FINAL
Agenda
Restoration Advisory Board Meeting
Naval Air Station Brunswick, Maine
Wednesday, 12 December 2007
Parkwood Inn
7:00 to 9:00 pm

7:00 – 7:10 Introductions & Administrative Items

7:10 – 7:20 Stipulated Penalties

7:20 – 7:30 Site 9 Update

- Removal Action (Navy)
- Direct Push Investigation (ECC)

7:30 – 7:40 Data Quality Objective (DQO) Overview (TtNUS)

- Site 2
- Site 17
- Background Study

7:40 – 7:50 Sampling & Analysis Plan for Supplemental Remedial Investigation of 1,4-Dioxane (TtNUS)

7:50 – 8:00 MMRP Status (TtNUS)

8:00 – 8:10 Site 7 Review (ECC)

8:10 – 8:20 Bedrock Well MW-308 Sampling Results (ECC)

8:20 – 8:40 Field Work Schedule for 2008 (All)

8:40 – 8:45 RAB Meetings 2008 (Navy)

8:45 – 9:00 Questions & Future RAB Agenda Topics

RESTORATION ADVISORY BOARD MEETING
NAVAL AIR STATION BRUNSWICK, MAINE
PARKWOOD INN
DECEMBER 12, 2007
MEETING NOTES

MEETING ATTENDEES

Lonnie Monaco	U.S. Navy, BRAC PMO
Amy VanDercook	U.S. Navy, NAVFAC Atlantic
Gregory Preston	U.S. Navy, BRAC PMO
Commander Barry Miller	NAS Brunswick, Executive Office
John James	NAS Brunswick, Public Affairs
Lisa Joy	NAS Brunswick, Environmental Department
Mike Fagan	NAS Brunswick, Environmental Department
Claudia Sait	Maine Department of Environmental Protection
Ted Wolfe	Maine Department of Environmental Protection
Mike Daly	U.S. Environmental Protection Agency
Carolyn Lepage	BACSE Technical Advisor
Al Easterday	ECC
Gina Calderone	ECC
Jackson Kiker	ECC
Doug Heely	Environmental Strategies & Mgt.
Dan Coyne	Representative of Congressman Tom Allen's office
Carol Warren	Brunswick Local Redevelopment Authority
Robert Rocheleau	Brunswick Local Redevelopment Authority
Vicky Boundy	Brunswick Local Redevelopment Authority
Seth Koenig	Times Record
Josh Katz	Brunswick Resident
Representative Charles Priest	State of Maine Legislator representing District 63
Chuck Prant	Brunswick Resident
Laura Schneider	MPBN
Suzanne Johnson	Brunswick Representative to RAB
Ed Benedikt	Brunswick Area Citizens for a Safe Environment
David Chipman	Town of Harpswell, Maine RAB Member
Peter Lee	Town of Harpswell resident
Arnie Ostrofsky	Tetra Tech NUS
Linda Klink	Tetra Tech NUS

1. INTRODUCTIONS AND ADMINISTRATIVE ITEMS

Lonnie Monaco, U.S. Navy NAVFAC MidAtlantic, opened the meeting and introduced the Navy's consultants, the State and EPA regulators, and other Navy personnel, including Commander Barry

Miller from Brunswick NAS, and Greg Preston representing the Navy's BRAC PMO office in Philadelphia.

Commander Miller gave additional opening remarks. He spoke with Capt Womack, and reiterated the Navy's message that they do pay attention to what is going on. The Navy will do whatever needs to be done relative to clean up for transfer of the base.

Greg Preston also addressed the group. He works at the BRAC PMO office in Philadelphia. Dawn Kincaid has accepted another job to be closer to home. Greg is here on Dawn's behalf, and extends her goodbyes. Greg knows there has been concern over how the Navy will transition the base, since Lonnie will also be leaving. Lonnie's replacement has been identified and will be here next meeting. Dawn's replacement will also be on board in February. The government has acted very quickly to fill these two positions. (Attachment 2)

2. STIPULATED PENALTIES

The Navy and EPA are working through a dispute resolution process. There is no answer yet, but all sides are working towards a solution. The issue has been elevated up to the next level. Greg Preston presented the stipulated penalties update.

Suzanne Johnson asked what the next level is. The first level is here at the base, and the parties were unable to resolve the dispute. The next level includes EPA's regional administrator, DEP's commissioner, and one of the Navy's Deputy Secretaries.

Suzanne asked what the timing is for resolution. Work calendars are full, especially with the holidays. This is still a priority with the Navy, although this is not an emergency-type situation.

Ed Benedikt asked for someone to talk about budget and how much money is going to be spent for clean up. Greg Preston explained that when the base went to the BRAC group, there was a change in funding streams. This caused some delays. Since that happened though, a budget of $3 to $4M was found for 2006 and 07, and actual spending was closer to $6 to $7M. There has never been any issue getting projects done, although budgeting is a process.

Ed also asked what is the cost of clean up at the base. There is no definite number at this time, the budgets are still being put together. These numbers are constantly changing as new issues are found. The Navy is making sure they comply with all laws.

Ted Wolf of Maine DEP asked about a recent article in the local paper, discussing GAO cost saving measures - how with this impact long term work, 4 years form now? Greg said Navy has and always will comply with applicable laws, and they will do what needs to be done.

Ed Benedikt mentioned that Brunswick expects to use the facility for community projects, and they need to know when projects will be completed. He expressed concern that funding requests have long lead times. Greg Preston said he has been in BRAC for 15 years, and their #1 marching order is to make sure properties are cleaned up and transitioned to the community. The Navy is

working with BLRA on many issues. This is still an active base, and the Navy does need to fulfill their mission.

3. SITE 9 UPDATE

Lonnie Monaco gave an update of the on-going excavation program (Attachment 2). The Navy's contractor has taken out 18,000 tons of ash, and another 840 tons of ash that has been classified as hazardous. Presently there are 7 ash piles waiting for sampling results and disposal. One of these piles was recently classified hazardous due to lead. John James asked what makes soil hazardous? Soil is deemed hazardous if it fails TCLP leaching tests. Confirmatory sampling begun last week, the initial results are due next week. There will be more excavation if confirmatory results indicate clean up goals are not met. The Navy plans on being done with the excavation by the end of this month.

Recently, excavation work uncovered a few items identified as munitions. Three metal objects were uncovered, but found to be inert. That same day, Lonnie received a hand written letter in the mail from Warren, Ohio. The letter was from a person was stationed here in the 1970's as a radar technician. When he leaned the base was closing, he decided to write. He said that back in the 70's his job was to dispose of vacuum tubes, some of which contained radioactive material. He thought the disposal area was south of Site 9 (south of Neptune Drive). The Navy has researched maps and photos, and they don't think the disposal area was where he says. They are not questioning what was disposed, just where. The Navy is assembling maps to send to him to refresh his memory (this happened over 30 years ago). Lonnie spoke with him on the phone, and he admitted his memory may not be that good. He is willing to come here, and Navy will pay for his travel. Since it is not the best time of year to fly to Maine, they will send him maps and have him out in March or April to determine where the disposal could have been. The area south of Neptune Drive is where ECC's direct push work is to be done. Will need to wait on this work if radioactive material is possibly present.

David Chipman asked what radio isotopes are involved in vacuum tubes. Lisa Joy mentioned a college study that indicated very low levels of radioactive material is present in vacuum tubes. The Navy will look into possible burial locations, and what type of tubes are involved. There is no indication yet of how many tubes were buried. The Navy had a disposal ban in 1975, when they recognized that tubes should not be mixed with other debris.

ECC is under contract to do the direct push work south of Neptune Drive. This is an early phase of remedial investigation (RI). TtNUS will do follow up with more sampling to define the nature and extent of ash, which may lead into remedial action. The plan is to finish the CERCLA process in this area, including completion of a ROD.

