

Joint Base McGuire-Dix-Lakehurst
Restoration Advisory Board (RAB) Draft Meeting Minutes
Meeting No. 40 – 15 November 2012

SUBJECT: Restoration Advisory Board (RAB) Meeting No. 40 – Meeting Minutes

- 1) Place: Edward Holloway Senior Citizen Community Center, 5 Cookstown Browns Mills Road, Cookstown, New Jersey
- 2) Date/Time: Thursday, 15 November 2012; 6:30 PM
- 3) Co-Chairs: CAPT William A. Bulis, Deputy Joint Base Commander, Joint Base McGuire-Dix-Lakehurst
Mr. Michael Tamn, Resident, Pemberton Township, New Jersey

4) Attendees:

Mr. Frank Storm	Resident, Burlington County, RAB Member
Mr. Albert Hopkins	Resident, Burlington County, RAB Member
Ms. Theresa Lettman	Pinelands Preservation Alliance, RAB Member
Mr. Tom Besselman Jr.	Resident, Burlington County
Mr. Doug Pocze	US Environmental Protection Agency, Region II
Mrs. Carla Struble	US Environmental Protection Agency, Region II
Mr. Haiyesh Shah	New Jersey Department of Environmental Protection
Mr. Phil Cole	New Jersey Department of Environmental Protection
Mr. Joseph Marchesani	New Jersey Department of Environmental Protection
Mr. Chris Archer	JB MDL, 87 CES, Deputy Civil Engineer
Mr. Ken Smith	JB MDL, 87 CES/CEAN, Chief, Environmental Division
Mr. Curtis Frye	JB MDL, 87 CES/CEAN, Chief, Environmental Restoration Program
Mr. Michael Figura	JB MDL, 87 CES/CEAN, Environmental Restoration Program
Mr. King Mak	JB MDL, 87 CES/CEAN, Environmental Restoration Program
Mr. G. Michael Brown	JB MDL, 87 CES/CEAN, Environmental Restoration Program (BB&E)
Mr. Michael Wierman	JB MDL, 87 CES/CEAN, Environmental Restoration Program (BB&E)
Mr. Gregory Kendall	Plexus
Mr. Michael Brewin	Plexus
Mr. James Richman	Shaw Environmental & Infrastructure
Mr. Mark Tucker	Shaw Environmental & Infrastructure
Mr. Tarek Ladaa	Shaw Environmental & Infrastructure
Mr. Peter Naumoff	URS
Mr. Van Ehambaram	URS

5) Handouts

- JB MDL Restoration Advisory Board, Meeting No. 40, 15 November 2012, Agenda
- JB MDL Restoration Advisory Board, Meeting No. 40, 15 November 2012, Presentation Slides
- JB MDL Restoration Advisory Board, Document Availability List, November 2012
- Courier Post 'Hurricane Sandy' Article
- BOMARC Missile Accident Site Document List to Support No Further Action (NFA) Status

6) Call to Order:

The meeting was called to order by CAPT Bulis, who welcomed everyone to the meeting and provided a brief description of himself and gave an overview of JB MDL's involvement with Hurricane Sandy support.

7) Minutes of Previous Meeting and Review of Agenda Items:

Mr. Tamn asked for a motion to approve the minutes from the 9 August 2012 RAB meeting: a motion was made by Mr. Storm, seconded by Mr. Cole; the minutes were approved.

8) Review of Action Items from the August 2012 RAB:

Mr. Curtis Frye, Chief, JB MDL Environmental Restoration Program, provided a brief overview of the responses to Action Items from the August 2012 RAB. Mr. Frye noted that the RAB meeting was being recorded for the purpose of providing meeting minutes.

JB MDL was asked to compile a list of documents supporting the NFA determination for BOMARC plutonium release Site RW-01.

- JB MDL provided a list of NFA supporting documentation as a handout. These documents are accessible in the Burlington County Library; Mr. Tamn also has copies of this material.
 - The RW-01 site has been determined to have been cleaned up to residential standards / Unrestricted Use
- Mr. Storm inquired about whether BOMARC property will transfer back to the Army. Mr. Archer responded that since Joint Basing, the issue of property transfer is moot; the property will remain with the Air Force, as part of the Joint Base McGuire-Dix-Lakehurst.

