

**Agenda - Restoration Advisory Board (RAB) Meeting**  
**Naval Air Station Brunswick, Maine**  
**Wednesday, 11 June 2008**  
**Parkwood Inn**  
**7:00 to 9:00 pm**

**7:00 – 7:15 Introductions**

- New NAS Brunswick Commanding Officer – Captain Fitzgerald

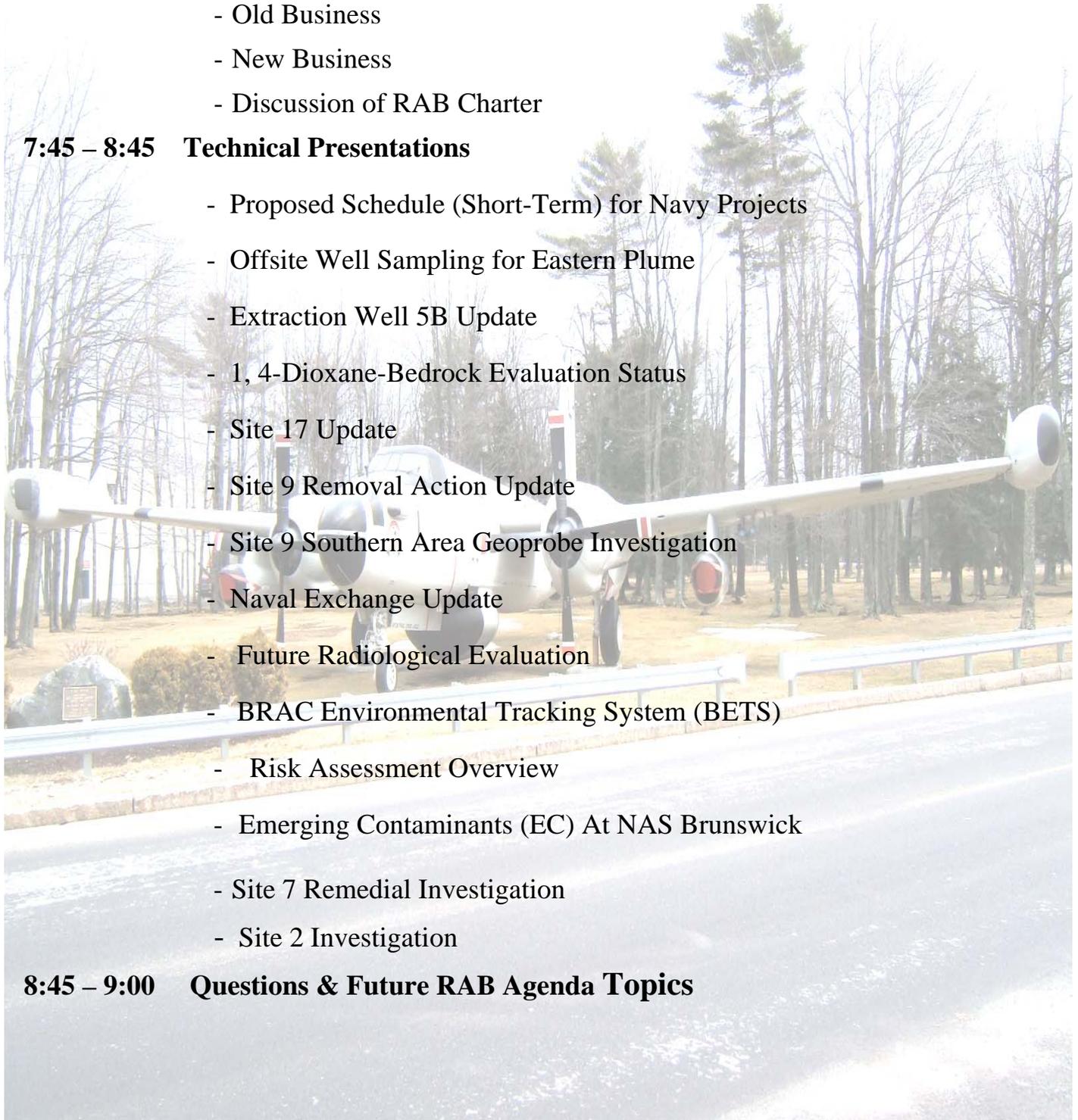
**7:15 – 7:45 RAB Administrative Items**

- Old Business
- New Business
- Discussion of RAB Charter

**7:45 – 8:45 Technical Presentations**

- Proposed Schedule (Short-Term) for Navy Projects
- Offsite Well Sampling for Eastern Plume
- Extraction Well 5B Update
- 1, 4-Dioxane-Bedrock Evaluation Status
- Site 17 Update
- Site 9 Removal Action Update
- Site 9 Southern Area Geoprobe Investigation
- Naval Exchange Update
- Future Radiological Evaluation
- BRAC Environmental Tracking System (BETS)
- Risk Assessment Overview
- Emerging Contaminants (EC) At NAS Brunswick
- Site 7 Remedial Investigation
- Site 2 Investigation

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





**RESTORATION ADVISORY BOARD (RAB) MEETING  
NAVAL AIR STATION BRUNSWICK, MAINE  
11 JUNE 2008  
MEETING NOTES**

**MEETING ATTENDEES**

Todd Bober, Remedial Project Manager	U.S. Navy, MIDLANT
Paul Burgio, BRAC Environ. Coordinator	U.S. Navy, BRAC PMO Northeast
David Barclift, Biologist/Risk Assessor	U.S. Navy, NAVFAC
Claudia Sait, Remedial Project Manager	Maine Department of Environmental Protection
Ted Wolf	Maine Department of Environmental Protection
Mike Daly, Remedial Project Manager	U.S. Environmental Protection Agency
Al Easterday, Project Manager	ECC (Navy Contractor)
Doug Heely	Environmental Strategies & Management.
Lisa Joy, Environmental Director	Naval Air Station Brunswick
Mike Fagan, IRP Manager	Naval Air Station Brunswick
Carol Warren	Brunswick Area Citizens for a Safe Environment
Victoria Boundy, Planner	Mid-Coast Regional Redevelopment Authority
David Chipman, RAB Member	Town of Harpswell, Maine
Robert Gersh	MACTEC Engineering and Consulting
Carolyn Lepage	Lepage Environmental Services
Suzanne Johnson, RAB Co-Chair	Brunswick Area Citizens for a Safe Environment
Ed Benedikt	Brunswick Area Citizens for a Safe Environment
Tom Fusco	Brunswick Area Citizens for a Safe Environment
John James, Public Affairs Director	Naval Air Station Brunswick
Marty McMahan, BRAC Manager	Naval Air Station Brunswick
Capt. William Fitzgerald, Commanding Officer	Naval Air Station Brunswick
Ann Fitzgerald	Brunswick Citizen

**MEETING LOCATION:** The Restoration Advisory Board (RAB) Meeting was held at the Parkwood Inn in Brunswick, Maine. The meeting began at 7:10 PM.

**1. INTRODUCTIONS**

Todd Bober, U.S. Navy Remedial Project Manager, opened the meeting. Todd introduced Ms. Suzanne Johnson as citizen Co-Chair of the Restoration Advisory Board (RAB). Todd introduced the new Naval Air Station Brunswick (NASB) Commanding Officer, Captain William Fitzgerald, who serves as the military RAB Co-Chair. Captain Fitzgerald made some opening remarks. Captain Fitzgerald was stationed here in the late 1980's. He takes the RAB's work seriously and considers himself a steward of the environmental clean-up process. His goal is to see the remedial efforts through to completion.

Introductions were made around the room.

## **2. RESTORATION ADVISORY BOARD ADMINISTRATIVE ITEMS**

### Old Business

Todd stated that one of the items that he is looking to improvement upon is distribution of the meeting notes. In the future, RAB meeting notes will be sent out earlier and will be finalized prior to the next RAB meeting.

David Chipman proposed a change in the agenda related to the RAB Charter. The stakeholders just received the Navy's proposed changes to the BRAC Clean-up Team (BCT) and RAB Charter. The RAB members stated the need for more time to review the Navy's edits to the proposed RAB Charter. Mr. Chipman asked that RAB Charter discussion be deferred to the next RAB meeting in October. He also requested to add discussion on the BCT be included as a future agenda item. Todd agreed to table the RAB Charter discussion until the next RAB meeting.

Paul Burgio explained what the BCT is. The BCT is the core decision making group, and consists of the US Navy, Maine DEP and US EPA project managers. Paul said the Navy needs to do a more effective job of communicating the entire process of base closure and transfer and will present at the next RAB meeting how all the processes work and fit together.

David Chipman said he found the technical meetings to be very useful, which will not be open to RAB stakeholders under the proposed RAB Charter. The Maine DEP representatives stated that they support the community being involved in technical meetings.

Carolyn Lepage asked about the status of the Stipulated Penalty. Paul explained that the US EPA Administrator, Maine DEP Commissioner, and Assistant Secretary of Navy for Environment, met recently to discuss the Stipulated Penalty. Paul is not sure what the outcome of the meeting. Claudia Sait thought that the final decision was up to the US EPA Administrator, and that a decision would be announced this week.

New Business - No new business.

Discussion of RAB Charter - Tabled for discussion until the October 2008 RAB meeting.

## **3. TECHNICAL PRESENTATIONS**

### Proposed Schedule for Navy Projects

A proposed short-term schedule for field work this summer was presented. The stakeholders are looking for new ways to expedite the approval process. Todd wants to get all of these projects initiated this year so that the collected data can be reviewed during the winter. This type of approach will help to complete the various site tasks at the sites more quickly for next year's field season. The items shown on this schedule are all funded, but the actual implementation may be dependent on getting stakeholders approval to proceed.

Offsite Well Sampling for Eastern Plume

Todd stated that Maine DEP did off-site well sampling in the past, and no problems related to the Eastern Plume were found. Because of some recent on-site monitoring well sampling results, several stakeholders recommended continued sampling of residential wells. The Navy has agreed to conduct off-site private residential well sampling this fall and next spring at one location. The well is located to the east of the Eastern Plume.

Ed Benedikt mentioned that BACSE wanted other wells sampled because flow patterns are very complex in this area. More investigative work is planned in the Eastern Plume, which may alter the residential well sampling program in the future.

Al Easterday mentioned that the Navy has sampled several additional residential wells in the last 3 years. The current residential well sampling plan was developed based on monitoring well MW-308 results. Additional monitoring wells are planned in bedrock to assess the potential connection to residential wells.

Suzanne Johnson asked if the homeowners are aware of the sampling plan. John James stated that they have been notified in writing and by phone. The residents expressed no concerns with the approach, and they are familiar with the process since their well has been sampled in the past.

Claudia Sait said that Maine DEP sampled the well numerous times at the new house in question and samples were either taken from the tap or an outside spigot. The sample was collected from the tap inside the house. Al explained that private potable wells are sealed, which is why samples are collected from the tap and not inside the well. There are specific procedures to follow for sampling private wells.

Tom Fusco said that he thought the rock was fractured granite, supporting Ed Benedikt's recommendation to do more sampling. His concern, like Ed's, is that bedrock is very complex and how can the Navy be sure that this sampling is enough? Tom asked what data needs to be seen in order to expand the sampling program.

Mike Daly of EPA said that the conceptual site model for the Eastern Plume indicates that contamination is confined to overburden soils mostly, and is not found in bedrock. The area around monitoring well MW-308 is believed to be a localized issue and not indicative of wide spread bedrock contamination. The objective of the additional drilling planned for this year is to verify this.

Al Easterday explained that the marine clay is very widespread across the Eastern Plume. The monitoring well MW-308 area is a bedrock knob (bedrock high) where the marine clay is not present. Everywhere else where there is the marine clay, the clay is a barrier to contaminant migration into bedrock. There are also monitoring wells between the monitoring well MW-308 area and the residential wells, which have not shown contamination.

Mike Daly said that there was general consensus from the stakeholders to move forward with the bedrock drilling and well sampling plan.

### Extraction Well EW-5B Update

Al Easterday stated that the new extraction well, EW-5B, was installed in June of 2007. This extraction well was developed and is being sampled under the Long Term Monitoring program. Additional work, including vault construction, piping and electrical connections, as well as a pump test, will be completed this field season. Claudia Sait asked if the pump test and the aquifer recovery test were the same thing. Al explained that the aquifer recovery test was completed in April 2008 to calibrate the Eastern Plume groundwater model. The pump test for extraction well EW-5B is to test the yield and performance of just that well, EW-5B.

