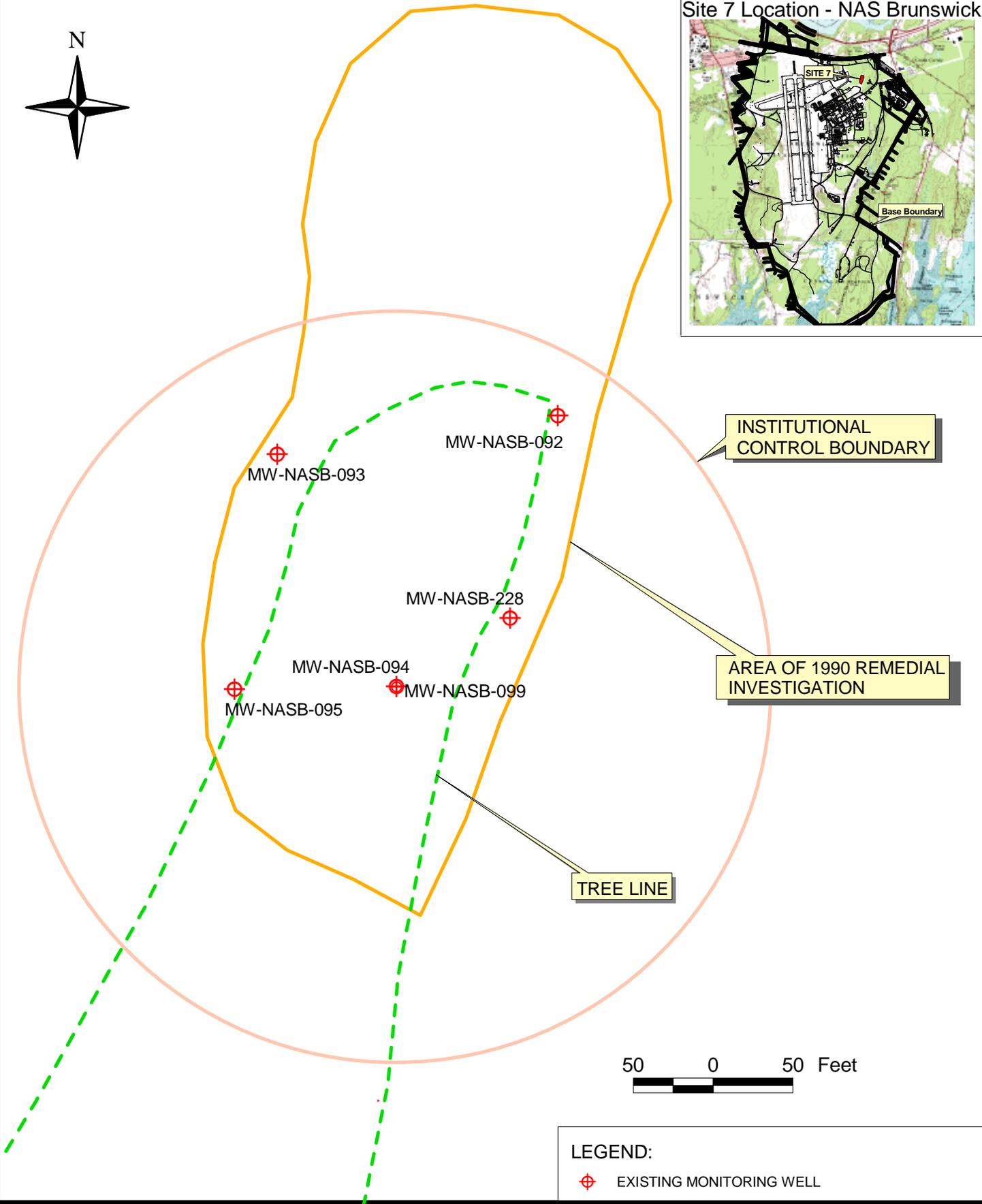
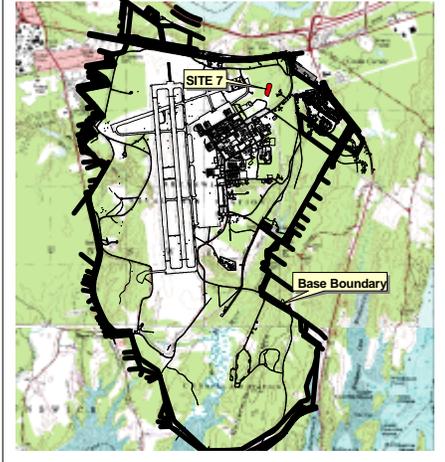