Update of the Community Involvement Plan (CIP), or creation of a Joint Base CIP

- A Draft CIP was presented to Mr. Tamn and each of the RAB members tonight and an overview presentation was provided during this RAB meeting.

JBMDL was asked to provide an update on the Dix Magazine-1 Area and the BOMARC OT-16 Area:

- An update on each site was introduced as part of the evening's scheduled agenda.
- Shaw's Jim Richman will present the update for OT-16, and Mark Tucker will present the update for Mag-1; these gentlemen replace the previous Program Manager Mr. Fred Poli who recently retired.

9) Community Involvement Plan:

Mr. Michael Brown, JB MDL ERP Project Manager, provided an overview of the Community Involvement Plan (CIP). Key points included:

- The intent of the CIP is to promote community relations and assess any changes about the environmental conditions at JB MDL.
- Data gathering method consisted of telephone interview with RAB members.
- Overall responses indicated that RAB members are satisfied with the Air Force's management of JB MDL's environmental cleanups.
- The Draft CIP, delivered to Mr. Tamn tonight, has a tentative finalization date of February 2013.
 - Request that any comments on the Draft CIP be provided to the ERP by the end of December 2012

10) Dix Classified Exception Area and Well Restriction Area Overview:

Mr. Michael Brewin provided a detailed overview of the Dix Classification Exception Area (CEA) and Well Restriction Area (WRA) Sites. Key points included:

- The CEA/WRA was proposed for Dix Cantonment Area in 1999 and adopted in 2004 to prohibit Kirkwood Cohansey aquifer groundwater use across the installation
- The sites currently within the CEA (TU019a, LF010, TU019, and TU011) were presented in detail; each of four proposed sites for inclusion within the CEA (NW043, TU924, TU968, and NW045) were also presented.
 - New sites will be included in a Work Plan addendum, and the sampling results will be included in the annual Dix CEA Annual Report, as an addendum.
- Mr. Haiyesh Shah of the New Jersey DEP made the following point regarding CEAs:
 - Groundwater in the entire state is divided into categories; JB MDL groundwater is within the New Jersey Pinelands Preservation Area, which has its own groundwater quality criteria.
 - The CEA purpose is to prohibit use of the groundwater until the groundwater criteria are met.
 - All these sites will be vigorously and routinely monitored until standards are met, upon which time the groundwater restrictions would be lifted.
- Fact sheet handouts were provided for each of the McGuire compliance restoration sites.

11) Dix Magazine-1 Area Bioaugmentation System Update:

Mr. Mark Tucker, Shaw Project Manager, provided an update regarding the Mag-1 Area Bioaugmentation operations, along with future plans for the site. Mr. Tucker's presentation discussed the following:

- Site figures showing the site's spatial distribution and geologic and hydrogeologic cross-sections including contaminant plume distribution.
- Site Figure showing the treatment system's distribution of injection and extraction wells in relation to the shallow Kirkwood aquifer and the deeper Manasquan aquifer.
- Description of the timeframes for the different phases of the system operations: startup, pH conditioning, contract suspense, system modifications and nutrient conditioning.
- Maximum contaminant concentrations:
 - TCE reduced from 6,500 ug/l in October 1986 to 390 ug/l in October 2012
 - DCE reduced from 2,000 ug/l in April 1994 to 490 ug/l in October 2012
- Future plans include: microbe introduction, operate recirculation, groundwater monitoring, effectiveness evaluation, report/recommendations submission.
- Questions: Mr. Tamn asked a series of questions which the following information was discussed:
 - The levels of contamination at the beginning of this Bioaugmentation project several years ago were in the vicinity of 1,000 ug/l DCE as opposed to the current 490 ug/l
 - After this project's completion, the pH levels of the groundwater associated with this site will gradually return to natural groundwater pH levels for this area
 - Costs associated with the completion of this project depend on the Bioaugmentation system's effectiveness; immediate success will keep costs lesser than if additional microbes need to be introduced.

- Groundwater quality will continue to improve with the implementation of this system, with continued monitoring once the effectiveness of the Bioaugmentation system is maximized. The groundwater quality criteria for TCE is 1 ug/l; Mr. Shah from DEP indicated that it will likely be a very long time before this site would meet this criteria, and that the CEA would remain in place until that criteria could be reached.
- Microbes being utilized degrade the TCE to DCE, and then to vinyl chloride, and then ethane, which is the final non-toxic organic gas by-product of the degradation process.
- Mr. Frye clarified that at the end of this contract, the Air Force will program a follow-on project to continue the remediation of this site. The scope of the follow-on contract will largely depend on the success of this current Bioaugmentation project.