4. DQO OVERVIEW (TtNUS)

Arnie Ostrofsky of TtNUS presented an overview of the Data Quality Objectives process (Attachment 3). The process includes a team of contractors, regulators, and Navy – around 15 people. The purpose of the process is to design a proper study, and takes about 3 days. There are

lots of details to go over, to answer the question of why we are doing the work. The process allows for the collection of the right data to make defensible decisions. It is a scientific process, but also helps to achieve efficiency to conserve resources. The process helps to determine when to stop sampling to define the extent. This process was done for 3 study areas at the base - Site 2 in August, Site 17 last month, and a background study.

Arnie reviewed the 7 step DQO process, using Site 17 as an example. See attached hand out for details on what questions are asked throughout the process.

Suzanne Johnson asked whether this DQO process involved the regulators? Yes, the process involves many people, including contractors, regulators, and Navy. Lots of involvement from various technical people, such as chemists, risk assessors, hydrogeologists, etc.

An audience member also asked what IAS stands for – initial assessment study. This is part of the preliminary assessment, and is used to identify chemicals that may have been used or processed.

5. SAMPLING AND ANALYSIS PLAN FOR SUPPLEMENTAL REMEDIAL INVESTIGATION OF 1,4 DIOXANE (TtNUS)

Linda Klink of TtNUS gave a presentation on the SAP for 1,4 dioxane in the Eastern Plume area (Attachment 4). The work is in the planning stage now, the objective is to do more field work and to find the extent of a hot spot of 1,4 dioxane in groundwater that was previously found. The presentation included a map showing the area of the eastern plume. The area in question is a subset of the eastern plume. The boundary of 1,4 dioxane is dashed to the north and south, because the extent is not defined. ECC recently completed work to the north of the hot spot area, and their results will be a factor in the TtNUS study.

Al Easterday of ECC described their Mere Brook study, which included a direct push and soil boring program. Direct push wells were installed in the flood plain when the ground was frozen last winter. Work was done at 16 locations, mostly focused near the confluence of Mere Brook and Merriconeaug Stream. Groundwater samples were collected from discrete intervals, and analyzed with a mobile lab. The direct push wells included three screen intervals at each location. Last summer, ECC installed monitoring well clusters that also included three screen intervals each. This study was prompted by pore water sampling results that indicated the eastern plume may have migrated to this area. ECC just got groundwater data from the fall sampling event. They will issue a draft report by the end of January 2008. Their results will be incorporated into TtNUS' work plan. ECC will discuss the report at the March 2008 RAB meeting.

Josh Katz asked if 1,4 dioxane was found in the study area? Yes, groundwater from both piezometers and wells showed VOCs and 1,4 dioxane.

Josh also asked about the vertical distribution of contaminants. Al stated that piezometers near the streams mostly showed shallow contamination, while impact at monitoring wells was more in the mid and deep levels. The shallow piezometers are screened in the 2 to 10 foot range.

Josh asked about water lever measurements and if they are continuous – how to determine if the stream is gaining or losing. Linda Klink said readings are typically done as a point in time, not continuous. She agreed to add this question to the DQO meeting agenda, to see if there is value in continuous water level readings.

The draft TtNUS work plan was sent to the regulators, and there was originally an effort to expedite the work. Now, the work plan will go back through the DQO process for further stakeholder review. Linda believes the field work will be conducted in the spring of 2008.

6. MMRP STATUS

Linda Klink also gave this presentation (Attachment 5). There are 6 munitions areas under investigation. The first step in the process is for site inspections. Two important definitions were presented: MEC is munitions and explosives of concerns (i.e., mortars, and other physical hazards); MC is munitions constituents (chemicals related to munitions).

A Preliminary Assessment was initially done by Malcolm Pirnie, and included review of air photos and base documents, and a site walk. This was done to develop recommendations for additional work. One area is already a site (Site 12), and will go into remediation. The other 5 areas are designated as areas of concern at this time. Three sites have MC only (skeet and firing ranges). The other 3 sites have the potential for munitions. One of these is in the Topsham annex, the other 5 are on the main base.

Linda presented a graphic showing how to proceed forward. All six sites are covered under an MC or MEC work plan. TtNUS will do the MEC work first, including geophysical surveys and sweeps.

An audience member asked what geophysics are. Geophysics are similar to a metal detector, but with greater capabilities to see deeper into the subsurface.

Linda said there has been good input from the stakeholder group to develop the planning documents. TtNUS has been tasked with developing the MEC work plan. TtNUS will also take over the MC work plan that Malcolm Pirnie started.

Execution of the MEC work plan requires extreme caution. The Navy has explosives specialists that will help to ensure safety. The current schedule is to have both work plans to the stakeholder group in January, with field work commencing in the spring of 2008.

Ed Benedikt asked about the concentrations within the plume, whether contaminants are increasing or decreasing, and whether the treatment system in place is the right one. [This question refers to the eastern plume, which was the previous presentation.] He also asked about plume migration, and whether the plume is increasing in intensity. Is the DQO process for 1,4 dioxane going to address these questions, and is the extraction well system the answer? Linda stated that TtNUS will do an evaluation after the site assessment to look at different remedies. This review will look

at many options, including pumping. The existing treatment plant will not address 1,4 dioxane - this chemical will need a different type of treatment.

Ed further asked about a handout that lists the status of ongoing and future actions. [Ed was referring to the most recent newsletter, which contained a matrix of projects and their status]. Linda explained that the first step is to refine the scope for the additional investigation, then do the field work to define the nature and extent of 1,4 dioxane and VOCs. TtNUS will then evaluate remedies. Implementation is the step after that. Ed asked that the matrix in the newsletter be updated, he would like to stay on top of the various issues, since he is unable to follow the DQO process. Al Easterday reiterated that the RAB meetings will present up to date information.

Suzanne Johnson asked a combined question – what is TtNUS's experience with 1,4 dioxane remediation, and what is the funding for remediation?

Linda explained that TtNUS will do the work plan and field investigation to define the extent. After that they are tasked with a remedy evaluation. Her firm will not do the implementation, a different Navy contractor will do that. It could be a potential conflict of interest to have TtNUS recommend an expensive remedy and then implement it.

Lonnie Monaco stated that the Navy has funding to implement a ROD for this problem, and that this is a public process. After the ROD comes the design phase, to detail what ever the selected remedy is. After the design, the Navy has a separate contractor for implementation. The Navy will likely bring that other contractor into the process at an early stage.

Suzanne asked about the timing for this whole project. The schedule has been revamped due to the many changes that have come up lately. There will be a DQO meeting held in late February, and there will be an update on this at the next RAB meeting in March.

Suzanne asked about TtNUS' experience with 1,4 dioxane. Linda explained that TtNUS does have experience with this compound, and also conducts research. The existing treatment system is not particularly effective at treating 1,4 dioxane, as it is not volatile. This compound needs to be oxidized. The system does have UV oxidation capabilities, which are effective on 1,4 dioxane, but the system is 15 years old. There are a few treatment scenarios that will be looked at in the evaluation stage.

Suzanne asked about the system's discharge – does it go to a recharge gallery or to the sewer system? Lonnie confirmed that the system recharges on site with sewer back up.

7. SITE 7 REVIEW

Al Easterday gave an update on Site 7 activities (Attachment 6). This site formerly had an acid/caustic waste pit. A ROD was issued in 2002 that specified long term monitoring and institutional controls as the remedy. The LTM program was intended to monitor the natural degradation of cadmium in groundwater. The site has been in the LTM program since 2002. As part of the ROD, three new overburden wells were recently installed. One well was installed in the

source area, and two wells installed outside. The purple circle on the map shows where Cd exceeds the applicable groundwater standard. Groundwater flow is to the south east, towards a drainage ditch that occasionally does have water in it. Shallow groundwater discharges into the ditch during certain times of the year. The new wells that were installed were sampled in the fall of 2007. Cadmium was detected above standards down gradient of the source area. ECC is continuing to monitor groundwater at this Site. The Navy is looking to evaluate how to enhance the remedy, and is also looking at the leaching potential of metals in soil. The Navy knows that this is high priority site for redevelopment.