### 1,4-Dioxane Bedrock Evaluation Status

A technical meeting was held in February 2008 to determine what additional work was needed to delineate 1,4-dioxane in bedrock and overburden. There have been additional discussions on this topic since then to expedite field work this field season (2008). The work will include completion of pore water sampling in Merriconeag Stream, lithology profiling, direct push groundwater sampling and installation of new permanent monitoring wells. Recently, the Navy, Maine DEP and US EPA walked the stream area to identify pore water sampling locations. This program will include sampling for 1,4-dioxane and other volatile organic compounds (VOCs). The plan is to do the preliminary work this year, review data this winter, and install permanent wells next year.

Suzanne Johnson asked if the sampling under this program was for the same contaminant at the private well. Todd indicated that both programs will include sampling for 1,4-dioxane and VOCs.

The stakeholders are developing a new approach to expedite the consensus building process in order to initiate fieldwork more quickly. All stakeholders agree that the Eastern Plume is a high priority. A revised work plan for this investigation is scheduled for August 2008.

### Site 17 Update

The work plan for Site 17 is currently being finalized, and it is anticipated that field work will be conducted this fall. The work plan is for soil removal, and will be submitted for comment in June 2008. Todd explained that the removal area is very small.

### Site 9 Removal Action Update

Todd reviewed the progress at Site 9 relative to the excavation program. Approximately 41,354 tons of "special waste" have been removed and sent off site for disposal over the last two years. This excavation project is nearly complete, and the Navy expects to finish restoring the work area by Labor Day of this year. More assessment work is planned to better define additional clean-up areas north and south of the main excavation. Once this additional data is collected this field season, the Navy will review the data over the winter to determine what additional clean-up actions are appropriate.

Carolyn Lepage asked about the process for installing poly sheeting and photo documenting the work area. The excavation areas will be lined with "poly", and geographical positioning system (GPS) will be used to document the excavation area.

### Site 9 Southern Area Geoprobe Investigation

Al Easterday presented a summary of ECC's recent investigation activities, which began on May 27. This work included groundwater sampling at the irrigated playing field for 1,4-dioxane; ash delineation south of Neptune Drive (Site 9); groundwater sampling around Building 201 for diesel range organics (DRO) and VOCs; and pore water sampling along the northern side of the upper impoundment pond, also for VOCs and DRO.

At Building 201, the borings went about four feet into the water table and no evidence of petroleum was found in the soil around Building 201. Groundwater samples were collected and submitted for laboratory analysis. Laboratory results are expected within 2 to 3 weeks.

The irrigation field included four direct push locations. These borings were done because treated water from the GWETS was previously used for irrigation before 1,4-dioxane was known to be present.

Around Site 9, ten borings were included in the work scope to the north and south of Neptune Drive at the southern end of the current removal action excavation. Some ash was found in the middle of the investigation area, in the 18-20' interval. The ash was intermixed with fill. To the east and west, ash was no deeper than 3-4 feet, and no ash was observed beyond that. The direct push work has shown the extent of ash continues south of Neptune Drive. The field work for this work plan was completed on Tuesday, June 10, 2008.

Ed Benedikt asked what the solution is to address the ash under the road. Todd said that the Navy does not know yet. The Navy wants to wait until the northern area is investigated and then review the data collected from both areas (northern and southern areas) this winter.

### Naval Exchange (NEX) Update

The Navy met with the Navy's new Remedial Action Contract (RAC) contractor (AGVIQ/CH2M Hill) in May to discuss future clean-up work in the NEX area. A cost proposal is due to the Navy in July 2008 and the Navy plans to award this contract in August 2008 for the clean-up of the NEX. A draft remedial action work plan will be prepared this fall which will detail the clean-up approach for the NEX. The Navy anticipates implementing the remedial action work plan during the Summer of 2009.

Carolyn Lepage asked what the clean-up standards will be in the NEX area. Todd said that there will be discussions on that topic this winter with the Maine DEP. The clean-up work will include some additional soil borings in the area before excavation begins to confirm the extent of contamination. This new data along with the historical data will be used by the Navy to propose new clean-up numbers for the NEX site.

### Historical Radiological Assessment

The Navy's Radiological Affairs Support Office (RASO) is currently working on a Historical Radiological Assessment (HRA) to document the radiological history of the base. RASO is a branch

ECC

of the Navy dedicated to radiological issues. A contract will be awarded in September of this year, and the work is expected to be completed within 18 months. RASO has determined that Brunswick was one of the bases that should be included in this assessment program. The HRA will help to determine what radiological-related activities occurred at NAS Brunswick. This work includes researching historical archives both locally and on a national level and the assessment will include a detailed site walk and interviews with people knowledgeable about radiological operations at the base.

The HRA will identify potential, likely or known sources of radiological material, and will designate areas as potentially impacted or non-impacted.

Suzanne Johnson asked if this was a base wide survey. Paul indicated that it was. Tom Fusco asked if the weapons area would be excluded. Paul was not sure, but he said that the intent is to survey the entire base. Suzanne Johnson asked if clean-up of radiological contamination was limited to excavation. Paul was not able to comment, as RASO are the experts. He said that RASO representatives would attend future RAB meetings for future discussion.

BRAC Environmental Tracking System (BETS)

Paul discussed a new tracking system for non-CERCLA issues. In 2007, "CERFA clean" and Environmental Condition of Property (ECP) reports were prepared to compile available information to support the reuse of the base. Some of the issues that have been identified in the ECP, and will be identified in the future, will require follow-up work such as research, interviews, site walks and sampling.

As the base goes through the closure process, more issues will likely be identified. To track these issues, the Navy is developing a web-based tool to track the resolution of these issues. There will be a demonstration of the new system to US EPA and Maine DEP very soon.

The database will be GIS-based and associated with parcels for transfer. Paul asked that everyone review the flow chart, and respond to him with comments. BETS is currently under development right now and is subject to revision as required to meet the needs of the BRAC Stakeholders.

Risk Assessment Overview

Dave Barclift (Risk Assessor with Naval Facilities Engineering Command, Atlantic Division) gave a presentation of the risk assessment process. Risk assessment will be a significant component of the base closure process. It is a scientific process to evaluate the likelihood of adverse effects from exposure to chemicals. Risk assessment is one of the key components for environmental decision making, and is required by federal law and policy. It serves as a primary tool to establish action or no action.

Suzanne Johnson asked what "site specific" means on the base. Dave said that the base is viewed as many individual sites, and that current and future uses need to be considered at each one.

The risk assessment process evaluates human health and ecological receptors. Both have similar components:

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- Data evaluation and reductions
- Exposure assessment (several steps resulting in exposure quantification) and toxicity assessment
- Risk characterization
- Uncertainty analysis

The weapons area was mentioned as an example of how current use will be very different from future use. In this area, current use is highly restricted, so there is little exposure. Future use will need to consider whatever uses the redevelopment plan dictates.

Ed Benedikt asked how the risk assessment process considers wildlife. Dave answered that wildlife is considered under the ecological-risk process.

The Conceptual Site Model is a component of the risk assessment process. It helps to show how a chemical was released and how receptors could be exposed.

Ed Benedikt asked about the Record of Decisions (RODs) that were previously established, which were based on risk and will this risk assessment approach change the ROD process. Dave said that risk assessment is used to support site closure primarily related to soil. For groundwater, there are established standards such as MCLs that may apply. Mike Daly said that risk assessments have already been done for many of the sites within the base. The five year reviews also examine the risk assessment process to make sure that past assumptions are still valid. In some areas, risk assessment has not been done yet (i.e., munitions areas).

Tom Fusco stated that he is skeptical about risk assessments, based on EPA's comments. He asked about exposure of children vs. adults and whether the most sensitive receptors are considered. Dave said that the process evaluates the most sensitive level when residential or non-restricted uses are proposed. When human health is evaluated, residential future use will be evaluated and child receptors will be considered.

The risk assessment for soil also looks at the depth of contamination. When soil is not near the surface (example of 10 feet down), the construction worker would potentially be the most exposed.

Toxicity assessment is also part of the risk assessment process. It includes a literature search to find toxicity information for each chemical. Safety factors are applied, since there are no toxicity studies done on humans.

Suzanne Johnson asked if the state's numbers are different than EPA's. Dave said that most state standards are based on EPA toxicity information, although some formulas are different resulting in different standards. The toxicity information is the same, but the exposure assumptions may vary.

Ed Benedikt disagreed with this statement, as he believes the toxicity numbers from the state of Maine are different. Dave explained that standards and toxicity are two different things. He also explained that these standards relate to soil clean-up levels, not MEGs for groundwater.

Tom Fusco asked if synergistic effects from multiple chemicals are considered. Dave said that compounding effects are not part of this step, but are considered in future steps of the risk assessment.

The assumption is that health effects are additive, not multiplied. The uncertainty analysis is where additional effects that are uncertain can be evaluated.

The risk assessment process allows regulators and other stakeholders to put risk into context, and helps to identify the need for collecting more information. Risk assessment is typically done in the RI phase, but can occur at any stage including during clean-up. It is an integral part of the Superfund process.

### Emerging Contaminants at NAS Brunswick

Paul Burgio discussed 1,4-dioxane, and other emerging contaminants. Paul Yaroshak, a senior civilian with the Department of Defense (DOD) is the Deputy Director for Emerging Contaminants and has offered to visit Brunswick and address the RAB and stakeholders on 16 or 17 July 2008. This is an important topic to understand since it will help to define sampling parameters in the future.

### Site 7 Remedial Investigation

Elevated metals have been detected in groundwater, and the source of the metals may be in the soil. Site 7 was previously an acid disposal area, and a soil removal program was accomplished several years ago. A direct push program is planned to collect new soil data for metals to see if additional removal is warranted. The source area of this site is very small. TtNUS is preparing the direct push work plan. The Navy is hoping to do the work this fall.

### Site 2 Supplemental Site Investigation Update

Todd gave a presentation of Site 2, which is a former landfill that has a ROD, at which the Navy has been monitoring groundwater at this site since 2001. The landfill area slopes down to Mere Brook where there are groundwater seeps, and elevated levels of arsenic have been detected. There have been several meetings to discuss the elevated arsenic and the need to investigate the area to the north. The Navy wishes to implement a manageable level of work this year to assess the area to the north. The Navy has begun working on the five year review for Site 2 to evaluate if the previous remedy is protective. A new work plan will be issued in about a month. The Navy is not sure yet on the exact approach, but some work is hoped to be completed this fall.

Ed Benedikt asked what the remedy is under the ROD for Site 2. Todd said that a soil cover was placed over the former landfill, and that groundwater is monitored under the LTM program. The elevated arsenic in seeps is prompting further investigation work.

Carol Warren asked if the results of a previous technical meeting (Data Quality Objectives-DQO), which suggested a more thorough look at Site 2 and the area to the north, are being disregarded. Todd said that the Navy's current approach is to investigate the source of elevated metals such as arsenic, in the Area north of Site 2 but not in the Site 2 Landfill itself. Claudia Sait pointed out that the arsenic hits are upgradient of Site 2 (the area covered under the ROD). This is the reason for looking north of Site 2. This new investigation will be a very focused effort.

Mike Daly suggested a review of the DQO notes to see what assessment needs were determined. The Navy completed this type of review and has tasked their contractor with a focused sampling effort.

Carol stated that the community has been asking for dioxin testing for a long time. Todd said that the Navy has budgeted for some dioxin sampling for this field season.

Ed Benedikt asked if this was considered a high priority site. Vicky Boundy thought this was a lower priority area in terms of the redevelopment.

Ted Wolf asked about overall funding and how unforeseen conditions are handled. Todd said that the Navy needs to review each case to see how much is involved and what the priority is. One of the projects over budget is Site 9, and the Navy is dealing with that. Now that the base is BRAC, many of the decisions are based on redevelopment. This will be a driver to evaluate resources and identify priorities. High priorities are also given to high exposure/risk situations.