12) BOMARC Site OT-16 Update

Mr. Jim Richman, Program Manager, Shaw Environmental, Inc. provided an update with regard to the current status and future plans for the OT-16 site. The following are some of the presentation's key points:

- At the February RAB the OT-16 selected remedy was presented, which is an in-situ technology called Zero-valent Iron (ZVI) Permeable Reactive Barrier (PRB)
 - Shaw currently preparing the Record of Decision as well as the Pilot Remedial Action Work Plan which will describe how the ZVI PRB will be implemented, at what dosage it will be implemented, and how the performance will be evaluated.
 - Shaw's ZVI PRB implementation is a patented delivery system using nitrogen, which keeps iron from being oxidized too early within the aquifer.
- PRB Specifications: 100 injections points, utilizing 400,000 pounds of ZVI, long-term performance monitoring (LTPM) of the system with 19 new groundwater monitoring wells and surface water sampling.
- ZVI PRB Phases: The remedy will be implemented in phases, the first of which is executed and monitored to hone in variables impacting effectiveness in order to implement the Final remedy with the greatest potential for success. The phases, called the Pilot and Final Remedy are scheduled as follows:

○ Mobilize Pilot:	March 2013
○ Injection:	March/April 2013
○ Initial LTPM:	June 2013
○ Prepare LTPM Report and Finalize RAWP:	Aug. 2013
○ Mobilize Final Remedy:	Sept. Oct. 2013
- The Final Remedy will continue after the LTPM with
 - Establishing a CEA
 - Amending the JB MDL General Plan to establish land-use controls
 - Completing an Off-base Deed Notice/Memorandum of Agreement, and
 - Initiating long-term monitoring.
- Questions on the OT-16 presentation generated the following information:
 - Depending on whether full gravel roads will be required for the project, Shaw may need to obtain a Pineland's permits for the construction activity.
 - Without treatment, because of the static nature of the plume, the area in which there is a current result of 100 ug/l would be the same area in which you would observe 100 ug/l many years earlier or later.
 - After the injections are completed it will be two months until subsequent monitoring sampling will occur;
 - Groundwater flow rate is approximately 1 foot/day.

- Equipment on-site will be semi-truck size, weighing upwards of 80,000 pounds. Based on the experience of the equipment which has already been onsite installing monitoring wells, the expectation is that there will not be significant disturbance.
- Monitoring wells screened at a depth within the TCE contamination will have deeper wells downgradient to ensure that TCE is not getting by the more shallow wells.
- Groundwater in the PRB will be within the treatment zone long enough for TCE and its daughter products to all be treated before the waters exit the PRB treatment area.


13) Action Items and Proposed Agenda Topics for the next RAB Meeting, now scheduled February 21, 2013:

- Update for McGuire Operable Units 1,2,3,4, and 5;
- Update of McGuire Operable Units 6, 7, and 8.
- Mr. Tamn requested an informational page indicating what the proposed budget was for the past two-years and then compare those proposed budgets to what the actual budget was over the past two years.

14) Meeting Adjourned:


- Mr. Michael Tamn, RAB Co-Chair, adjourned the meeting at 7:25 PM

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**Outstanding Action Items/Questions
from Previous RAB Meeting**

Mr. Curtis Frye
Chief, Environmental Restoration Program
87 CES/CEAN



Outstanding Action Items




- Compile list of documents supporting NFA determination for BOMARC plutonium release Site RW-01
 - ✓ List provided as hand-out to RAB
- Deliver draft Community Involvement Plan Update to RAB
 - ✓ Completed – presentation this evening
- Provide update on Dix MAG 1 and BOMARC OT-16 Sites
 - ✓ Presentations this evening

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Community Involvement Plan (CIP) Update