Site 7 Location - NAS Brunswick



LEGEND:
 EXISTING MONITORING WELL

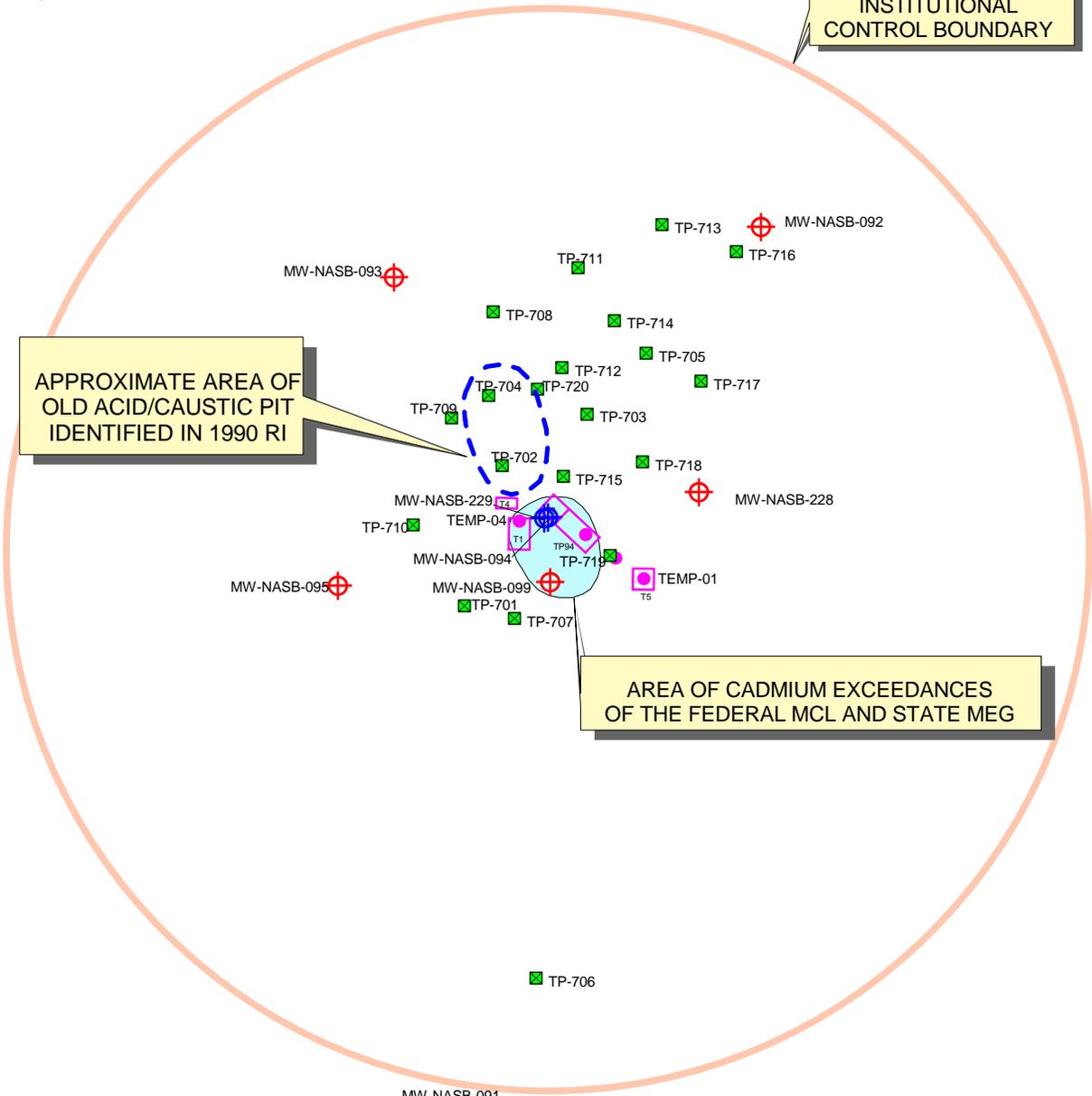
EA ENGINEERING, SCIENCE, AND TECHNOLOGY		SITE 7 NAVAL AIR STATION BRUNSWICK, MAINE				FIGURE 2-2 SITE PLAN	
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
ACE	JG	JG	ACE	AS SHOWN	SEPT 2002	29600.82	I:\NASB_GIS \NAVY.APR