8. BEDROCK WELL 308 SAMPLING

During the recent LTM activities, VOCs were detected in groundwater samples from well 308 (Attachment 2). ECC then notified DEP and EPA. Additional samples were collected from well 308 and three other bedrock wells in the area, plus samples were collected from a nearby residential well. No VOCs or 1,4 dioxane were detected in the residential well, but low concentrations were detected in wells 309 A and B. It is noted that contamination at monitoring well MW-308 was first detected during the Spring 2006 monitoring event. These wells will be included in the future LTM program. The Navy has established a Technical Evaluation Group (TEG) to review this situation and to recommend the next steps to further assess bedrock. The TEG is made up of technical people such as hydrogeologists and chemists.

NOTE: The latest sampling results for monitoring wells MW-309A and MW-309B indicate there are non-detects for volatile organic compounds (VOCs) in both bedrock wells.

There were several questions from the audience:
What are the depths of these wells? ECC believes the depth to rock is about 40 feet, and that most wells are completed only a few feet into rock. Some wells are open hole, some are screened within a defined interval. Additional details on well construction will be in future LTM reports.

How many eastern plume wells are bedrock wells? There are 13 bedrock wells associated with the eastern plume.

What kind of contaminants were found? The compounds that were detected are chlorinated solvents that are "sinkers".

Have VOCs been detected in bedrock before? No

How old is well 308? This well was installed during the RI process in the early 1990's. There has never been VOCs detected in this well before.

9. UPCOMING FIELD SCHEDULE

Lonnie Monaco gave a brief overview of the 2008 field schedule (Attachment 2). It will be a very busy schedule in 2008. The main work focus includes the following activities:

- Site 9 direct push investigation - currently delayed due to allegations that vacuum tubes may be buried in this area.
- Site 9 ash removal – work is on going.
- Installation of extraction well EW-5B – the well is now installed, it will be hooked up to the treatment system this spring.
- 1,4 dioxane investigation
- Site 12 and munitions investigation
- Site 17 RI
- Old navy fuel farm – on going sampling
- LTM at IRP sites
- Monthly GWETS' sampling
- Background study
- Site 2 RI field investigation

Additional questions from the audience on other activities:
Is there a base wide groundwater model in progress? Yes, although no field work is needed for this.

What is the status of the NEX site? The Navy is continuing to monitor groundwater in this area. TtNUS did complete the 4th round of sampling after the dinitrification study was implemented. The Navy was prepared to go full scale with clean up, but discovered that the process does not work. This site will continue to be monitored for now. The Navy and the regulators are discussing the need to remove soil from the source area, but the station is still active at this time.

10. QUESTIONS

The RAB meeting dates for 2008 were announced:
March 19, June 11, October 8 and December 3.
All meetings will be held at the Parkwood Inn.

Carol Warren asked about the schedule for additional newsletters. The Navy will see a draft of the next newsletter within the next two weeks. What is the plan for future newsletters – the original plan was for quarterly publications? Lonnie responded that the next newsletter is in progress, and schedule may be behind as there are many activities to report. In the future, the website will contain all of this information. The newsletter is planned to be issued in January 2008.

Ed Benedikt asked about the site management plan. The SMP is being updated with current information, and is now back on schedule.

Ed also asked about future site visits. He said that two years ago he and a few others visited the base with the director of EPA. Ed asked if that could happen again in 2008 after the snow melts. Lonnie said that could happen again, provided that security measures are followed.

Suzanne Johnson asked about the fish tissue study. Mike Daly from EPA said that the data was just validated, but that he has not reviewed it yet, nor have the eco risk people reviewed it. There will be additional information on this topic at the next RAB meeting.

Commander Miller presented Lonnie (Orlando) with a letter of commendation for his service, and Claudia Sait presented Lonnie with some Maine books as a gift.

Meeting adjourned at 8:30

ATTACHMENT 1

Sign In Sheet
Naval Air Station Brunswick (NASB) RAB ~~Technical~~ Meeting
Parkwood Inn
Brunswick, Maine
~~Thursday, 13 December 2007~~
~~7:00 PM - 10:00 PM~~
Wednesday, 12 December 2007
7:00 PM - 9:00 PM

NAME	ORG
AL EASTERDAY	ECC
Jackson Kilcer	ECC
Laura Schenck	MPBN
Arnold Ostrofsky	TENUS
Mike Daley	EPA
LINDA KLINK	TENUS
Amy VanDercook	NAVFAC
Claudia Sait	MEDEP
Ted Wolfe	MEDEP
Dan Coyne	Rep Allen
Ed Benedikt	BACSE
Suzanne L Johnson	Brunswick Rep to RAB
Carolyn Lepage	BACSE Tech Advisor
David W. Chipman	Town of Harpswell
GREGORY PRESTON	BRAC PMO
Seth Koenig	Times Record
JOSH KATZ	Brunswick resident
Chris Pond	DISTRICT 63
Vicki Family	BLRA
Bob Bachelder	BLI
Carol Warren	BLRA
John James	NASB Public Affairs
Charles Priest	Brunswick resident
Lonnie Monaco - BRAC PMO	~~BRAC PMO~~
Lisa Joy - NASB Envir.	
CDR Barry Miller - Exec. Off., NASB	
Joy Healy	ESTM

ATTACHMENT 2

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7:10 – 7:20 Stipulated Penalties

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- Direct Push Investigation (ECC)

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- Site 2
- Site 17
- Background Study

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7:50 – 8:00 MMRP Status (TtNUS)

8:00 – 8:10 Site 7 Review (ECC)

8:10 – 8:20 Bedrock Well MW-308 Sampling Results (ECC)

8:20 – 8:40 Field Work Schedule for 2008 (All)

8:40 – 8:45 RAB Meetings 2008 (Navy)

8:45 – 9:00 Questions & Future RAB Agenda Topics

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Restoration Advisory Board Meeting

12 December 2007

Parkwood Inn, Brunswick, Maine
7:00 PM

Introductions

- *Navy BRAC Program Management Office Northeast Representatives:*
  - Mr. Lonnie Monaco, P.E., Remedial Project Manager
  - Mr. Greg Preston, Deputy Director BRAC PMO NE
  - Ms. Amy Vandercook, NAVFAC Atlantic
- *Naval Air Station Brunswick Representatives:*
  - Commander Barry Miller, NASB Executive Officer
  - Ms. Lisa Joy, Environmental Director
  - Mr. Michael Fagan, Installation Restoration Coordinator

Introductions (cont.)

- *U.S. Environmental Protection Agency Representatives:*
  - Mr. Michael Daly, Remedial Project Manager
- *Maine Department of Environmental Protection Representatives:*
  - Ms. Claudia Sait, Remedial Project Manager
  - Mr. Chris Evans, P.G., Project Geologist
- *Brunswick Area Citizens for a Safe Environment Consultant:*
  - Ms. Carolyn Lepage, C.G., Lepage Environmental
- *Restoration Advisory Board Co-Chairs*
  - Thomas Fusco, Brunswick Community
  - Captain George Womack, Commanding Officer

Meeting Agenda

- *Welcome!*
- Introductions & Administrative Items (Navy)
- Status of Stipulated Penalties (Navy)
- Site 9 Activities Update (Navy/ECC)
- Data Quality Objective (DQO) Overview (TtNUS)
- Sampling and Analysis Plan (SOP) for Supplemental Remedial Investigations of 1,4-Dioxane (TtNUS)
- Site 7 Overview (ECC)
- Bedrock Well MW-308 Sampling Results (Navy/ECC)
- Field Work Schedule (Navy/ECC/TtNUS)
- RAB Meeting in 2008 (Navy)
- Questions & Future RAB Agenda Topics

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Stipulated Penalties Status

- Dispute Resolution Committee (EPA, MEDEP and Navy) met on October 18th at EPA Headquarters in Boston.