Mrs. Nicole Brestle
Restoration Program Manager - JB MDL




**Community Involvement Plan (CIP)
Update**




- Background
 - ✓ The Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA), Sections 113 and 117, requires that the public be informed of ongoing environmental response actions
- Purpose of the CIP
 - ✓ Promote community relations
 - ✓ Assess any changes in the level of concern or interest about the environmental conditions at JB MDL
- Prior to Joint Base McGuire-Dix-Lakehurst each base had a separate CIP

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**Community Involvement Plan (CIP)
Update**




- Method
 - ✓ Interviews
 - ✓ Eight individuals were interviewed by telephone in October 2012. The interviewees were selected from RAB members, regulatory officials, local agencies and interested parties
- Findings
 - ✓ Overall satisfaction with Air Force management of environmental cleanup at JB MDL
 - ✓ Approval of Joint RAB concept
 - ✓ Concurrence that the RAB is the best method for information dissemination

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**Community Involvement Plan (CIP)
Update**



- General Comments and Suggestions
 - ✓ Consider an audio system at the RAB meetings to improve sound level
 - ✓ Hold meetings at different locations on and around the installation, to include local colleges. This may generate more interest in RAB and increase public participation
 - ✓ Present information in more "layman" terms

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**Community Involvement Plan (CIP)
Update**

- CIP Schedule:
 - ✓ Conduct community interviews
 - ✓ Completed October 2012
 - ✓ Analyze interview results and prepare draft CIP
 - ✓ Completed November 2012
 - ✓ Present Draft CIP to Restoration Advisory Board
 - ✓ Provided to Mr. Tamn
 - ✓ Revise the CIP based on RAB member feedback
 - ✓ January 2013
 - ✓ Finalize the CIP and announce completion in the local paper
 - ✓ February 2013

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Questions?

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**Dix Classification Exception Area (CEA),
Well Restriction Area (WRA) Overview**

Mr. Mike Wierman
Restoration Program Manager - JB MDL

Mr. Greg Kendall
Project Manager - Plexus Scientific Corporation

Dix Area CEA/WRA

- In 1999, a CEA/WRA was proposed for the Dix Cantonment Area. This prohibits groundwater use of the Kirkwood Cohansey aquifer
- The CEA was adopted in 2004 and includes all sites requiring long-term monitoring across the installation
- The CEA which are currently under contract with Plexus include:
 - ✓ Dix Former Taxi Stand Site (TU019a)
 - ✓ Dix Sanitary Landfill (LF010)
 - ✓ Former Dix UST Site, Building 5390 (TU019)
 - ✓ Golf Course Clubhouse (TU011)
- Four proposed additional CEA sites
 - ✓ Building 4304 (NW043)
 - ✓ Building 0199 (TU924)
 - ✓ Building 5348 (TU968)
 - ✓ Building 5339 (NW045)


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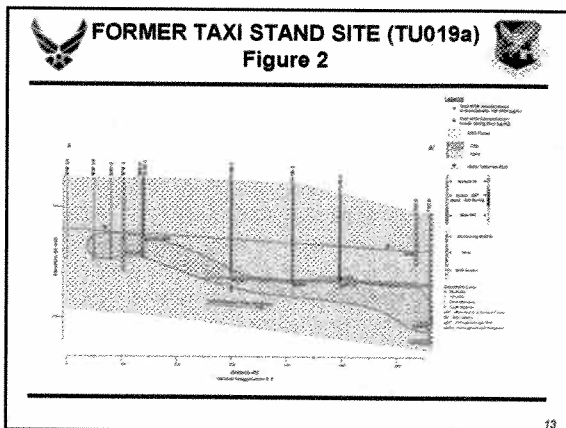
**FORMER TAXI STAND SITE
(TU019a)**

- Groundwater active remediation was complete in 2007
- Monitoring wells exhibit increasing BTEX trends
- A Membrane Interface Probe (MIP) and soil investigation was completed at the site (Figure 1)
- Source has been delineated by MIP, aerial extent is small and vertical extent is 28-35 ft below ground surface
- Groundwater plume extends down gradient at depth below a clay lens (Figure 2)
- Downgradient sentinel wells to date are compliant
- Future Actions
 - ✓ JB MDL is proposing to implement In Situ Chemical Oxidation (ISCO) to remediate the source area

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**FORMER TAXI STAND SITE (TU019a)
Figure 1**





SANITARY LANDFILL (LF010)