INSTITUTIONAL CONTROL BOUNDARY

APPROXIMATE AREA OF OLD ACID/CAUSTIC PIT IDENTIFIED IN 1990 RI

AREA OF CADMIUM EXCEEDANCES OF THE FEDERAL MCL AND STATE MEG



LEGEND:

- EXISTING MONITORING WELL
- FORMER MONITORING WELL
- FORMER TEMPORARY SAMPLING POINT (JUNE 2001)
- TEST PIT EXCAVATION (JULY 2001)
- REMEDIAL INVESTIGATION TEST PIT (1988-1989)



EA ENGINEERING,
SCIENCE, AND
TECHNOLOGY

SITE 7
NAVAL AIR STATION
BRUNSWICK, MAINE

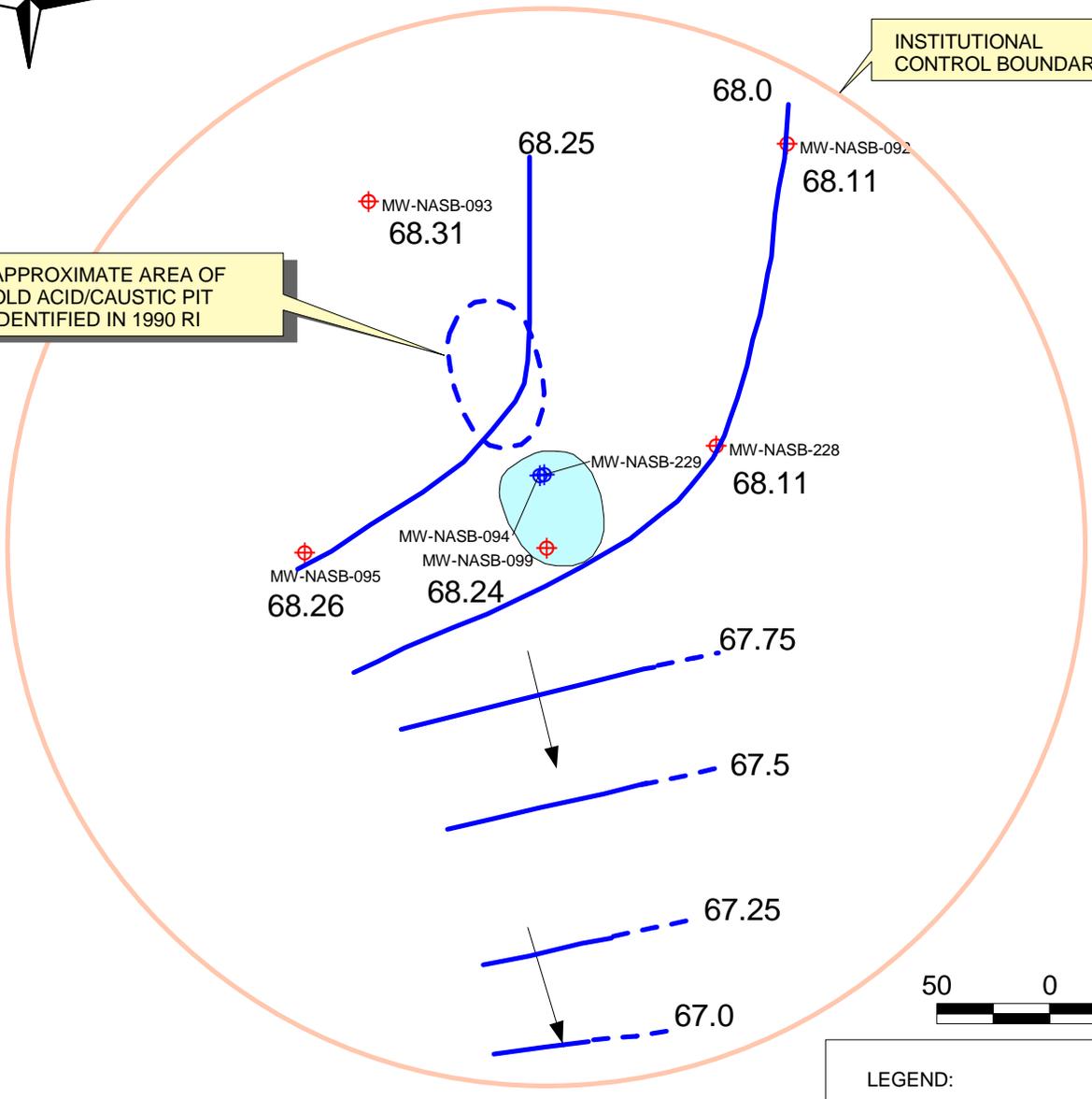
FIGURE 2-3
DETAILED SITE PLAN

PROJECT MGR ACE	DESIGNED BY JG	DRAWN BY JG	CHECKED BY ACE	SCALE AS SHOWN	DATE SEPT 2002	PROJECT No 29600.82	FILE No I:\NASB_GIS \NAVY.APR
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APPROXIMATE AREA OF OLD ACID/CAUSTIC PIT IDENTIFIED IN 1990 RI

INSTITUTIONAL CONTROL BOUNDARY



NOTES:
 ND = No Data. Monitoring well MN-NASB-094 and MW-NASB-229 were destroyed during the July 2001 test pit excavation activities.
 (a) = Monitoring well MW-NASB-091 is screened in the clay unit underlying the shallow sand, and is not considered to be representative of shallow ground-water conditions. The ground-water elevation for MW-NASB-091 was not used to interpret shallow ground-water contours, and is provided for information purposes only.

LEGEND:

- EXISTING MONITORING WELL
66.63 Elevations
- FORMER MONITORING WELL
66.63 Elevations
- INTERPRETED DIRECTION OF GROUNDWATER FLOW
- INTERPRETED POTENTIOMETRIC SURFACE
(Dashed Where Inferred)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY		SITE 7 NAVAL AIR STATION BRUNSWICK, MAINE			FIGURE 2-4 GROUNDWATER CONTOUR MAP		
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT No	FILE No
ACE	JG	JG	ACE	AS SHOWN	SEPT 2002	29600.82	I:\NASB_GIS NAVY.APR

TABLE 2-1 SUMMARY OF SITE INVESTIGATIONS AT SITE 7

Remedial Investigation (1988-1989)	Supplemental Remedial Investigation (1990)	Ground-Water Monitoring (1998)	Ground-Water Monitoring (1999)	Supplemental Remedial Investigation (2000-2001)	Ground-Water Monitoring (2001)	Conclusions
SOIL						