#### **4. QUESTIONS AND FUTURE RAB AGENDA TOPICS**

Mrs. Fitzgerald stated that her backyard is near Site 7, and asked if her children should be restricted from playing in the area. A number of the technical staff provided input to answer this question. The Navy and US EPA will look at this in more detail and consult with the risk assessment people. Based on some available GIS information, it appears that Site 7 is approximately 550 hundred feet away from Mrs. Fitzgerald's house.

Todd said that the next newsletter should be out by October's meeting (October 15, 2008).

Claudia Sait asked about the status of the background study. Todd said that the background work plan was under internal review by the Navy, but it needs more work. The Navy is scheduling a meeting with the contractor to discuss the revisions to the work plan.

Paul Burgio stated that the Environmental Impact Statement (EIS) contract has been awarded, and that there will be meetings next week. This will be an 18 month process, with a great deal of public participation.

Captain Fitzgerald closed the meeting by saying he is committed to maintaining an open forum on the clean-up process.

The 11 June 2008 RAB Meeting adjourned at 9:45 PM.



**Sign In Sheet**  
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**Restoration Advisory Board (RAB) Meeting**  
**Parkwood Inn**  
**Brunswick, Maine**  
**Wednesday, June 11, 2008**  
**7:00PM - 9:00PM**

Name	Affiliation	Contact Information
✓ MARY McMAHON	NASB BRAC	MARIA-B. MCMAHON@NAVY.MIL
✓ Ted Wolfe	MEDEP	theodore.e.wolfe@maine.gov
✓ AL EASTERDAY	ECC	aeasterday@ecc.net
✓ David W. Chipman	Town of Harpswell rep to RAB	dwchipman@suscom-maine <sup>ne</sup>
- John James	NASB	john.james@navy.mil
- Robert Gersh	MACTEC	RLGersh@mactec.com
- MIVÉ FAGAN	NASB	michael.fagan1@navy.mil
- Mike Daly	USEPA	daly.mike@epa.gov
- Victoria Bandy	MRRA	victoriab@mrra.us
- Claudia Sait	MEDEP	claudia.b.sait@maine.gov
- Suzanne Johnson	BACSE	smalljohn@suscom-maine.net
- Ed Benedik	BACSE	rbenedik@guie.net
- LISA JOY	NASB	lisa.joy@navy.mil
- Carolyn Lepage	BACSE Tech. Advisor	calepage@roadrunner.org
Will & Ann Fitzgerald	NASB	PELICANCO@HOTMAIL.COM
Carol Warren	BACSE	carol@wacuba.com
Tom Fusco	BACSE	tfusco2@verizon.net
PAUL BURGIO	NAVY	
TODD BOBER	NAVY	
DAVE BARCLIFT	NAVFAC	





# Restoration Advisory Board Meeting *11 June 2008*

Parkwood Inn, Brunswick, Maine

7:00 PM

(Printed on 100% post-consumer recycled paper)



# Meeting Agenda

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**7:15 – 7:45 RAB Administrative Items**

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**7:45 – 8:45 Technical Presentations**

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- Site 2 Investigation

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

# *List of Acronyms*

- AR Administration Record
- AOC Area of Concern
- BACSE Brunswick Area Citizens for a Safe Environment
- BEC BRAC Environmental Coordinator
- BETS BRAC Environmental Tracking System
- BRAC Base Realignment and Closure
- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
- DEP Department of Environmental Protection
- DON Department of Navy
- DRO Diesel Range Organic
- ECP Environmental Condition of Property
- EP Eastern Plume
- EOD Explosives Ordnance Disposal
- ESS Explosives Safety Submittal
- GIS Geographical Information System
- GWETS Groundwater Extraction Treatment System
- FOSL Finding of Suitability to Lease
- IRP Installation Restoration Program
- HASP Health and Safety Plan
- HRA Historical Radiological Assessment
- LTMP Long-Term Monitoring Program
- MEDEP<sup>3</sup> Maine Department of Environmental Protection

## *List of Acronyms (con't)*

- MMRP Military Munitions Response Program
- MC Munitions Constituents
- MEC Munitions and Explosives of Concern
- MRP Munitions Response Program
- NASB Naval Air Station Brunswick
- NCP National Contingency Plan
- NEX Naval Exchange
- NOSSA Naval Ordnance Safety and Security Activity
- NFA No Further Action
- MARSSIM Multi-Agency Radiation Survey Site Investigation Manual
- MRRA Midcoast Regional Redevelopment Authority
- QAPP Quality Assurance Project Plan
- RAB Restoration Advisory Board
- RAC Remedial Action Contractor
- RCRA Resource Conservation and Recovery Act
- RI Remedial Investigation
- ROD Record of Decision
- RASO Radiological Affairs Support Office
- SI Site Inspection
- TBD To be determined
- USEPA United States Environmental Protection Agency
- VOC Volatile Organic Compound

# *Introductions*

- *Navy BRAC Program Management Office Northeast Representatives:*
  - Mr. Todd Bober, P.E., Remedial Project Manager
  - Mr. Paul Burgio, BRAC Environmental Coordinator
- *Naval Air Station Brunswick Representatives:*
  - Captain William Fitzgerald, Commanding Officer
  - Mr. John James, Public Affairs Officer
  - Ms. Lisa Joy, Environmental Director
  - Mr. Michael Fagan, Installation Restoration Program

## *Introductions (cont.)*

- *U.S. Environmental Protection Agency Representative:*
  - 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
- *Midcoast Regional Redevelopment Authority (MRRA):*
  - Ms. Victoria Boundy, Planning and Environmental Manager

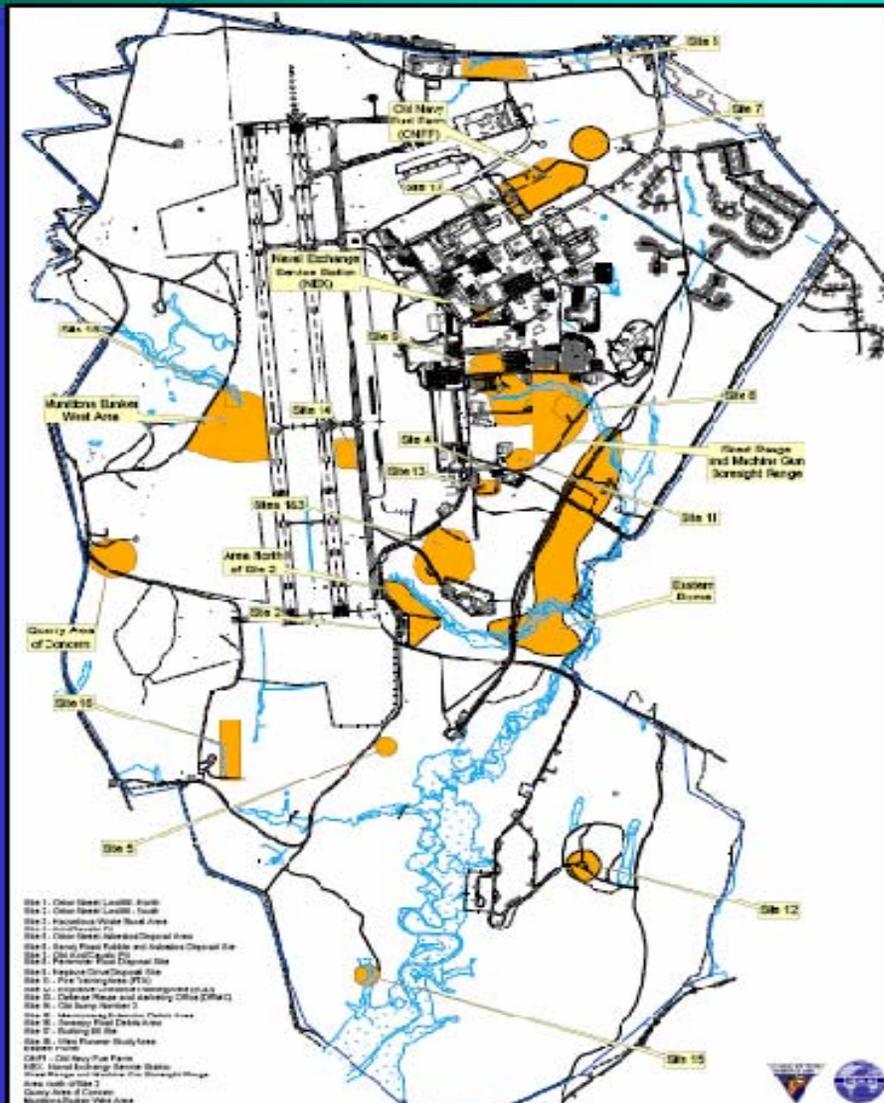
# *Meeting Agenda*

- *Welcome!*
- **Introductions**
- **RAB Administrative Items (Navy)**
  - Old Business
  - New Business
  - Discussion of RAB Charter
- **Technical Presentations (Navy/TtNUS/ECC)**
  - Proposed Schedule for Navy Projects
  - Offsite Well Sampling for Eastern Plume
  - Extraction Well EW-5B Update
  - 1,4-Dioxane and Bedrock Evaluation Status
  - Site 17 Update
  - Site 9 Removal Action Update

## *Meeting Agenda (con't)*

- **Technical Presentations (Navy/TtNUS/ECC)**
  - Site 9 Southern Area Direct-Push/Geoprobe Investigation
  - Navy Exchange Petroleum Remediation Update
  - Future Radiological Evaluation
  - BRAC Environmental Tracking Systems (BETS)
  - Risk Assessment Overview
  - Emerging Contaminants (EC) at NAS Brunswick
  - Site 7 Remedial Investigation
  - Site 2 Investigation
- **Questions and Future RAB Agenda Topics (Navy)**

## NAS Brunswick Basewide Map – Environmental Restoration Areas



- Site 1 - Orion Street Landfill - North
- Site 2 - Orion Street Landfill - South
- Site 3 - Hazardous Waste Burial Area
- Site 4 - Acid/Caustic Pit
- Site 5 - Orion Street Asbestos Disposal Area
- Site 6 - Sandy Road Rubble and Asbestos Disposal Site
- Site 7 - Old Acid/Caustic Pit
- Site 8 - Perimeter Road Disposal Site
- Site 9 - Neptune Drive Disposal Site
- Site 11 - Fire Training Area (FTA)
- Site 12 - Explosive Ordnance Training Area (EOD)
- Site 13 - Defense Reuse and Marketing Office (DRMO)
- Site 14 - Old Dump Number 3
- Site 15 - Merriconeag Extension Debris Area
- Site 16 - Swampy Road Debris Area
- Site 17 - Building 95 Site
- Site 18 - West Runway Study Area Eastern Plume
- ONFF - Old Navy Fuel Farm
- NEX - Naval Exchange Service Station
- Skeet Range and Machine Gun Boresight Range
- Area North of Site 2
- Quarry Area of Concern
- Munitions Bunker West Area