- The Sanitary Landfill was added to the CEA in 2002
- The Sanitary Landfill was delisted from the National Priorities List (NPL) in September 2012
- NJDEP will assume lead regulatory responsibility for all future O&M, implementation of the CEA, and ensuring that the remedy remains protective into the future
- CERCLA Five-Year Reviews will continue for which the USEPA will retain lead regulatory responsibility
- LTM of groundwater, surface water, and sediment will continue in accordance with NJDEP requirements

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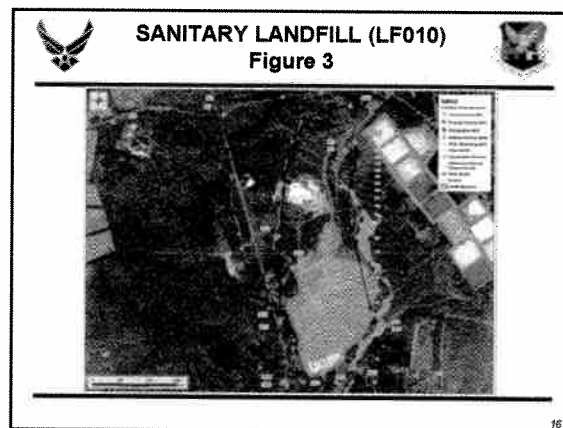
SANITARY LANDFILL (LF010)

■ **Future Actions**

- ✓ A Long Term Monitoring Plan (LTMP) will be generated for the landfill under the CEA program
- ✓ Figure 3 illustrates the proposed Area of Concern and Sentinel Wells based on groundwater data through Spring 2012
- ✓ Figure 3 illustrates the proposed sediment and surface water locations
- ✓ All sentinel wells are downgradient of monitoring wells that have screening criteria exceedances (Figure 3)
- ✓ Propose changing groundwater monitoring frequency from semi-annual to annual (Fall) for all media
- ✓ Propose semi-annual landfill inspections

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Golf Course Clubhouse (TU011)

- This site was formerly monitored under Shaw contract in accordance with the 2004 Remedial Action Work Plan
- Shaw has completed five years of post-remedial action monitoring and this monitoring will now be performed by Plexus
- JB MDL is proposing to move the site under the CEA monitoring plan (EA, 2006)
- Moving the site under the CEA work plan will reduce the number of samples from 7 wells to 4 wells
- Groundwater concentrations at wells proposed to be removed from the sampling program have not exceeded criteria for 5 years

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FORMER UST SITE, Building 5390, (TU019)

- This site was formerly monitored under Shaw contract in accordance with the 2004 Remedial Action Work Plan
- Shaw has completed the five years of post-remedial action monitoring and this monitoring will now be performed by Plexus
- JB MDL is proposing to move the site under the CEA monitoring plan (EA, 2006)
- Moving the site under the CEA work plan will reduce the number of samples from 6 wells to 2 wells
- Groundwater concentrations at wells proposed to be removed from the sampling program have not exceeded criteria for 3 years

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**PROPOSED NEW CEA SITES:
NW043, TU924, TU968, and NW045**

- This work is being performed under new USACE contract W912QR-12-C-0067 (Plexus is a subcontractor to PARS)
- Figure 4 illustrates the location of the four sites that JB MDL proposes to add to the Dix Area CEA program
- JB MDL proposes to continue the current sampling program during the Fall of 2012 and evaluate each site to be proposed to the CEA
- NW043, TU924, and TU968 have been sampled for 8 straight quarters and will be sampled this Fall
- NW045 will be sampled in Fall 2013
- After the Fall 2012 event a CEA petition report and CEA Work Plan Addendum for the four sites will be submitted
- The sampling results will be added to the Annual Dix Area CEA report as an addendum

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**PROPOSED NEW CEA SITES –
NW043, TU924, TU968, and NW045
Figure 4**

Questions?