6

Site 9 Activities Update

- Site 9 Discoveries during Excavation Activities

- Excavation Activities
  - Since 2006, over 18,000 tons of ash has been disposal of to the landfill with an additional 842 tons of ash being disposed of as hazardous waste.
  - Currently, there are 7 ash piles on site. An additional 7 piles will be created this week due to additional excavation activities in the northwestern corner of the excavation.
  - Confirmatory sampling was conducted last week, within the northeastern corner with results expected by the end of this week.
  - Excavation activities expected to be completed by the end of December.

7

Site 9 Current Excavation Area

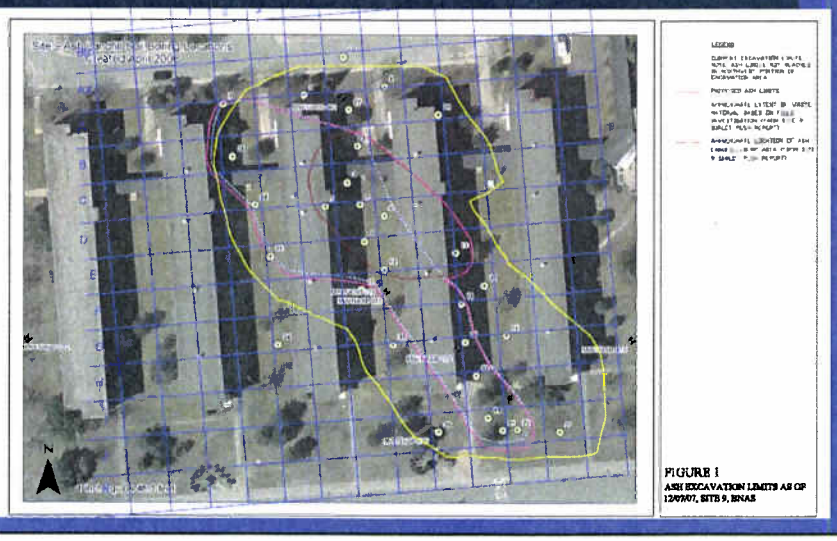

FIGURE 1
ASH EXCAVATION LIMITS AS OF 12/7/07, SITE 9, IRNAS

Site 9 Activities Update

- **Site 9 South of Neptune Drive, Building 201 and Irrigated Play Field Direct-Push Investigations Status**
  - The field activities for the direct-push investigation are on hold pending further assessment of recent discoveries.

Data Quality Objective (DQO) Overview

TtNUS

Sampling & Analysis Plan (SAP) for Supplemental Remedial Investigation of 1,4-Dioxane

TtNUS

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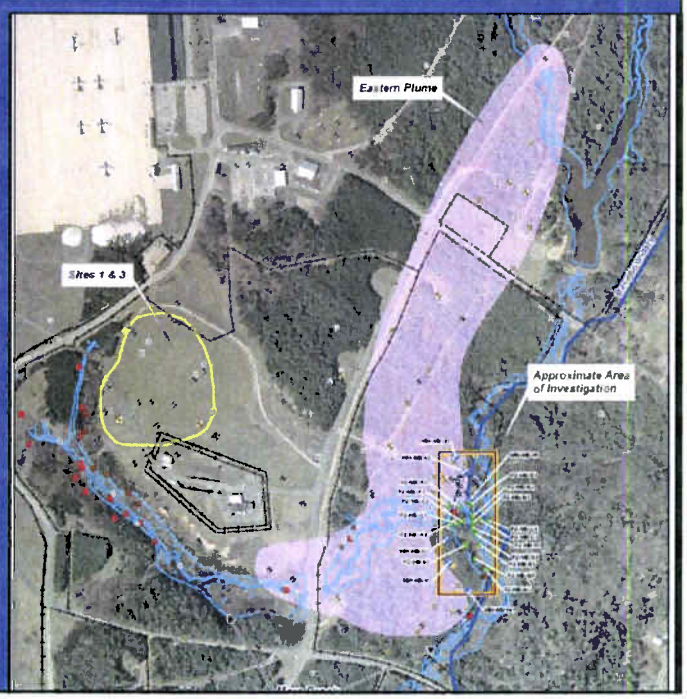
Mere Brook Investigation Study Area



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Military Munitions Restoration Program (MMRP)

TtNUS

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Site 7 Status and Overview

ECC

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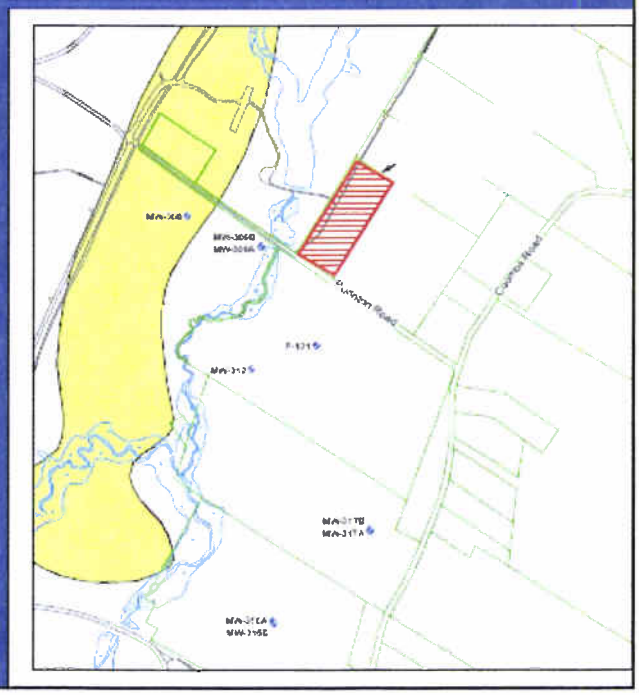
Bedrock Well MW-308 Sampling Results

- **Preliminary analytical results for bedrock wells:**
  - Analytical results for MW-308 (10 October 2007) indicate VOCs present in bedrock at this location above regulator criteria. 1,4 – dioxane was also reported in MW-308 below the MEG.
  - Preliminary analytical results of bedrock wells MW-309A/B (26 November) and Residential Well Sampling collected on 27 November indicate non-detect for VOCs and 1,4-dioxane.
- **Actions Taken To Date:**
  - Adding bedrock monitoring wells (MW-308, MW-309A and MW-309B) into the LTMP for Eastern Plume.
  - Establishing a Technical Evaluation Group (TEG) to further assess this conditions of the bedrock aquifer in the vicinity of MW-308.

15

Residential Sampling Area



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Upcoming Field Work Schedule

- Site 9 Direct Push Investigation –2008
- Site 9 Removal Actions – On-going
- Extraction Well EW-5B vault and piping installation – January 2008
- 1,4-Dioxane Investigation of Eastern Plume – 2008
- Site12 and Munitions AOC Site Inspections – Spring/Summer 2008
- Site 17 Remedial Investigation Field Activities – 2008
- Old Navy Fuel Farm Groundwater Sampling -Spring/Fall 2008
- Long-Term Monitoring at Installation Restoration Program Sites – Spring and Fall 2008
- Monthly Groundwater Extraction Treatment System Sampling – on-going into 2008
- Base-Wide Background Study Field Work – 2008
- Site 2 Supplemental Remedial Investigation Field Work – 2008

Questions

- Future Restoration Advisory Board Agenda Items
- Next NAS Brunswick Restoration Advisory Board Meeting
  - March 2008 (Wednesday)

ATTACHMENT 3

TETRA TECH

Date Quality Objectives Overview

December 12, 2007

What is the DQO Process

It is a systematic process to help the "Team" plan to collect data of the right type, quality, and quantity to support defensible site decisions.