# *Proposed Schedule for NAS Brunswick*

## Proposed Short-Term Schedule for NAS Brunswick:

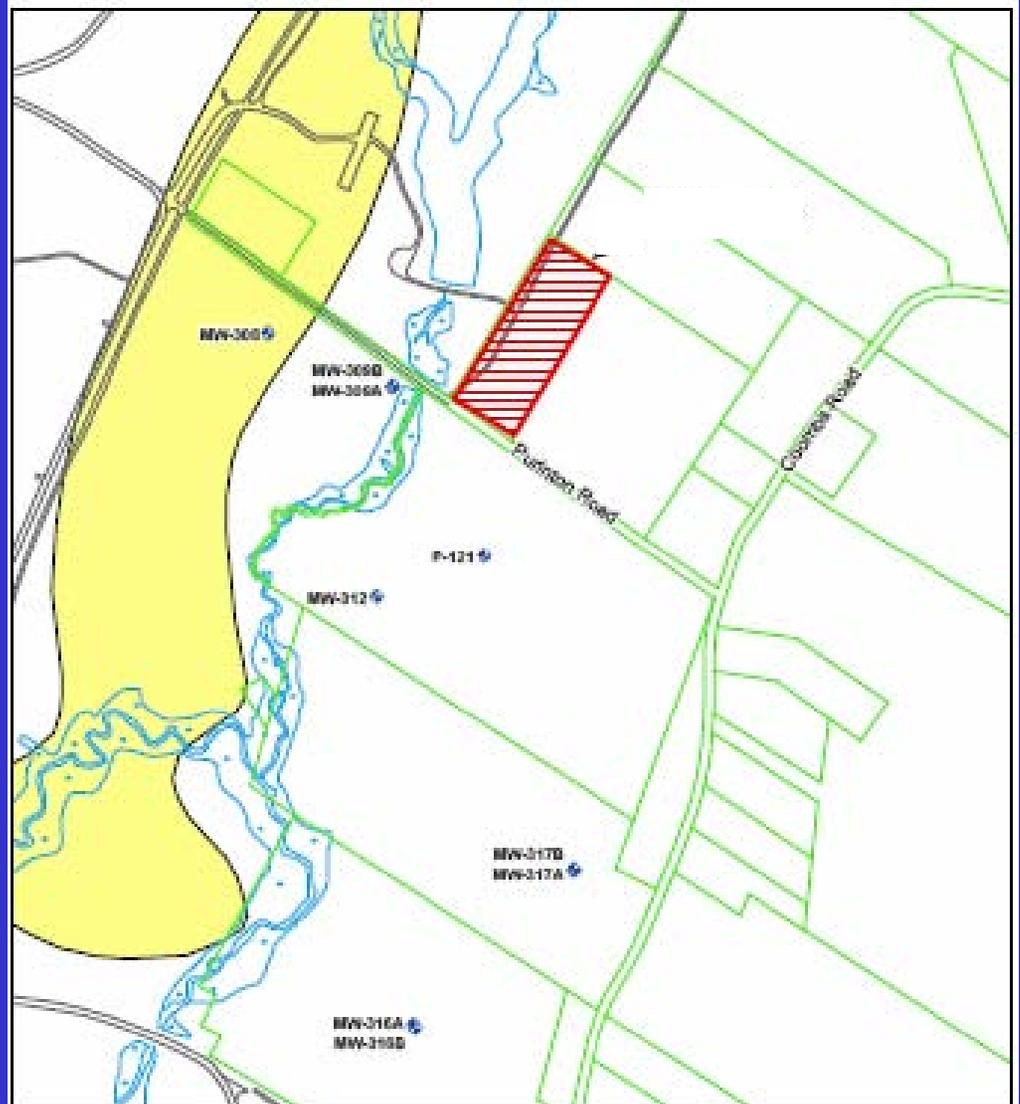
<u>Action</u>	<u>Start Date</u>
• Site 2 Work Plan	TBD
• Site 2 - 5 Year Review	May 08
• Site 2 Fieldwork	TBD
• NEX Cost Proposal	May 08
• NEX Work Plan	Sept 08
• NEX Remediation	Summer 09
• Site 7 Work Plan	Summer 08
• Site 7 Fieldwork	Spring 09
• Site 9 Excavation & Backfill Completion	Summer 08
• Site 9 Southern Area Field Work	May 08

## ***Proposed Schedule for NAS Brunswick (con't)***

<b><u>Action</u></b>	<b><u>Start Date</u></b>
• Site 9 Northern Area Geo-probe Fieldwork	Fall 08
• Radiological Survey	Fall 08
• Extraction Well Pump Test	Fall 08
• Site 17 RI Fieldwork	Fall 08
• Site 17 Soil Removal	Fall 08
• Eastern Plume 1,4 -Dioxane Investigation	Fall 08
• New Eastern Plume Bedrock Wells	Fall 08
• Old Navy Fuel Farm Well Repairs	Fall 08
• Various Monitoring	In Progress

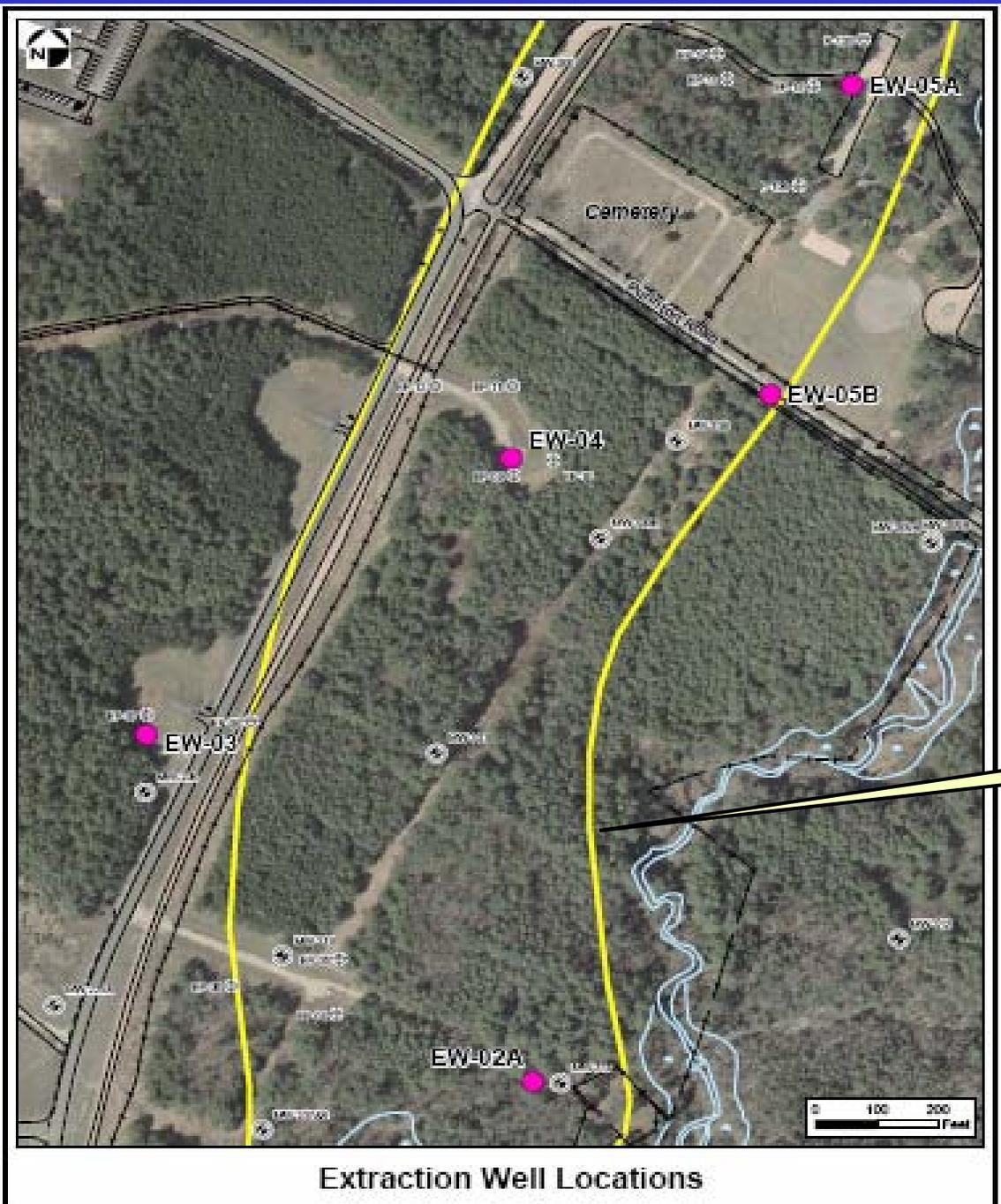
# *Off-site Well Sampling for Eastern Plume*

**Off-site Residential  
Well Sampling Fall  
2008 and Spring 2009  
Monitoring Events**



## ***Extraction Well EW-5B Update***

- **Installed extraction well in June 2007.**
- **Developed and sampled new extraction well as part of Long-Term Monitoring Program.**
- **Vault construction and piping installation along with electrical connections and pump testing plan are planned to be completed during the field season 2008.**



*Eastern Plume  
Current  
Extraction  
Well Network*

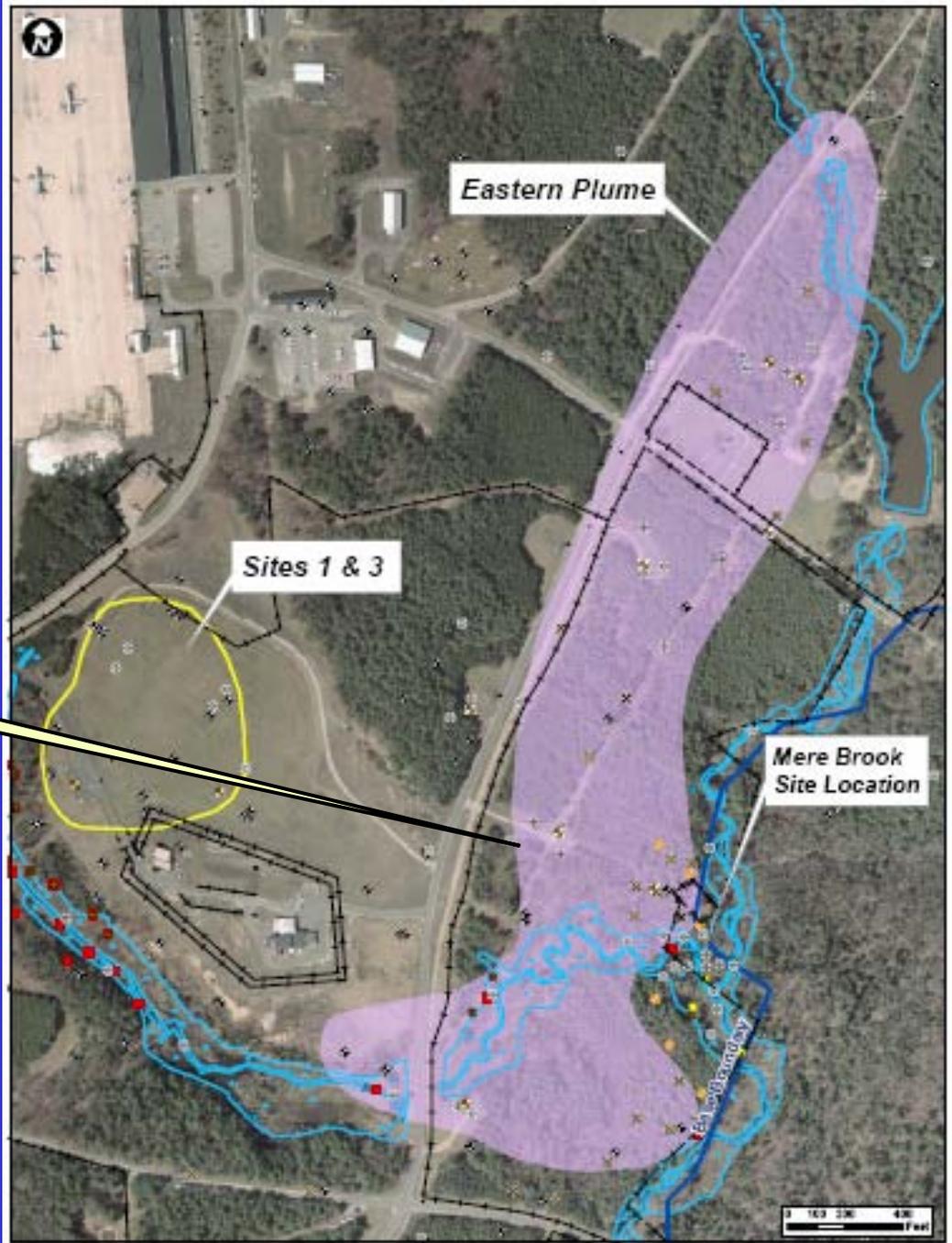
Eastern Plume

## ***Supplemental Investigation for 1,4 Dioxane-Bedrock Evaluation at Eastern Plume – Key Points***

- Technical Meeting was held in Feb 2008 to determine additional work to be conducted.
- Several discussions with stakeholders to refine scope of project and evaluate best way to “fast-track” program.
- Navy, Maine DEP, and USEPA are developing innovative approaches to accomplish field work this season and expedite the program.
- Program will consist of installing new bedrock wells, porewater sampling in Merriconeag Stream, lithology profiling, direct-push groundwater sampling, and installation of permanent monitoring wells.
- Revised Draft Work Plan planned for August 2008.