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**Dix Magazine-1 Area
Bioaugmentation System Update**
Mr. Mike Wierman
 Restoration Program Manager - JB MDL
Mr. Mark Tucker
 Project Manager - Shaw Environmental & Infrastructure, Inc

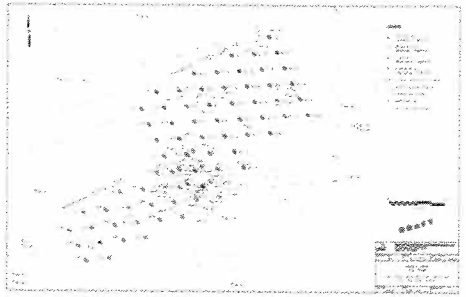
Site Hydrogeology Summary

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Site Hydrogeology Summary

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Treatment System Design / Build



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Treatment System Design / Build

- Kirkwood Treatment Area (shallow aquifer)
 - ✓ 26 injection wells
 - ✓ 22 extraction wells
- Manasquan Treatment Area (deeper aquifer)
 - ✓ 16 injection wells
 - ✓ 12 extraction wells

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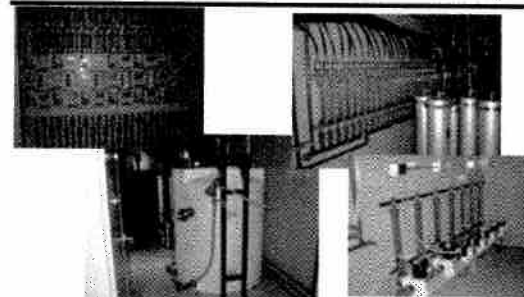
Treatment System Design / Build



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Treatment System Design / Build



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System Operation

- Treatment system startup – October 2011
- Aquifer pH conditioning – October 2011 to June 2012
- Temporary contract suspense – June to August 2012
- System modifications – October 2012
- Aquifer nutrient conditioning – November 2012

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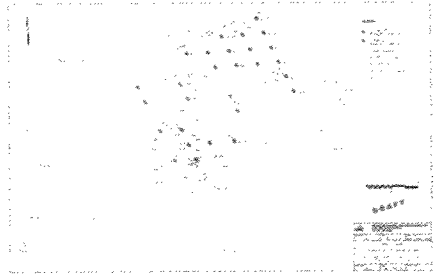
System Operation

- Maximum TCE Concentrations
 - ✓ Oct 1986: 6,500 ug/l
 - ✓ Oct 2012: 390 ug/l
- Maximum DCE Concentrations
 - ✓ Apr 1994: 2,000 ug/l
 - ✓ Oct 2012: 490 ug/l

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Modifications



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Future Plans

- Introduce microbes – December 2012
- Operate recirculation – January 2013
- Groundwater monitoring event - February 2013
- Groundwater monitoring event – April 2013
- Evaluate effectiveness – May 2013
- Submit report with recommendations – June 2013
- Shaw contract expires 30 Sep 2013 – issue new contract for continued treatment operations and monitoring


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Questions?

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BOMARC Site OT-16 Update

Mr. King Mak
Restoration Program Manager – JB MDL
James Richman - Project Manager
Shaw Environmental & Infrastructure, Inc

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**BOMARC OT-16
TCE Groundwater Plume**

- **Current Status:**
 - ✓ Completed Proposed Plan – Feb 2012
 - ✓ Preparing Draft Record of Decision (ROD)
 - ✓ Preparing Pilot Remedial Action Work Plan
- **Zero-valent Iron (ZVI) Permeable Reactive Barrier (PRB)**
 - ✓ **In-situ Technology**
 - ✓ ZVI is mixed with water and injected with nitrogen gas using temporary boring
 - ✓ Monitoring wells are the only permanent structures
 - ✓ injections completed in open field; little disturbance to forests
 - ✓ Gravel road and staging area constructed on existing dirt paths and in open field