VOCs –Low concentrations, toluene identified as a common laboratory artifact Pesticides –Low concentrations, DDD, DDE, and DDT consistent with basewide levels PAH –Moderate concentrations, consistent with urban soils Inorganics –Low concentrations, consistent with background levels	VOCs –None detected Pesticides –Low concentrations near Building 201 PAH –Low concentrations, near Building 201 Inorganics –Low concentrations, consistent with background levels	Not sampled	Not sampled	VOCs –Not sampled based on previous sampling data Inorganics –Low concentrations, consistent with background levels	Not sampled	Not recommended for further remediation or monitoring activities based on past sample data
GROUND WATER						
VOCs – Inorganics –Low concentrations, consistent with site background levels	VOCs –Not sampled Inorganics –Low concentrations, consistent with site background levels	VOCs –Not sampled Inorganics –Low to moderate concentrations, cadmium and manganese in excess of MEG and MCL	VOCs –Not sampled Inorganics –Low to moderate concentrations, cadmium and manganese in excess of MEG and MCL	VOCs –Not sampled Inorganics –Low to moderate concentrations, cadmium in excess of MEG and MCL	VOCs –Not sampled Inorganics –Low to moderate concentrations, cadmium in excess of MEG and MCL	Cadmium concentrations are generally stabilizing. There is no evidence of contaminant migration offsite.
SURFACE WATER						
Not sampled – no surface water pathway is located on or near to Site 7.	Not sampled	Not sampled	Not sampled	Not sampled	Not sampled	
STREAM SEDIMENT						
Not sampled – no streams are located on or near to Site 7.	Not sampled	Not sampled	Not sampled	Not sampled	Not sampled	
LEACHATE SEEP						
Not sampled – no leachate seeps have been observed at Site 7.	Not sampled	Not sampled	Not sampled	Not sampled	Not sampled	
NOTE: VOC = Volatile organic compounds. DDD = Dichlorodiphenyldichloroethane DDE = Dichlorodiphenyldichloroethylene. DDT = Dichlorodiphenyltrichloroethane. PAH = Polycyclic aromatic hydrocarbons. MEG = Maximum Exposure Guideline. MCL = Maximum Contaminant Level. Low concentrations = No evidence of release. Moderate Concentrations = Concentrations above state or federal criteria. Continued study warranted.						