TETRA TECH

Benefits of the DQO Process

The DQO Process:

- improves the application and interpretation of sampling designs by using statistical and scientific principles for optimization;
- addresses the right questions early in the investigation by obtaining better knowledge of the waste constituents;
- achieves efficiency through generating the appropriate type and amount of data necessary to answer the question;
- helps investigators conserve resources by determining which data collection and analysis methods are most appropriate for the data quality needs of the study; and
- provides investigators with a stopping rule—a way for the planning team to determine when enough data of sufficient quality have been collected to make site decisions with the desired level of confidence.

TETRA TECH

Studies that have had DQO Meetings

- Background Study
- Site 2 and the Area North of Site 2
- Site 17 (Building 95)

TETRA TECH

The 7 Steps of the DQO Process

- Step 1 – State the Problem
- Step 2 – Identify the Decision(s)
- Step 3 – Identify the Inputs to the Decision
- Step 4 – Define the Study Boundaries of the Study
- Step 5 – Develop a Decision Rule(s)
- Step 6 – Specify Tolerable Limits on Decision Error
- Step 7 – Optimize the Design for Obtaining Data

TETRA TECH

Step 1: State the Problem - Site 17

Need to know what contamination remains in soils so land can be transferred

What is the extent of gw and soil contamination

TETRA TECH

Step 2: Identify the Decision

Q#1 - Is there unacceptable current or future risk to human or eco receptors?

Action – If unacceptable current or future risk for human health or ecological receptors is found, a decision will be made whether to do a removal or a feasibility study.

Q#2 - What is the extent of GW contamination and soil contamination, horizontal and vertical?

Action - If soil or GW contamination is not delineated and there is a potential risk contribution, continue delineating. Otherwise, stop delineating.

Q#3 - What are options for remediating soil strip south of Ave B?

Action -Based on professional judgment and the applicable factors and other site actions, select appropriate action.

TETRA TECH

Step 3: Identify Inputs to the Decision

Soils

- Pesticides and herbicides listed in the IAS

Groundwater

- Pesticides and herbicides
- Cn
- As, Pb, and Zn

TETRA TECH

Step 4: Define the Boundaries of the Study

Extent of soil and groundwater contamination both horizontally and vertically

TETRA TECH

Step 5: Develop a Decision Rule

GW:

If any of the following conditions is true for any target compound in any GW sample in the direction of delineation, continue delineation; otherwise, stop delineation:

- The measured [Metal] > RBC/3 and the published [BKG]
- The measured [DRO] > (RBC/3) and surrounding concentrations based on professional judgment
- The measured [pesticide], [herbicide], or [cyanide] > (RBC/3) **and** > MDL
- How to handle field duplicates? Use average of the two values (original and duplicate).

TETRA TECH

Step 5: Develop a Decision Rule

SOIL:

If any of the following conditions is true for any target compound in any surface or subsurface soil sample in the direction of delineation, continue delineation; otherwise, stop delineation:

- The measured [Metal] > RBC/3 and the published [BKG]
- The measured [DRO] > Maine DRO limit of 10 mg/kg
- The measured [pesticide], [herbicide], or [cyanide] > (RBC/3) **and** > MDL

TETRA TECH

Step 6: Specify Tolerable Limits on Decision Errors

The sampling approach was reviewed during the DQO meeting and it was determined that grid approach provided sufficient samples and statistical analyses was not needed.

TETRA TECH

Step 7: Optimize the Design for Sampling Approach

A grid was developed to determine the extent of soil contamination from both areas that may have previously been excavated and from areas that have had no previous excavation. Samples were located within the grid at highly contaminated areas.

Groundwater monitoring wells are planned for upgradient, in the source area, and downgradient.

TETRA TECH

ATTACHMENT 4

TETRA TECH

STATUS OF REMEDIAL INVESTIGATION 1,4-DIOXANE IN THE EASTERN PLUME

NAVAL AIR STATION BRUNSWICK MAINE

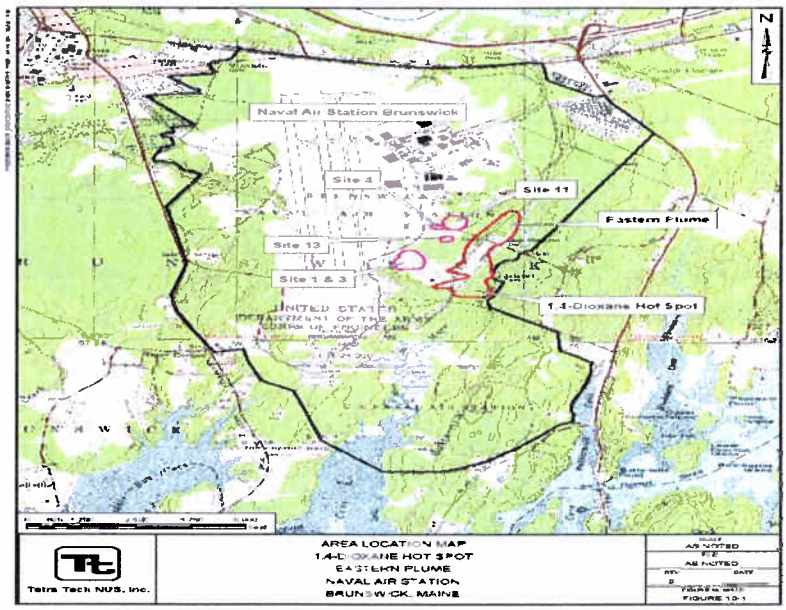
DECEMBER 12, 2007 RAB MEETING

OBJECTIVE

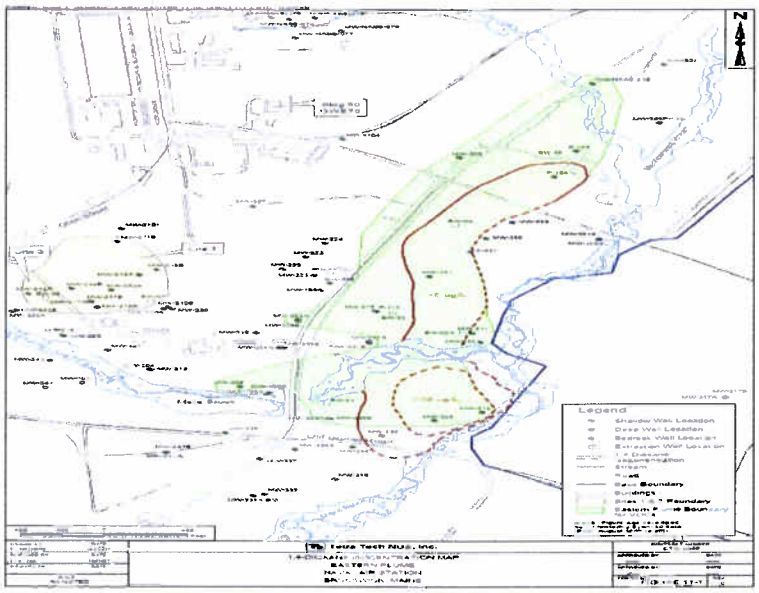
Develop Sampling and Analysis Plan (SAP) to Refine the Extent of 1,4-Dioxane Contamination Exceeding the State Criterion of 32 ug/L for Drinking Water

