:30 AM

WMA Board Room

415 Gibson Ave

Warminster, PA

MEETING AGENDA

Administrative Update

- Minutes of the Last Meeting
- Review Action Items

Area C Source Assessment

- Status of Implementing January 2007 Final Work Plan (Navy/TtNUS)

Update on Status of Wells #13 and #26

Post-ROD monitoring at OU-10

- Status of comments on draft review

1,4 Dioxane

- Sample Results from HN-16S and HN-52S (ECOR)

Act II – 905 Louis Drive

- Status Update from property owner (rep Mike Nines)
- EPA Update on Offsite Preliminary Assessment

Extraction Well near 69D

- TEG update

Revised Optimization Study

- Update from Battelle

MW-11 Update

Miscellaneous Topics and Issues – Action Items

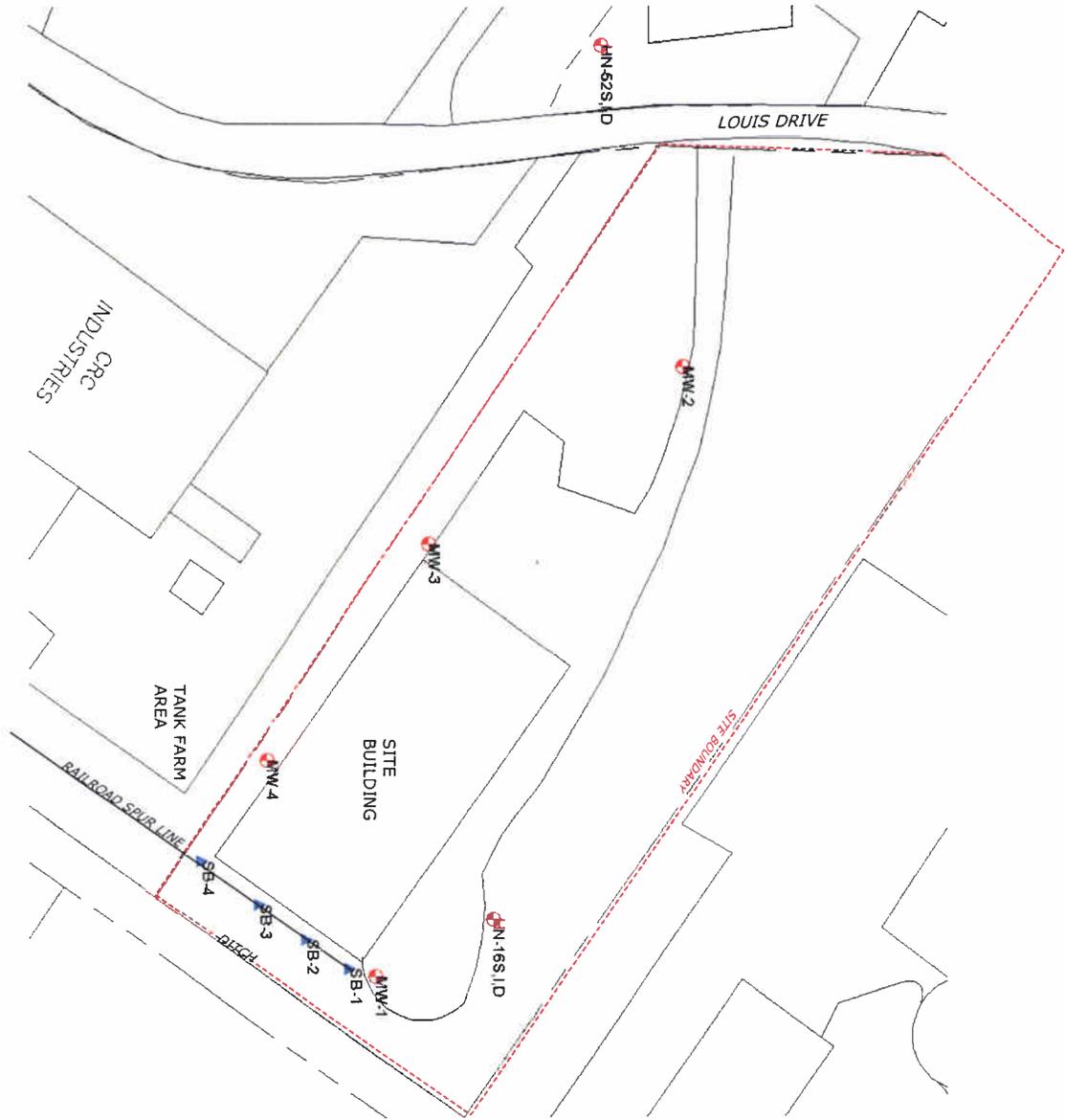
Time and Location of Next Meeting: - Date to be determined

Action Items

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

- The TEG is to provide recommendations for any adjustments to the LTM program sampling frequency that they feel is appropriate.
- Mr. Candela is to provide as-built drawings for utilities relative to where Area C source assessment work is under consideration.
- Mr. Orenshaw is to provide a list of the 13 sites EPA is investigating in the Louis Drive area.
- Mr. Nines is to provide sampling results and water level data for his investigation of 905 Louis Drive.
- Mr. Fennimore is to research and provide any 1,4-dioxane results for Well 26.
- Mr. Orient is to recommend wells for transducer monitoring during the drilling of the extraction well near HN-69D.