# *Eastern Plume Area*

Eastern Plume



## ***Supplemental Investigation for 1,4 Dioxane-Bedrock Evaluation at Eastern Plume – Status Update***

- Project funding in June 2008.
- USEPA and Maine DEP conducted Merriconeag Stream porewater assessment in August 2005.
- Navy will use results to locate and collect direct-push groundwater samples to assess nature and extent of 1,4-dioxane (Fall 2008).
- Plan to install permanent monitoring wells based on direct-push results (Spring 2009).
- Plan to install bedrock wells in Fall 2008.

# *Site 17 Update*

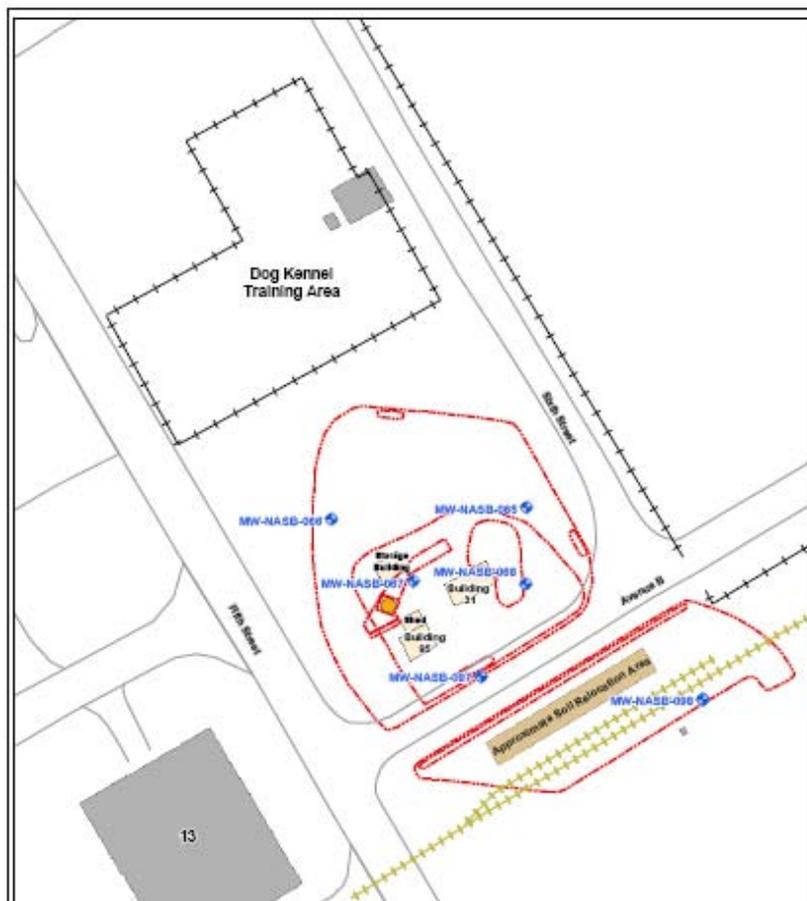
## *Remedial Investigation Work Plan*

- **Work plan for Site 17 Remedial Investigation (RI) currently being finalized.**
- **Fieldwork for the RI planned for Fall 2008.**

## *Remedial Action Work Plan*

- **A Remedial Action Work Plan is being developed for the Site 17 soil removal project which is planned to be submitted for regulator review in June 2008.**
- **Soil removal project involves locating, excavating, and removing about 30 cubic yards of pesticide impacted soils reportedly located on southern side of Avenue B.**

# Site 17 Proposed Soil Removal



<b>Object No.</b>	H8473-02-D-0819		
<b>Description</b>	Site 17 Site Map		
<b>Coordinate System</b>	NAD 1983, UTM, Zone 18 N		
<b>Source</b>	Naval Base Boundary provided by Navy		
<b>Date</b>	6/1/2009	<b>Rev.</b>	1
<b>DR</b>	C. O'Brien	<b>Date</b>	6/1/09
<b>DR</b>	J. DeBruin	<b>Date</b>	
<b>DR</b>		<b>Date</b>	
<b>DR</b>		<b>Date</b>	
<b>DR</b>		<b>Date</b>	

**Area of Detail**

**Legend**

- Monitoring Well
- Former Location of Septic Tank
- Fence
- Rail Road Track (Abandoned)
- Excavation Boundary (Approximate)
- Former Building
- Building

**Figure 2**

**Site 17 Site Plan**

Naval Air Station  
Brunswick, Maine

## ***Site 9 Removal Action Update***

- **Approximately 41,354 tons of “special waste” has been excavated and sent for off-site disposal.**
- **Excavation is nearly complete.**
- **Navy plans to backfill excavation and restore the site by Labor Day 2008.**
- **Current and future direct-push work is necessary to define remaining cleanup areas north and south of Site 9 excavation.**

# Site 9 Removal Action Update



# *Site 9 Removal Action Update*



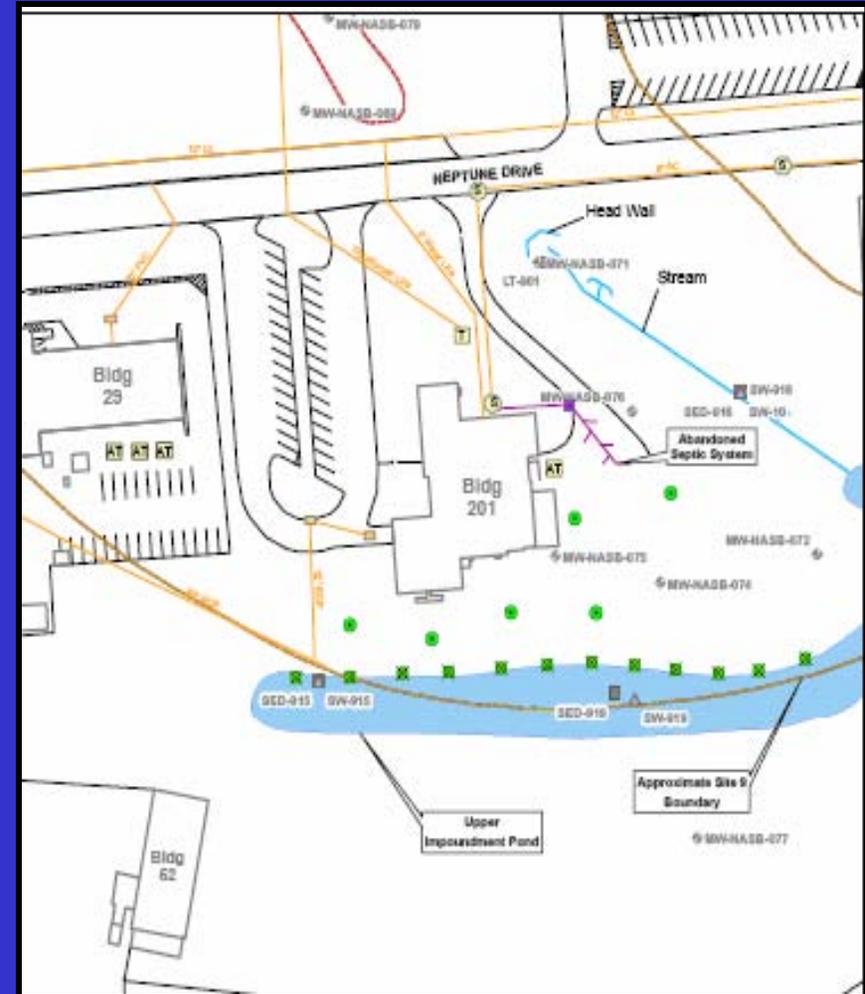
## *Site 9 Removal Action Update*



## *Site 9 Southern Area Direct-Push Investigation*

- *Investigation Activities which began on 27 May 2008 included:*
  - Groundwater sampling at Irrigated Playing Field for 1,4-Dioxane.
  - Ash delineation at Site 9 (South of Neptune Drive) – direct-push sampling to delineate ash.
  - Building 201 – Groundwater sampling for Diesel Range Organics (DROs) and Volatile Organic Compounds (VOCs).
  - Impoundment Pond- porewater sampling for VOCs and DROs.

# Site 9 Southern Area Direct-Push Investigation



# Site 9 Southern Area Direct-Push Investigation

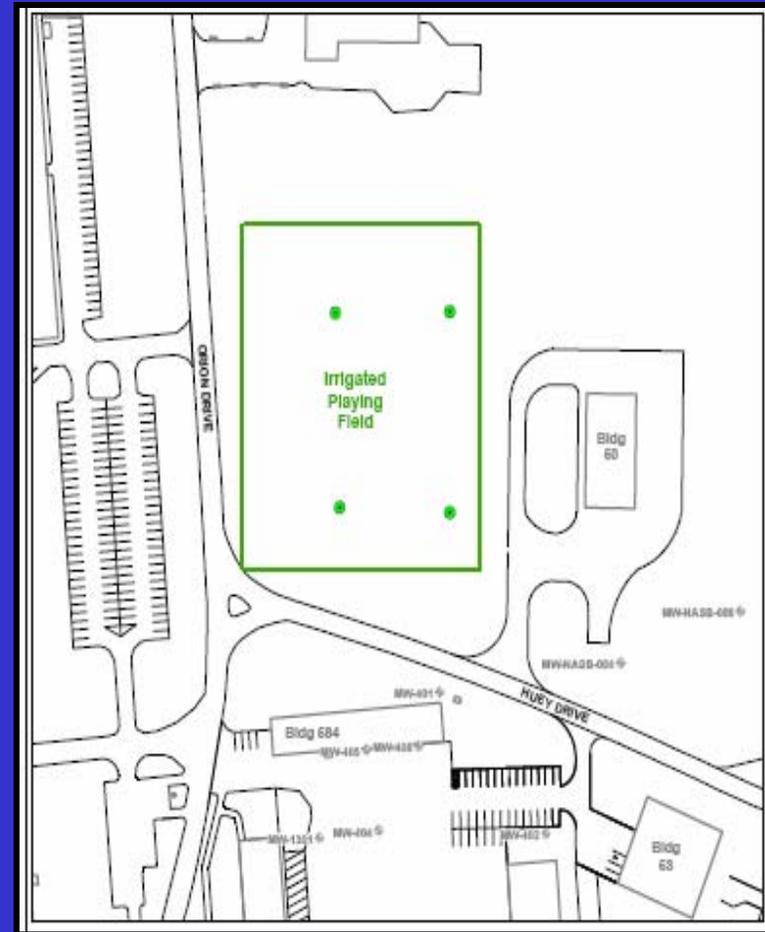


Photo 2 and Figure 2 – Site Plan and Sampling Locations at Irrigation Playing Field Area



# *Site 9 Southern Area Direct-Push Investigation*



Photos of ongoing investigation showing the direct-push drill rig

## ***Naval Exchange (NEX) Service Station Update***

- **Navy met with new Remedial Action Contractor (RAC) – AGVIO/CH2M Hill on 28 May 2008 to perform site visit in preparation for technical and cost proposal for NEX cleanup.**
- **Plan to award contract in August 2008 and initiate development of approach and draft work plan in Fall 2008.**
- **Plan to initiate cleanup in Summer 2009.**

# *Naval Exchange (NEX) Service Station Update*



**Photos of NEX Service Station**

# *Historical Radiological Assessment*

NAVSEA DET Radiological Affairs Support Office (RASO)

## *WHAT IS A HRA?*

- *Historical Radiological Assessment (HRA) is:*
  - Navy (NAVSEA) documentation of radiological history of site.
  - Tool to determine future radiological actions at the site.
  - Prepared pursuant to the Department of Navy (DON) Environmental Restoration Program Manual.
  - Based on Multi-Agency Radiation Survey Site Investigation Manual (MARSSIM) guidance for a Historical Site Assessment.

# *Historical Radiological Assessment - Approach*

- *Preparation of the HRA will include:*
  - Research of historical archives.
  - NAS Brunswick archives and records RASO Yorktown, VA, and various Navy archives.
  - National archives and records.

## *Historical Radiological Assessment – Approach (con't)*

- *Preparation of the HRA will include:*
  - Site walkovers.
  - Interviews of personnel with knowledge of radiological operations at NAS Brunswick.
  - Draft HRA will undergo regulatory review and comment followed by public comment period.