TETRA TECH

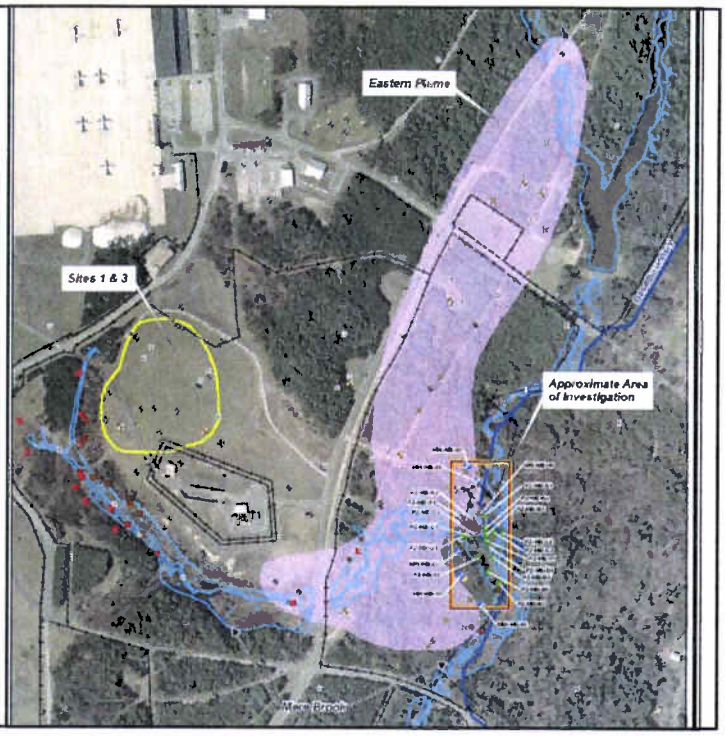
AREA LOCATION MAP



1,4-DIOXANE ISOCONCENTRATION MAP



Mere Brook Investigation Study Area



PLANNED WORK SCOPE

- Installation and Sampling of Groundwater from New and Existing Monitoring Wells
- Collection of Water Levels from Select Wells and New Piezometers

TETRA TECH

SCHEDULE

- Sampling and Analysis Plan (SAP)
  - Draft to Stakeholders on October 16, 2007
  - Stakeholder Review In Progress
  - Expand effort based on new ECC results
- Field Work
  - Start in Spring 2008 Pending Comment Resolution on Work Plan

TETRA TECH

ATTACHMENT 5

TETRA TECH

MUNITIONS RESPONSE PROGRAM (MRP)
SITE INSPECTIONS OF 6 MUNITIONS AREAS
STATUS

NAVAL AIR STATION BRUNSWICK MAINE

DECEMBER 12, 2007 RAB MEETING

MC AND MEC DEFINITIONS

- MEC = Munitions and Explosives of Concern
  - Ammunition components that may pose explosive safety risks
- MC = Munitions Constituents
  - Chemicals originating from explosive and non-explosive materials

TETRA TECH

MRP SITES

AS DETERMINED BY PRELIMINARY ASSESSMENTS:

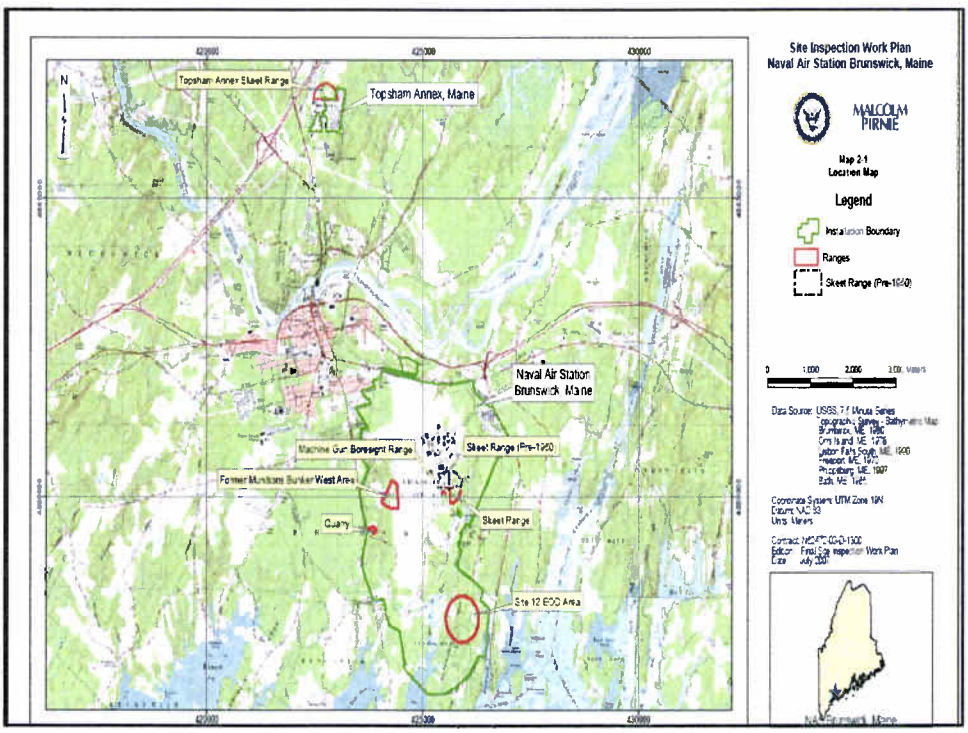
MC Munitions Areas Only

- Machine Gun Bore Sight Range
- Skeet Range
- Topsham Annex Skeet Range

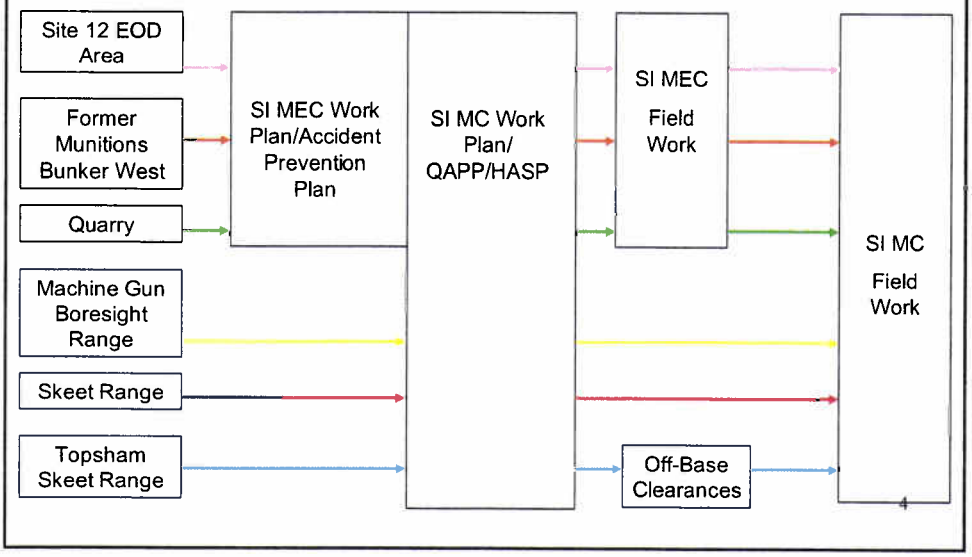
MC and MEC Munitions Areas

- Site 12 Explosives Ordnance Disposal (EOD) Area
- Former Munitions Bunker West
- Quarry

TETRA TECH



PATH FORWARD – PLANNING/IMPLEMENTATION



SITE VISIT

- Site Visit Conducted October 23 - 24, 2007 with Stakeholders
- Resulted in Stakeholder Input/Suggestions
- Tetra Tech Tasked to Incorporate Changes to Malcolm Pirnie Draft MC Site Inspection (SI) Work Plan (dated February 2007)