ATTACHMENT 3
905 LOUIS DRIVE INVESTIGATION INFORMATION



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- EXPLANATION**
- MW-1 MONITORING WELL LOCATION
 - ▲ SB-2 SOIL BORING LOCATION

FIGURE	EXPLORATION LOCATION PLAN	PROJECT No.:	CAD FILE NAME:		
	905 LOUIS DRIVE WARMINSTER, PENNSYLVANIA	DESIGNED BY:	NA		
		VFB	PLOT DATE:	07/05/06	
		DRAWN BY:	VFB	DRAWING SCALE:	AS SHOWN
		CHECKED BY:	VFB	INCEP DATE:	11/20/06



Table
 Summary of Groundwater Analytical Results 10/26/06 and 12/20/06
 905 Louis Drive
 Warminster, Pennsylvania

26-Oct-06

	PADEP (MCL)	MM	MM	MM	MM	MM
1,1- dichloroethane	110	ND	ND	11	3.4	ND
1,1-dichloroethene	7	2.1	ND	22	16	7.5
cis-1,2-dichloroethene	70	ND	22	230	26	ND
tetrachloroethene	5	170	170	8100	3100	330
1,1,1-trichloroethane	200	11	ND	88	46	26
trichloroethene	5	13	22	180	17	20
trichlorofluoromethane	2000	7	ND	3.4	7.8	8.2

21-Dec-06

	PADEP (MCL)	MM	MM	MM	MM	MM
1,1- dichloroethane	110	ND	ND	12	ND	2.1
1,1-dichloroethene	7	2.3	4.5	23	7.4	7.7
cis-1,2-dichloroethene	70	ND	100	280	9	ND
tetrachloroethene	5	150	550	13000	1300	270
1,1,1-trichloroethane	200	10	3.4	89	27	23
trichloroethene	5	13	65	220	10	22
trichlorofluoromethane	2000	7.9	ND	2.7	8	8
Vinyl chloride	2	ND	2.1	ND	ND	ND

ND - Not Detected

* Based on Used Aquifer TDS<2500 Non-Residential

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Table _
 Well Inventory
 905 Louis Drive
 Warminster, Pennsylvania

									Elevation
MW-1	50	0-35	35-50	2	295.03	12.5	282.53	17.72	277.31
MW-2	49	0-35	35-49	2	286.82	18.69	268.13	20.41	266.41
MW-3	50	0-35	35-50	2	294.93	29.48	265.45	30.00	264.93
MW-4	60	0-18.5	18.5-60	2	295.5	14.13	281.37	15.48	280.02
HN-16S	65	0-51	51-65	2	294.1	11.41	282.69	17.05	277.05
HN-16I	120	0-101	101-120	2	294.33	19.26	275.07	17.93	276.40
HN-16D	200	0-168	168-200	2	294.59	3.79	290.8	3.85	290.74
HN-52S	87	0-73	73-87	2	285.39	24.03	261.36	25.33	260.06
HN-52I	132	0-115	115-132	2	285.52	20.43	265.09	19.82	265.70
HN-52D	194	0-178	178-194	2	285.5	0.17	285.33	0.40	285.10

msl - mean sea level

Note that all wells are flush mounted.

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**ATTACHMENT 4
ECOR UPDATE**

**NAWC Warminster RAB Meeting
7 February 2007**

ECOR Solutions, Inc.

1,4-Dioxane Sampling Results (19 December 2006)

Well ID	cis-1,2-DCE	PCE	1,1,1-TCA	TCE	1,4-Dioxane
HN-16S	ND (10)	120	13	11	ND (9.7)
HN-52S	220 J	12,000	ND (800)	320 J	9.8