# *Historical Radiological Assessment Purpose*

- *The HRA will serve to:*
- Identify potential, likely, or known sources of radioactive material and radioactive contamination based on existing or derived information.
- Designate sites as radiologically “impacted” or “non-impacted.”
- Identify radionuclides of concern for each radiologically “impacted” site.
- Identify potentially impacted media and migration pathways for each “impacted” site.
- Make recommendations for future radiological actions.

## *Purposed Schedule*

- **Contract Award - Planned for September 2008.**
- **Work Complete - March 2010 (approximately 18 months after contract award).**

# ***BRAC Environmental Tracking System (BETS) Overview***

- **2007 CERFA “Clean” and Environmental Condition of Property (ECP) Reports – comprehensive documents that compiled existing information to support the “Findings of Suitability” that Navy must make in order to lease or transfer property under BRAC.**
- **Combined, the reports included the CERCLA and petroleum sites and the rest of the base.**
- **Some issues identified in these reports will require follow up such as further research, additional interviews, site walks, and sampling.**

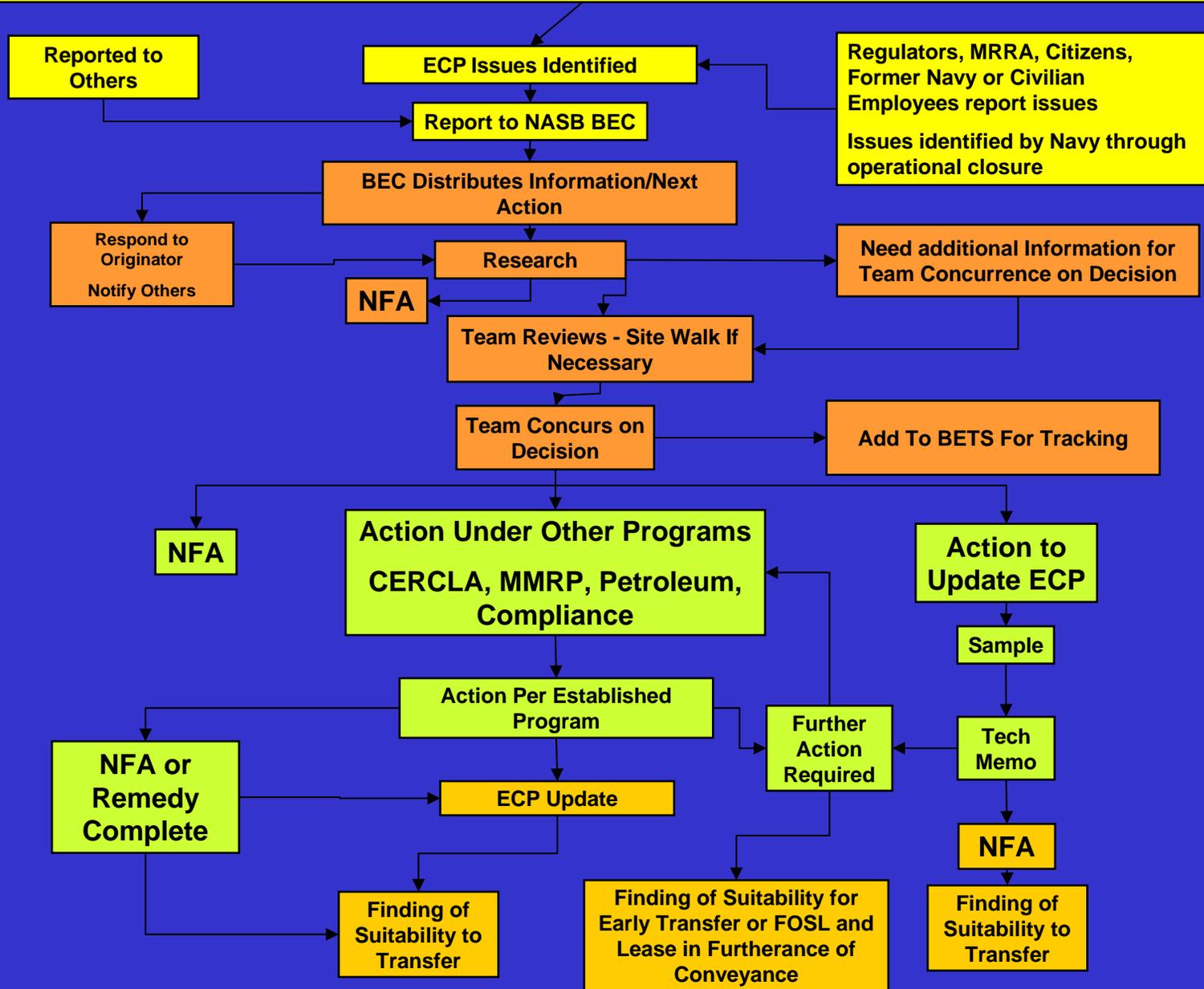
## ***BRAC Environmental Tracking System (BETS) Overview***

- **As NAS Brunswick progresses through base closure and operational shutdown, more issues will be identified, which will require resolution.**
- **The Navy has developed a web-based tool to track and document resolution of issues.**
- **Formerly known as "ITS," BETS is a Navy tool to ensure no issues " slip through the cracks."**
- **Tracks and documents the life of Environmental Condition of Property (ECP) follow-up issues and newly identified issues from identification through research, discussion, field activities, and decisions to No Further Action or action under another program.**

# ***BRAC Environmental Tracking System (BETS) Overview***

- **Geographical Information System (GIS) component associates each issue with a given location or area to provide environmental due diligence information when parcels are identified for transfer.**
- **BETS Application developed and being modified.**
- **Demonstration for stakeholders planned.**
- **Part of overall process to ensure environmental issues that could affect suitability to lease, or transfer, the property are identified and addressed.**

# ENVIRONMENTAL CONDITION OF PROPERTY UPDATE PROCESS



# *Risk Assessment Overview*

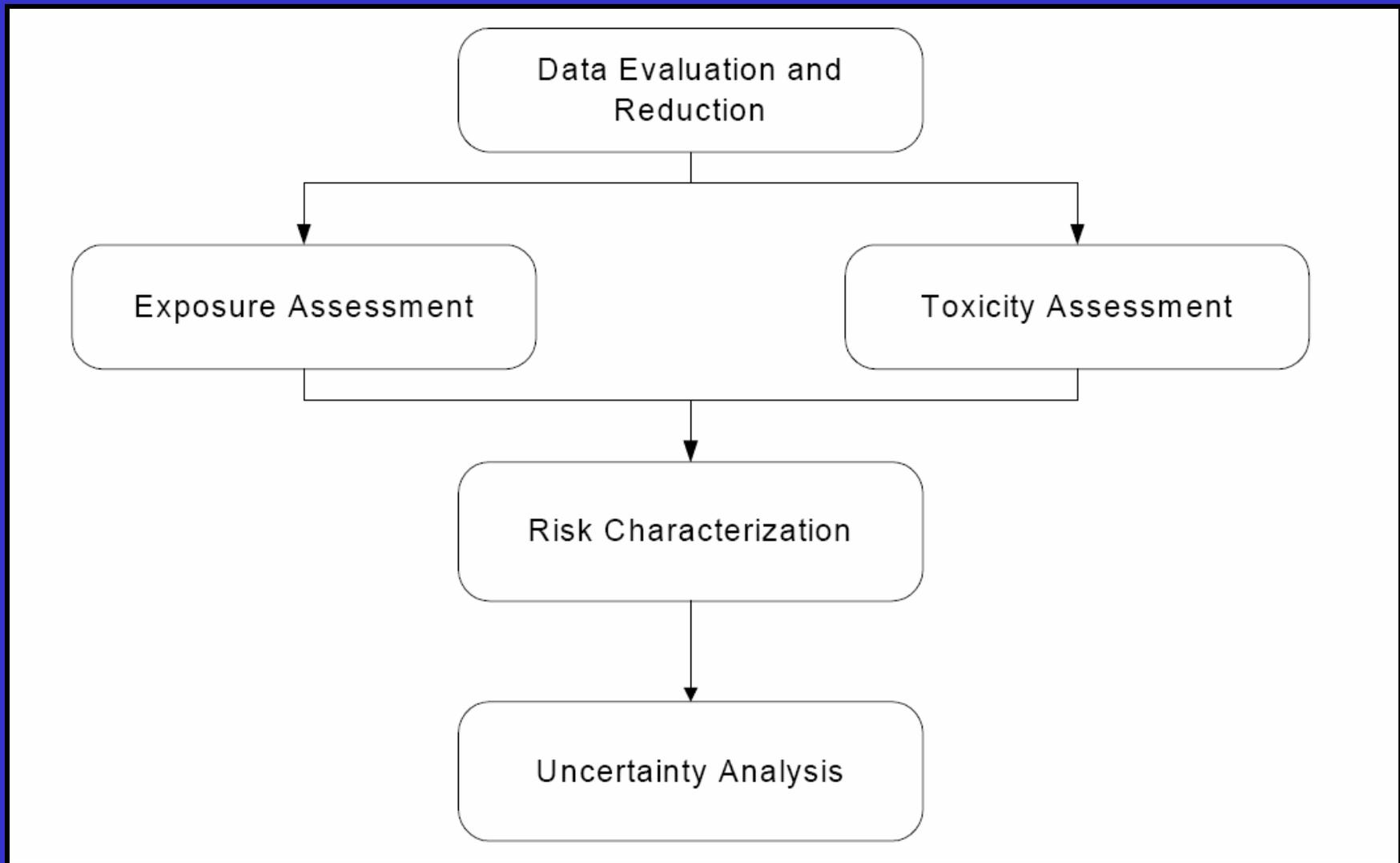
## *What is a Risk Assessment:*

- Risk assessment is a scientific process that evaluates the likelihood that adverse effects may occur or are occurring as a result of exposure to chemicals.

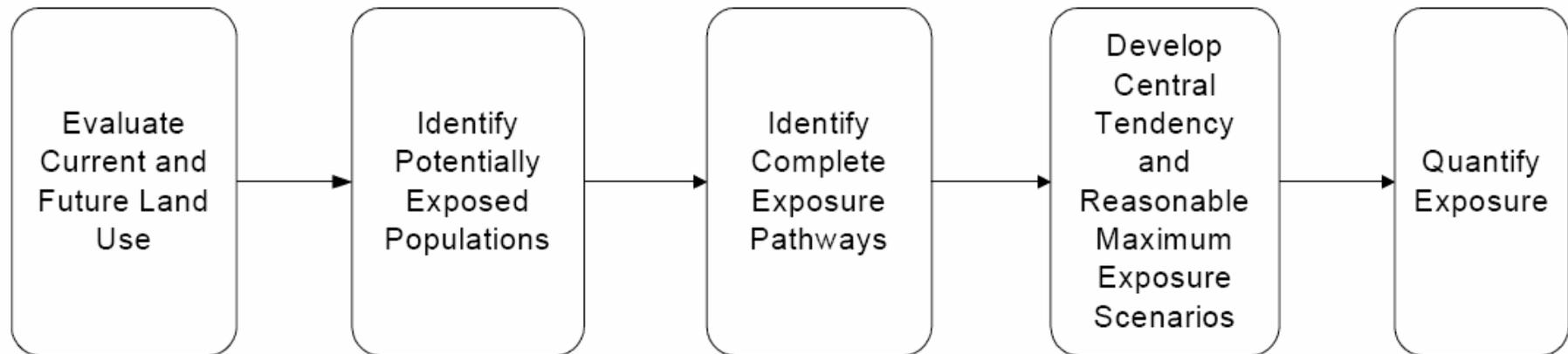
# *Why Use Risk Assessment?*

- *Required by Federal Law and Policy:*
  - Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
  - National Contingency Plan (NCP)
  - Resource Conservation and Recovery Act (RCRA)
  - Navy Policy for Conducting Human Health Risk Assessments under the Environmental Restoration Program
  - Navy Policy for Conducting Ecological Risk Assessments
- Serves as a primary tool for establishing a scientific basis for action or no action.
- Provides a more objective and quantitative methodology for comparing potential remedial options.
- Focuses resources and efforts on real problems vs. perceived.