TETRA TECH

PLANNING DOCUMENTS

- MC Work Plan
  - SI MC Work Plan by Malcolm Pirnie (dated February 2007)
  - Revisions by Tetra Tech
  - QAPP and HASP Attachments by Tetra Tech
- MEC Work Plan
  - MEC Work Plan by Tetra Tech in preparation
  - Explosives Safety Submittal (ESS) Determination Approvals Received from Naval Ordnance Safety and Security Activity (NOSSA)

TETRA TECH

SCHEDULE

- MC Work Plan and MEC Work Plan
  - Draft to Stakeholders in January 2008
- Field Work
  - Start in Spring 2008 Pending Comment Resolution on Work Plans

TETRA TECH

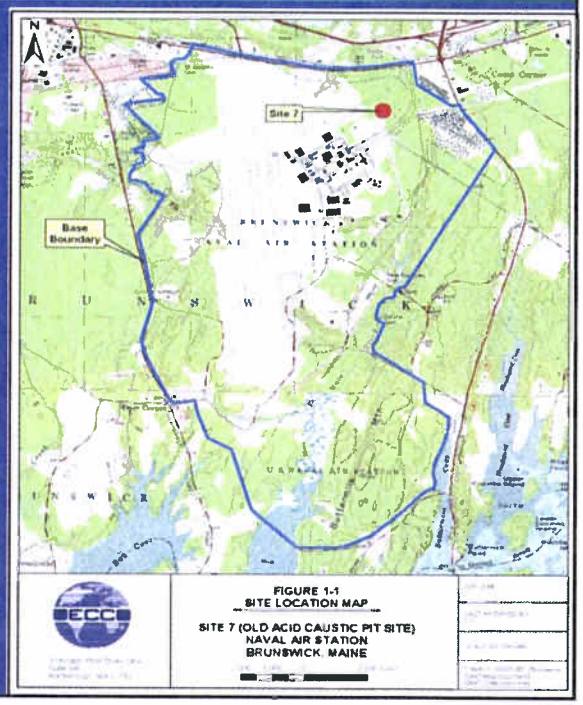
ACRONYM DEFINITIONS

• EOD	Explosives Ordnance Disposal
• ESS	Explosives Safety Submittal
• HASP	Health and Safety Plan
• MC	Munitions Constituents
• MEC	Munitions and Explosives of Concern
• MRP	Munitions Response Program
• NOSSA	Naval Ordnance Safety and Security Activity
• QAPP	Quality Assurance Project Plan
• RAB	Restoration Advisory Board
• SI	Site Inspection

TETRA TECH

ATTACHMENT 6

Site 7 Location Map



1

Site 7 Monitoring Well Installation Update

- **Overview and History of Site 7 –Old Acid Caustic Pit**
  - Site 7 is the former location for acid and caustic liquid waste disposal used from 1952 to 1969 for disposal of transformer oils, battery acids, caustics, and solvents.
  - As per the 2002 Record of Decision, the Site 7 remedy requires institutional controls with groundwater monitoring.
  - Long-Term monitoring has been on-going at Site 7 since 2005.
  - Three new monitoring wells were installed in June 2007 to refine the groundwater monitoring well network at the Site inside the Institutional Control Boundary.

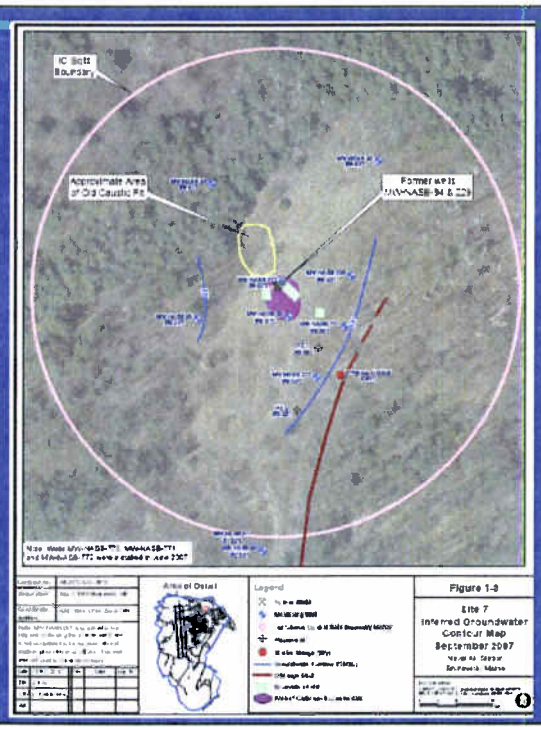
2

Site 7 Monitoring Well Installation Update

- **Field Program 20-21 June and September 2007**
  - Advanced three soil borings to the confining clay layer. Total depth of borings ranged from 8 ft to 12 ft bgs. using drive and wash drilling methods with continuous 2-ft soil sampling.
  - Install three monitoring wells, MW-770, MW-771, and MW-772. All wells are screened across the overburden/groundwater interface at a shallow depth.
  - September 2007 - Groundwater samples collected for TAL metals, alkalinity, other water quality parameters.

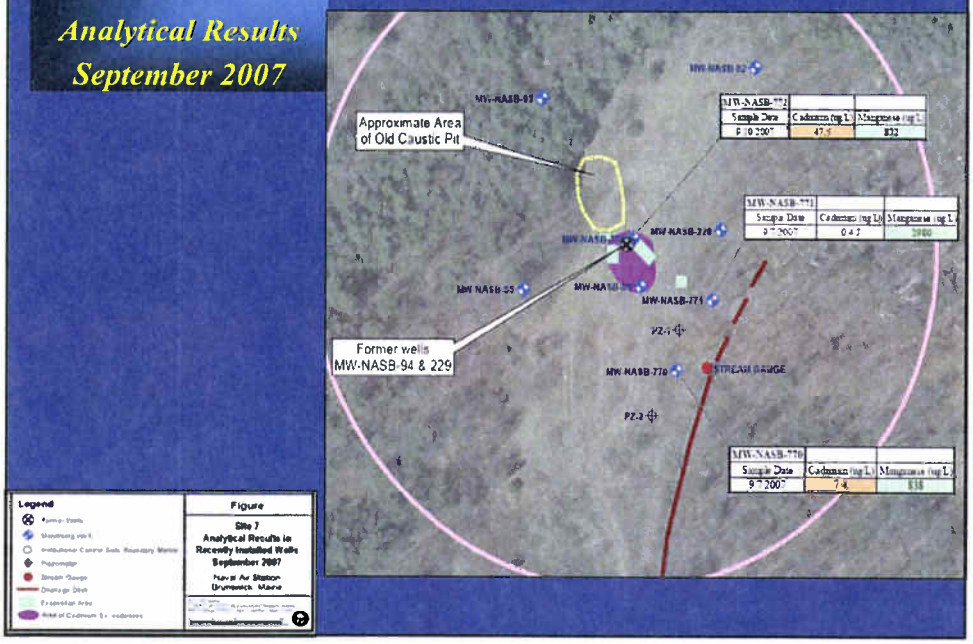
3

Site 7 Groundwater Flow



4

Site 7 Analytical Results September 2007



Site 7 Monitoring September 2007 Analytical Results

ANALYTES		SITE 7 MONITORING WELLS									
		MW-091	MW-092	MW-093	MW-095	MW-096	MW-098	MW-228	MW-770	MW-771	MW-772
Cadmium	ug/L	ND	0.6 J	ND	0.2 J	0.2 J	10.5	3.9	7.2	0.4 J	47.5
pH	SU	5.69	6.13	5.14	4.93	4.85	5.37	5.17	5.18	6.87	6.49
ORP	mV	136.7	170.4	166.3	210.3	161	226.9	174.4	121	12.3	194.2
Alkalinity, Total as CaCO3	mg/L	25.6	10.7	ND	ND	ND	20.2	22.4	25.6	104	25.6
Manganese	ug/L	71.5	126	4.8	16.1	26.2	19.6	270	838	2980	822
Arsenic	ug/L	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	ug/L	30 J	64.8 J	31.3 J	46.2 J	14.2 J	253	7 J	1250 J	17,700	21.1 J

Exceedes Cd MCL (5) and MEG (3.5)
Exceedes Mn MEG (500)

6

Summary

- **Summary of September 2007 Groundwater Data from New Monitoring Wells**
  - Cadmium detected in 4 of the 10 monitoring wells sampled: MW-099 near source area, MW-228, cross-gradient, MW-770 downgradient and MW-772 near source area in exceedance of MEG and MCL standards. With the higher reported concentrations are near the former excavation area.
  - Concentrations of cadmium are generally reported in lower concentrations downgradient, although above the regulatory standards.
  - Manganese detected in 3 of the 10 monitoring wells sampled: MW-770, MW-771 and MW-772.