TABLE 2-2 SUMMARY OF CONTAMINANTS OF CONCERN AND MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATIONS

Scenario Timeframe: Current Worst-Case Scenario						
Medium: Surface Soil						
Exposure Medium: Surface Soil						
Exposure Point	Contaminant of Concern	Concentration Detected (ppm)		Frequency of Detection	Exposure Point Concentration (ppm)	Statistical Measure
		Min	Max			
Surface soil	Total Carcinogen PAHs ^(a)	0.354	10.38	4/12 (b)	10.38	Max
Surface soil	Total Non-Carcinogen PAHs	0.474	1.67	4/12	1.67	Max
Surface soil	4,4-DDE	0.014	0.056	5/12	0.056	Max
Surface soil	4,4-DDD	0.067	0.024	4/12	0.024	Max
Surface soil	4,4-DDT	0.053	0.34	7/12	0.34	Max
Surface soil	Aroclor-1254	<0.026	0.31	2/12	0.31	Max
Surface soil	Arsenic	2.33	9.9	6/12	9.9	Max
Surface soil	Cadmium	0.85	8	2/12	8	Max
Surface soil	Lead	53.4	104.8	12/12	104.8	Max
Surface soil	Manganese	124.03	267	12/12	267	Max
Surface soil	Mercury	0.10	1	2/12	1	Max
Scenario Timeframe: Current Worst-Case Scenario						
Medium: Ground Water						
Exposure Medium: Ground Water						
Ground Water	Cadmium	0.00257	0.052	8/17	0.052	Max
Ground Water	Manganese	0.25	0.950	9/17	0.950	Max
<p>(a) Total carcinogenic PAHs include benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene. In the Human Health Risk Assessment conducted as part of the Site 7 Remedial Investigation, risk estimates were calculated for carcinogenic PAHs as a group, and will be referred to as such in subsequent tables.</p> <p>(b) Represents the average number of detections of the 7 carcinogenic PAH compounds.</p> <p>NOTE: Min = Minimum concentration (NOTE: In the 1990 Human Health Risk Assessment and the Technical Memorandum, the average concentration was used to estimate the most probable risk). Max = Maximum concentration used to generate worst-case scenario risk. PAH = Polycyclic aromatic hydrocarbon. NA = Not available.</p> <p>SOURCE: Remedial Investigation (E.C. Jordan Co. 1990); Summary Report of the Ground-Water and Soil Investigation (EA 2002a); Ground-Water Letter Report (EA 2002b), and Feasibility Study (E.C. Jordan Co. 1992).</p>						

TABLE 2-3 CANCER TOXICITY DATA SUMMARY

Contaminant of Concern	Oral Cancer Slope Factor	Absorption Efficiency (for Dermal)	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/Cancer Guideline Description	Source	
Ingestion – Dermal Contact							
Carcinogenic PAH	0.50	0.20	0.50	(mg/kg)/day	A	IRIS 1999	
Arsenic	0.25	0.10	0.25	(mg/kg)/day	A	IRIS 1999	
4,4-DDE	0.50	0.20	0.50	(mg/kg)/day	A	IRIS 1999	
4,4-DDD	0.50	0.20	0.50	(mg/kg)/day	A	IRIS 1999	
4,4-DDT	0.50	0.20	0.50	(mg/kg)/day	A	IRIS 1999	
Aroclor-1254	0.50	0.20	0.50	(mg/kg)/day	A	IRIS 1999	
Contaminant of Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source
Inhalation							
Not applicable at Site 7							
Contaminant of Concern	Cancer Slope or Conversion Factor	Exposure Route	Units	Weight of Evidence/Cancer Guideline Description	Source		
External (Radiation)^(a)							
Not applicable at Site 7							
(a) Only to be completed if there are radionuclide contaminants of concern.							
NOTE: PAH = Polycyclic aromatic hydrocarbons. IRIS = Integrated Risk Information System; EPA human data are available (1999).							
EPA Group: A = Human carcinogen.							
Source: Remedial Investigation (E.C. Jordan Co. 1990) and Feasibility Study (E.C. Jordan Co. 1992).							