# *Components of Risk Assessment*



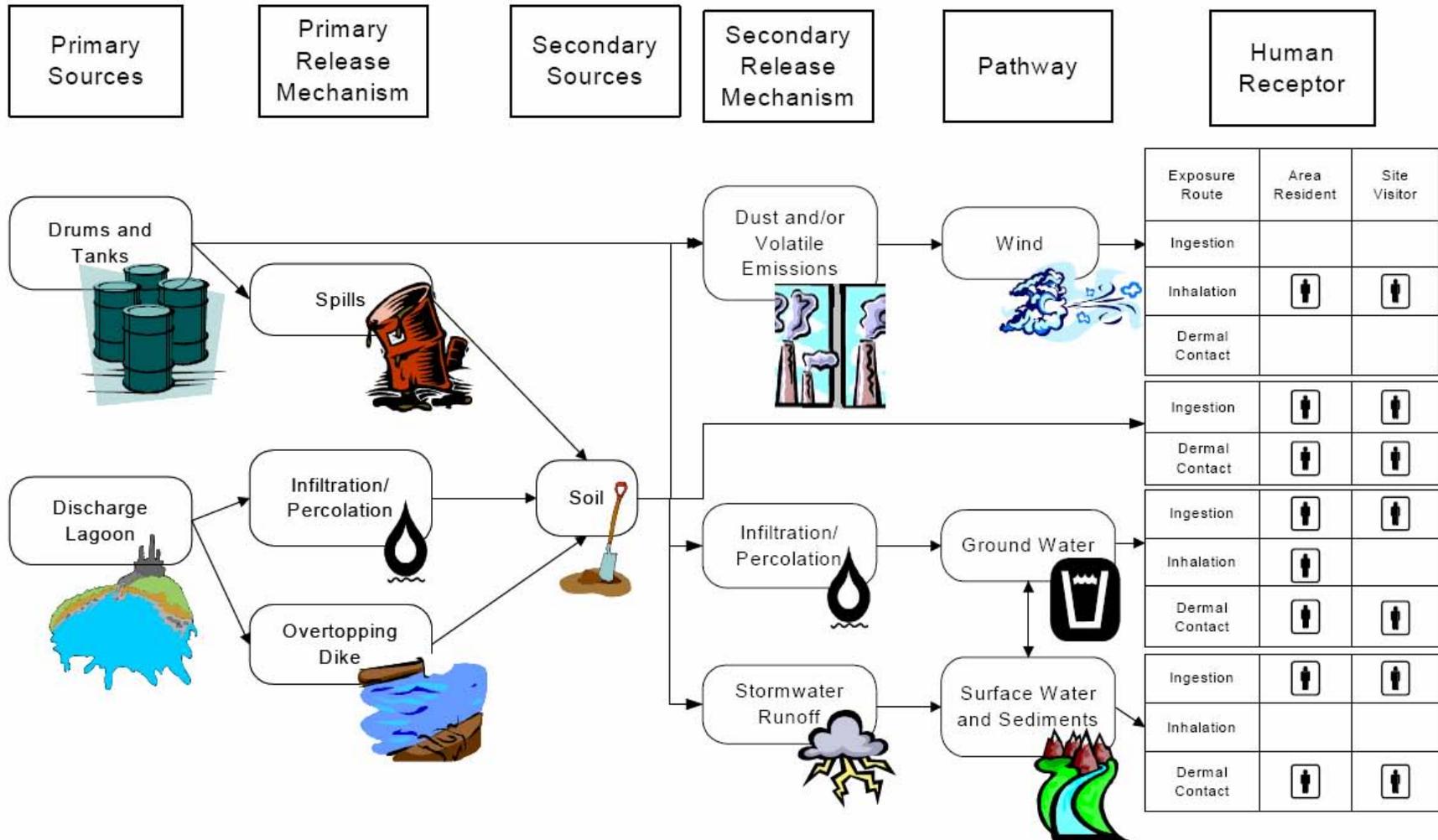
# Exposure Assessment Process



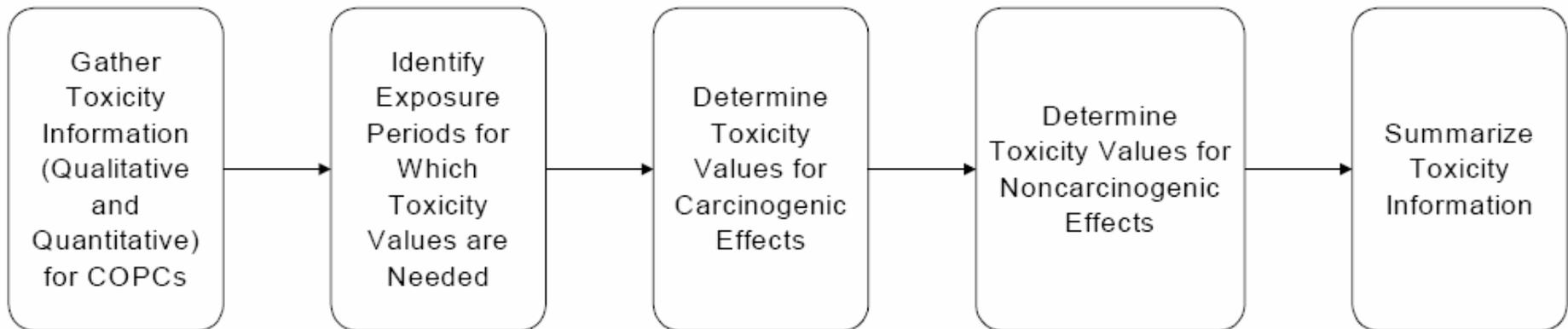
The exposure assessment process results in an Exposure Point Concentration (EPC), which is a dose. *Example equation below.*

$$\text{Daily Intake } \left( \frac{\text{mg}}{\text{kg-day}} \right) = \frac{C_s \times FC \times IR \times ED \times EF \times CF}{BW \times AT}$$

# Exposure Assessment- Conceptual Site Model



# *Toxicity Assessment Process*



**The end result of the toxicity assessment process is a list of applicable toxicity information that can be combined with exposure assessment information to calculate risks. *Example calculation is below:***

$$RfD \text{ (average daily human dose)} = \frac{NOAEL_{\text{Experimental Dose}}}{\text{Safety Factors} + \text{Modifying Factor}}$$

# *Risk Characterization*

- The key components of the risk characterization process include the following:
  - quantify risks from individual chemicals
  - quantify risks from multiple chemicals
  - combine risks across exposure pathways

Risk Characterization is the summation of the exposure assessment and toxicity assessment information and results in quantitative expression of risk. *Example equations are below:*

$$RISK = LADI \times SF$$

$$HQ = \frac{ADI}{RfD}$$

# *Uncertainty Analysis*

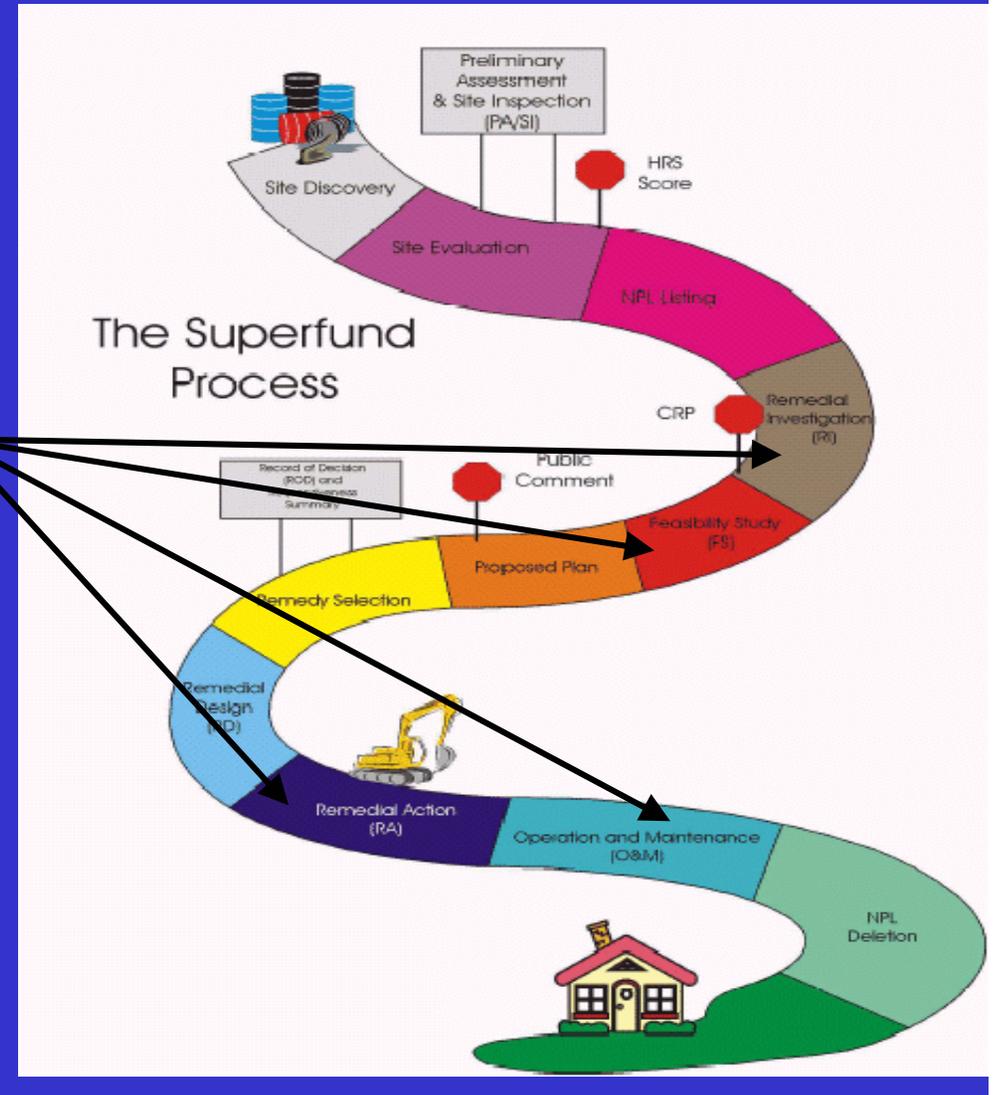
- Evaluates all of the uncertainties that are associated with each step of the process:
  - extrapolating from animal studies to human toxicity
  - using dose response information from homogeneous animal populations or healthy human populations to predict effects that may occur in the general population, including sensitive subpopulations
  - high-to-low-dose extrapolation methods used to develop toxicity values
  - lack of chemical-specific dermal toxicity values
  - synergistic or antagonistic effects associated with multiple chemical exposure.