7

ATTACHMENT 7

From: "Victoria Boundy" victoriab@mrra.us
To: Al Easterday, calepage@adelphia.net, carol@wacubu.com, claudia.b.sait@maine.gov, Daly.Mike@epamail.epa.gov, dwchipman@suscom-maine.net, Gina Calderone, Helen Cavanagh, Jeff Donovan, Linda.Klink@ttnus.com, michael.fagan1@navy.mil, orlando.monaco@navy.mil, rbenedik@gwi.net, smalljohn@suscom-maine.net, todd.bober@navy.mil
Subject: RE: BACSE comments on draft 12/12/07 RAB meeting notes
Date/Time: 2/1/2008 10:48 AM

Lonnie/Todd,

Responding to BACSE's letter:

Here is the correct spelling for the following attendees:

Robert Rocheleau, BLRA
Seth Koenig, Times Record

Thank you.

-Vicky Boundy
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Victoria Boundy

Planning and Environmental Manager

Midcoast Regional Redevelopment Authority (MRRA)

5450 Fitch Avenue

Brunswick, ME 04011

Phone: 207.798.6512 / Fax: 207.798.6510

www.mrra.us
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Lepage Environmental Services, Inc.

P. O. Box 1195 ! Aubum, Maine 04211-1195 ! 207-777-1049 ! Fax: 207-777-1370

January 31, 2008

Mr. Orlando Monaco
Department of Navy
Base Realignment and Closure PMO-Northeast
4911 South Broad Street
Philadelphia, PA 19112-1303

Subject: Draft December 12, 2007, Restoration Advisory Board Meeting Notes

Dear Mr. Monaco:

The following comments on the draft December 12, 2007, Restoration Advisory Board Meeting Notes are submitted on behalf of the Brunswick Area Citizens for a Safe Environment (BACSE). The Draft Notes were prepared by ECC and downloaded from ECC's secure website on January 2, 2008.

1. Meeting Attendees. Please check the spelling for Robert Rochelear and Seth Koenie. Our notes indicate that Mike Fagan from NAS Brunswick was also present.

2. Stipulated Penalties. Please identify Greg Preston as the speaker/presenter in this section.

3. Site 9 Update. With regard to radioactive levels in the vacuum tubes, please add that, according to Lisa Joy, the technician's letter said that the tubes contained very low levels of radioactivity..

4. DQO Overview. Please identify the audience member in the next-to-last paragraph as Suzanne Johnson.

6. MMRP Process. In the third-to-last paragraph, please correct the month of the DQO meeting. It will be held in late February.

8. Bedrock Well 308 Sampling. Please add a Note stating that the information presented regarding monitoring wells MW-309A and MW-309B was incorrect. The latest results for the two bedrock wells were non-detects for volatile organic compounds. Please also add a Note that contamination at monitoring well MW-308 was first detected during the Spring 2006 monitoring event.

10. Questions. Our notes indicate that both the newsletter and the Site Management Plan are to be issued in January/February 2008.

Please do not hesitate to call if you have any questions.

Sincerely,

Carolyn A. Lepage, C.G.
President

cc: Loukie Lofchie, BACSE
Ed Benedikt, BACSE (email only)
Claudia Sait, MEDEP
Al Easterday, ECC
Gina Calderone, ECC (email only)
Dave Chipman, RAB (email only)
Mike Daley, EPA
Todd Bober, BRAC PMO (email only)
Suzanne Johnson, BACSE (email only)
Mike Fagan, NASB
Carol Warren, BACSE (email only)
Helen Cavanagh, ECC (email only)
Jeff Donovan, ECC (email only)
Linda Klink, TetraTech (email only)
Victoria Boundy, MRRA (email only)

102Dec12RABMtgNotes31.ja8

From: "Sait, Claudia B" <Claudia.B.Sait@maine.gov>
To: calepage@adelphia.net; Helen Cavanagh
CC: Gina Calderone; todd.bober@navy.mil
Subject: RE: *NASB meeting notes
Date/Time: 1/31/2008 9:28 AM

Helen,

MEDEP has no comments on the RAB meeting.

Claudia Sait
Maine Department of Environmental Protection
Federal Facilities Unit
(207) 287-7713
claudia.b.sait@maine.gov

-----Original Message-----
From: Helen Cavanagh [mailto:HCavanagh@ecc.net]
Sent: Thursday, January 31, 2008 9:17 AM
To: calepage@adelphia.net; Sait, Claudia B
Cc: Gina Calderone; todd.bober@navy.mil
Subject: *NASB meeting notes

Hi Claudia and Carolyn,

We are planning to send out the meeting notes from 2007 by Friday, February 8.

MEDEP owes comments on October and December RAB meeting notes.

BACSE owes comments on the December Technical meeting notes.

Please send your comments by COB Monday, February 4.
We really appreciate your help with getting all these notes issued!

Thank you,
Helen

Helen Cavanagh
Environmental Scientist
ECC
33 Boston Post Rd. West-Suite 340
Marlborough, MA 01752
office phone:: (508)-229-2270
cell:: (508)-397-0315

From: Daly.Mike@epamail.epa.gov
To: Helen Cavanagh
CC: Al Easterday; Amy L CIV NAVFAC Atlantic Van Dercook; arnold.ostrofsky@ttnus.com; calepage@adelphia.net; Claudia.B.Sait@maine.gov; dmctigue@GFNET.com; Gina Calderone; linda.klink@ttnus.com; lisa.joy@navy.mil; orlando.monaco@navy.mil
Subject: NASB: December 2007 RAB Meeting Notes
Date/Time: 1/10/2008 11:27 AM

Hi Helen,

EPA has reviewed the 12/07 RAB meeting notes and we have no comments.

Thank you,

Mike Daly
EPA Region I

From: "Ed Benedikt" rbenedik@gwi.net
To: Gina Calderone; Helen Cavanagh
CC: Carolyn Lepage
Subject: NASB-December 2007 RAB mtg notes-cmt
Date/Time: 12/23/2007 11:01 PM

From: "Ed Benedikt" <rbenedik@gwi.net>
Date: Sunday, December 23, 2007

BACSE comments regarding mail distribution and listing of attendees follows:

In the future, please include Suzanne Johnson in all mailings . Her E-mail address is smalljohn@suscom-maine.net

List of Attendees:
Dan Coyne's listing should be clarified. He represents Congressman Tom Allen's office.
Seth Koenies name is misspelled. It should be Seth Koenig .
The listing for Charles Priest should be clarified and separated from the next name listed. He is Representative Charles Priest and is the State of Maine legislator representing District 63.
Peter Lee , a Town of Harpswell resident has been omitted.
Carolyn Lepage, the BACSE Technical Consultant has been omitted

Sincerely,
Ed Benedikt