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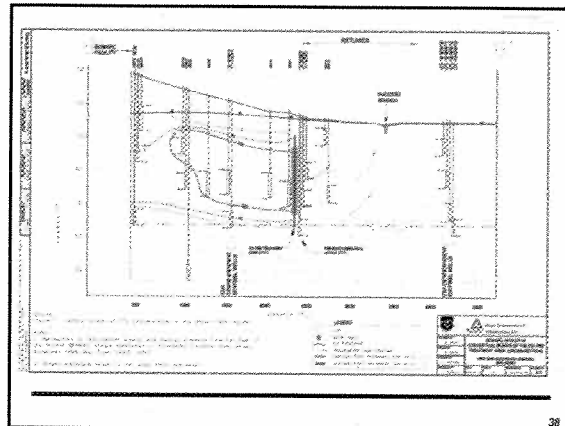
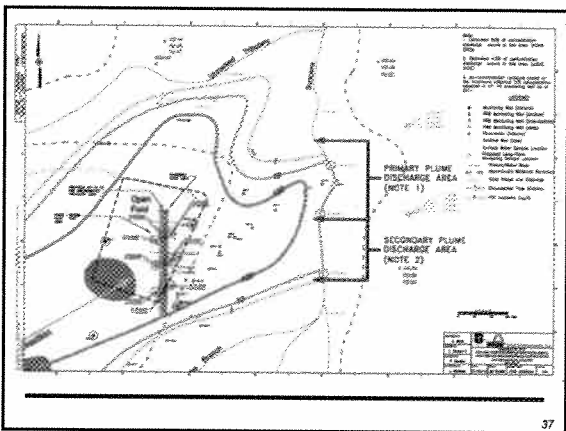
**BOMARC OT-16
TCE Groundwater Plume**

PRB Specifications

- 100 Injection Points (33 pts for Pilot)
 - ✓ 66 pts completed 60 ft bgs; 40 ft injection thickness
 - ✓ 34 pts complete to 75 ft bgs; 55 ft injection thickness
 - ✓ Radius of Influence = 7.5 ft;
 - ✓ Treatment Area = 510 ft x 36 ft
- 400,000 pounds of ZVI (Hepure HCA-150)
 - ✓ 0.6% ZVI/Soil (weight/weight ratio)
 - ✓ Batch – 2-4 lbs ZVI / gallon of water
 - ✓ injections completed in 3-ft intervals = 284 lbs ZVI/ft
- Long-term Performance Monitoring (LTPM)
 - ✓ PRB Monitoring Wells – 19 new
 - ✓ Surface Water Samples – 3 within discharge area

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**BOMARC OT-16
TCE Groundwater Plume**

- **Pilot**
 - ✓ Baseline groundwater and surface sampling
 - ✓ 33 injections pts
 - ✓ Collect MW/SW samples & evaluate geochemical parameters
- **Schedule**
 - ✓ MOB Pilot – March 2013
 - ✓ Injection – March- April 2013
 - ✓ Initial LTPM – June 2013
 - ✓ Prepare LTPM Report and Finalize RAWP – Aug. 2013
 - ✓ MOB Final – Sept./Oct. 2013

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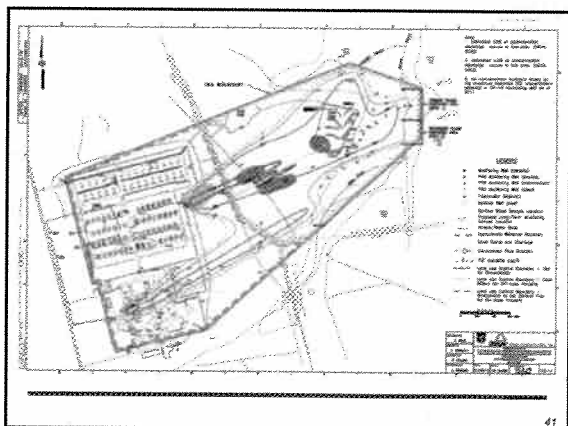
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**BOMARC OT-16
TCE Groundwater Plume**

- **Final Remedy**
 - ✓ 67 Injection Points
 - ✓ Continue LTPM
 - ✓ Establish Land Use Controls
 - ✓ Groundwater CEA
 - ✓ On-base Amendment to the JB MDL General Plan
 - ✓ Off-base Deed Notice/Memorandum of Agreement
 - ✓ Initiate Long-term Monitoring (LTM)
 - ✓ Sentinel Monitoring Wells – 14 new
 - ✓ Source wells – 2 existing
 - ✓ Piezometers – 12 existing
 - ✓ Surface Water Samples – 7 outside discharge area



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Questions?

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 **February RAB Agenda Ideas** 

- Tentative RAB date is February 7, 2013
 - ✓ Update on McGuire Operable Unit's 1, 2, 3, 4 and 5 (Shaw)
 - ✓ Update on McGuire Operable Units 6, 7, and 8 (SAIC)
 - ✓ Discuss Air Force strategy/schedule for one single contract for "fence to fence" management of JB MDL Environmental Restoration Program

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PUBLIC COMMENTS

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