## *Uncertainty Analysis (con't)*

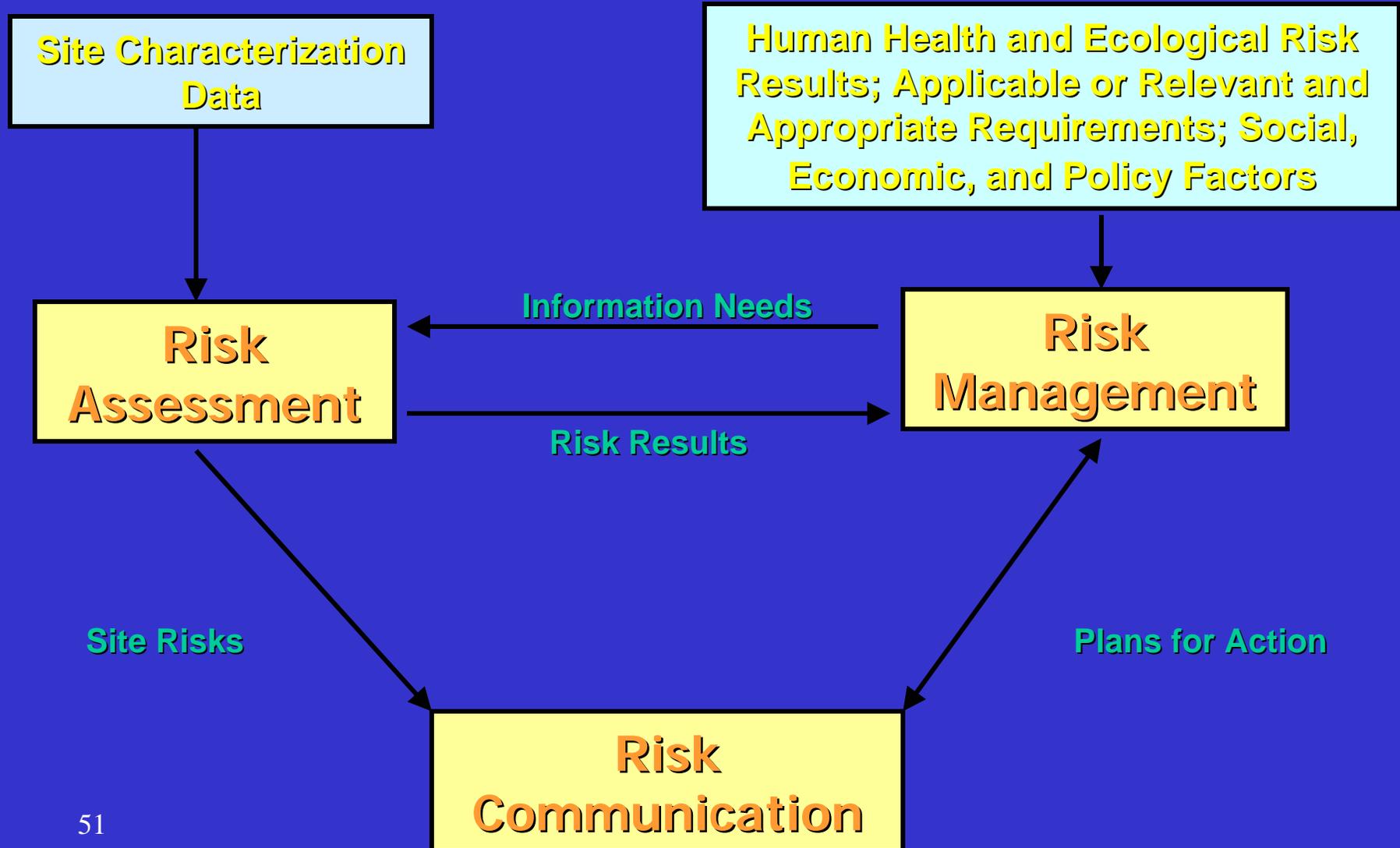
- **Allows regulators, stakeholders, and risk managers to put the risks in proper context.**
- **Assists risk managers in evaluating the need for collecting additional information.**
- **In order for a risk manager or stakeholder to effectively make risk management decisions, the magnitude of the uncertainties in the evaluation must be understood.**

# Risk Assessment - Superfund Process

Risk assessment typically occurs during the Remedial Investigation (RI), but can also occur at other points during the Superfund process.



# *That's Not the End of the Story...*



# *Questions?*

## *Point of Contact:*

**David Barclift**

**Naval Facilities Engineering Command, Atlantic Division**

**c/o BRAC PMO Northeast**

**4911 South Broad Street**

**Philadelphia, PA 19112-1303**

**david.barclift@navy.mil**

**215-897-4913**

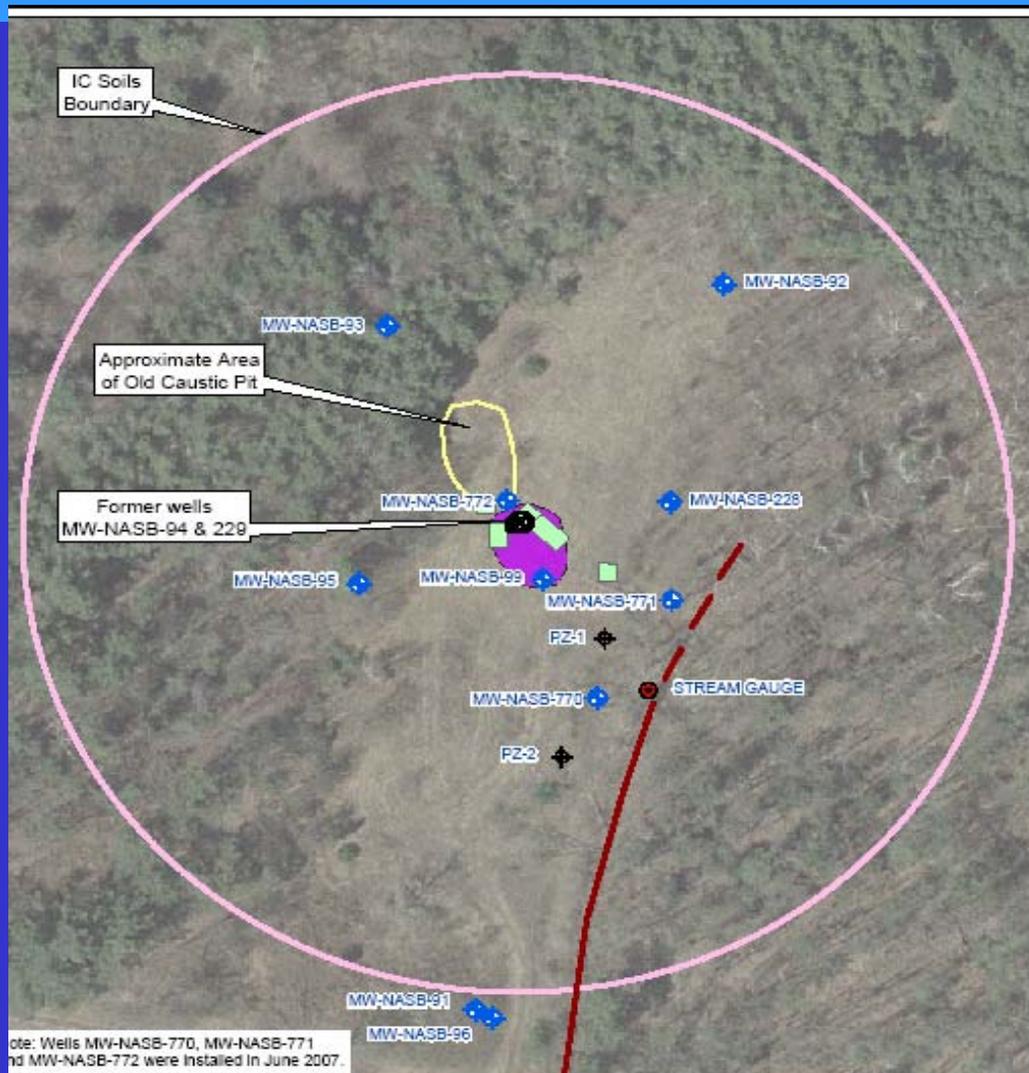
## *Emerging Contaminants at NAS Brunswick*

- Mr. Paul Yaroschak, Deputy Director for Emerging Contaminants (EC), Office of the Secretary of Defense, would like to provide the EC presentation to the Brunswick Stakeholders.
- Mr. Yaroschak previously served in the Office of the Assistant Secretary of the Navy (Installations & Environment) and has a long history of working with RABs on cleanup issues.
- Meeting with Brunswick Stakeholders tentatively scheduled for 16-17 July 2008.

## ***Site 7 Remedial Investigation Update***

- **Elevated metals (e.g., cadmium) previously detected in groundwater monitoring wells.**
- **Source of elevated metals may still be present in soils.**
- **Direct-push program planned to determine if any additional removals required.**

# Site 7 Investigation Update



## *Site 7 Investigation Update (con't)*

- Navy is currently preparing a Work Plan to perform a field investigation.
- Draft Work Plan is due out in Summer 2008.
- Fieldwork tentatively scheduled for Fall 2008.

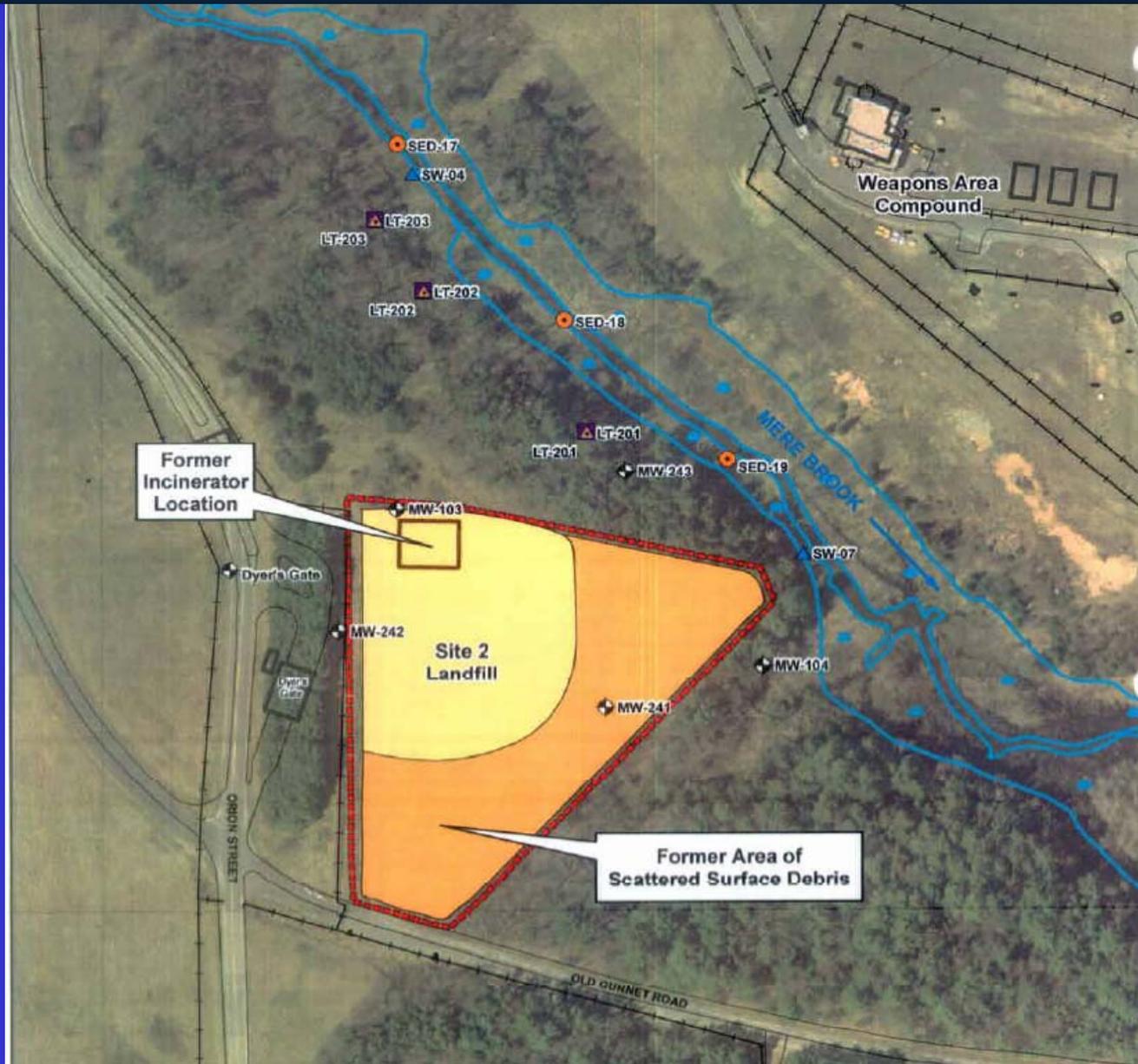
## ***Site 2 -Supplemental Site Investigation Update***

- **Site 2 is a landfill that has been closed and has a signed Record of Decision (ROD).**
- **Elevated levels of metals have been detected in nearby seeps during monitoring.**
- **These seeps discharge to Mere Brook.**
- **The source of these elevated metals is unknown and may be coming from the landfill or possibly the area north of the landfill.**

## *Site 2 –and the Area North of Site 2*



# Site 2 –and the Area North of Site 2



## *Site 2 -Supplemental Site Investigation Update*

- The Navy currently preparing a document similar to a Five-Year Review to assist in determining if the present remedy at Site 2 is protective.
- Based on the results of this assessment, further investigation may be required at Site 2. This work is anticipated for Fall 2008.
- Long-Term Monitoring will be ongoing at Site 2.

## *Questions?*

- **Future Restoration Advisory Board Agenda Topics**
- **2008 NAS Brunswick Restoration Advisory Board Meetings**

*(\*Note - RAB Meetings are on Wednesday evenings)*

- **8 October 2008**
- **3 December 2008**