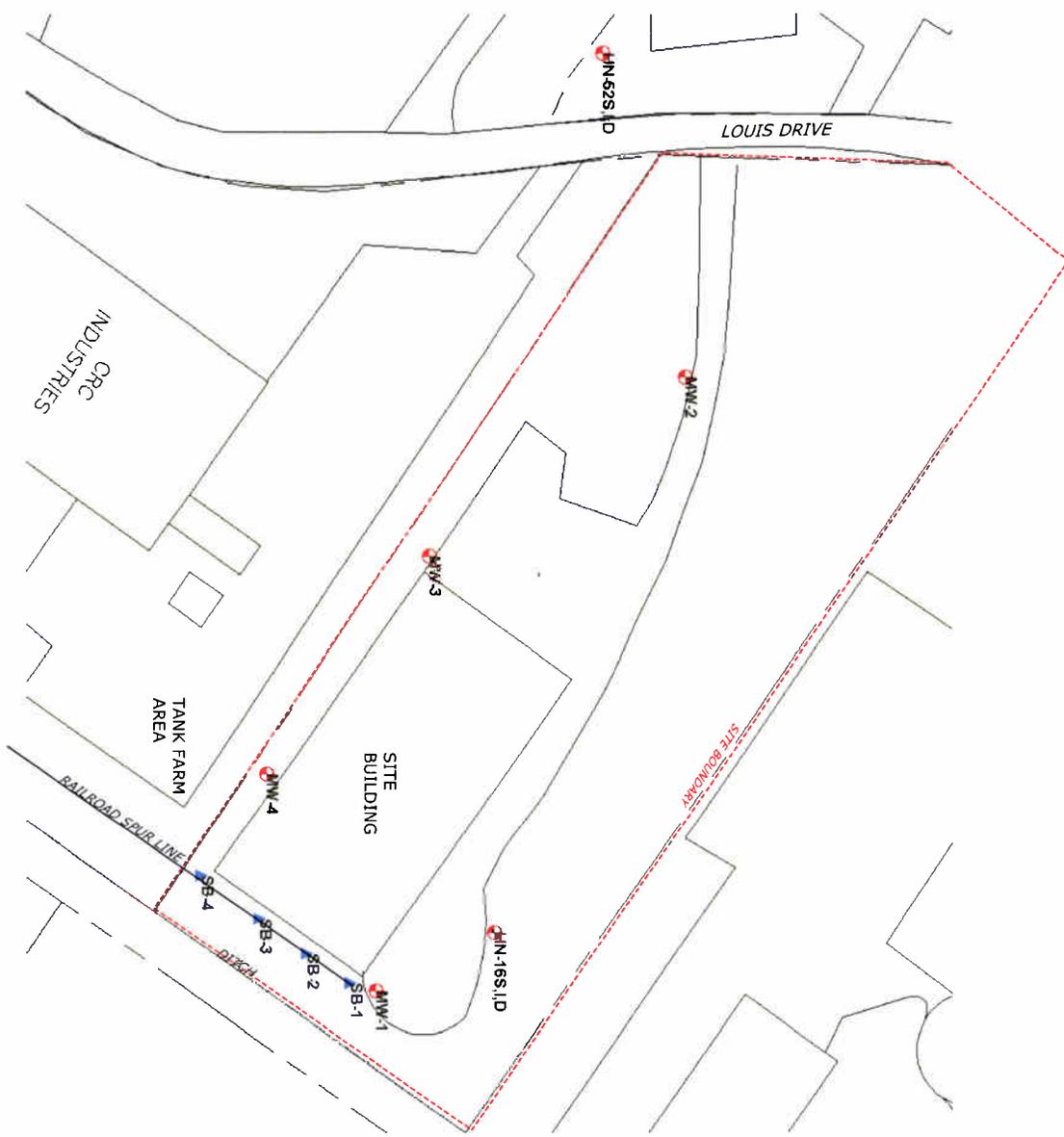
All values recorded in µg/L.

GWTP Upgrades (December 2006 to January 2007)

- Installation of bypass piping. Equipment bypassed includes the flocculent mixing tank, incline plate separator, sand filter and neutralization tank. (11-15 December 2006)
- Installation of two bag filter units (housings and filters). (11-15 December 2006)
- Installation of a 5,000 lb vapor phase granular activated carbon adsorber in series with the existing two 1,500 lb adsorbers. (18-20 December 2006)
- Upgrade of existing computer system with a system capable of hosting a Windows XP based graphical user interface. (15 January 2007)

NPDES Permit Application

- Draft permit application has been prepared.
- Exact location of discharge point to surface water is still being determined.



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- EXPLANATION**
- MW-1 MONITORING WELL LOCATION
 - ▲ SB-2 SOIL BORING LOCATION



FIGURE	EXPLORATION LOCATION PLAN	PROJECT NO.:	CAD FILE NAME:	
	905 LOUIS DRIVE WARMINSTER, PENNSYLVANIA	DESIGNED BY:	NA	
		DRAWN BY:	07.05.06	
		CHECKED BY:	AS SHOWN	
		DRAWING SCALE:	11.20.06	