TABLE 2-4 RISK CHARACTERIZATION SUMMARY – CARCINOGENS

Medium	Exposure Medium	Exposure Point	Contaminant of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Scenario Timeframe: Current							
Receptor Population: Resident							
Receptor Age: Child^(a)							
Surface	Surface	Soil Direct	Carcinogenic PAH	1.3×10^{-6}	NA	5.6×10^{-6}	6.9×10^{-6}
Soil	Soil	Contact					
Surface Soil Risk (Carcinogenic PAH) Total							6.9×10^{-6}
Scenario Timeframe: Current							
Receptor Population: Resident							
Receptor Age: Adult^(b)							
Ground	Ground	NA	NA	NA	NA	NA	NA
Water	Water						
Ground-Water Risk Total							NA
(a) Child: Most likely target age group.							
(b) Adult: Risks calculated for adults only.							
NOTE: PAH = Polycyclic aromatic hydrocarbons.							
NA = Route of exposure is not applicable to this medium.							
Source: Remedial Investigation (E.C. Jordan Co. 1990).							

TABLE 2-5 NON-CANCER TOXICITY DATA SUMMARY FOR GROUNDWATER

Contaminant of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorption Efficiency (for Dermal)	Adjusted RfD (for Dermal)	Adjusted Dermal RfD Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ
Ingestion – Dermal Contact										
Cadmium	Chronic	0.005	mg/kg/day	5%	0.0005	mg/kg/day	Kidneys	10	IRIS	1985
Manganese	Chronic	0.14	mg/kg/day	NA	NA	NA	Central nervous system	3	IRIS	1995

Contaminant of Concern	Chronic/ Subchronic	Value Inhalation RfC	Inhalation RfC Units	Adjusted Inhalation RfD	Adjusted Inhalation RfD Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfC:RfD: Target Organ	Dates
Inhalation									
Not applicable at Site 7									
NOTE: RfD = Reference dose. IRIS = Integrated Risk Information System. NA = Not an applicable route of exposure at Site 7. RfC = Reference concentration.									

TABLE 2-6 CAPITAL AND OPERATION AND MAINTENANCE COST ESTIMATES FOR SELECTED ALTERNATIVES

Item No.	Cost Categories and Items	Descriptions	Unit Cost	Alternative 1 No Action		Alternative 2 Institutional Controls and Long-Term Monitoring		Quantity	Total Cost
				Quantity	Total Cost	Quantity	Total Cost		
A. CAPITAL COSTS									
1	Land Use Restriction								
1.1	Site-specific use plan	Govern activities at site	\$500	0	\$0	1	\$500		\$0
1.2	Land use restriction	Declaration of environmental restriction to prevent groundwater and soil use	\$500	0	\$0	1	\$500		\$0
		<i>Subtotal</i>			\$0		\$1,000		\$0
1.3	Contingency		15%	0	\$0	Plus 15%	\$150		\$0
		Line item total			\$0		\$1,150		\$0
B. OPERATION AND MAINTENANCE (O&M) COSTS									
1	Land Use Restriction								
1.1	Institutional controls	Govern activities at site	\$500	0	\$0	1	\$500		\$0
		Annual O&M Costs			\$0		\$500		\$0
2	Bi-Annual Groundwater Monitoring								
2.1	Sample collection - labor and equipment costs	Sample 7 existing wells twice a year	\$385	0	\$0	14	\$5,390		\$0
2.2	Analytical costs	Analyses of samples for contaminants of concern							
2.2.1	Inorganic analysis	Semi-annual sampling	\$95	0	\$0	14	\$1,330		\$0
2.3	Reporting	Semi-annual report to regulators and Navy	\$3,500	0	\$0	2	\$7,000		\$0
2.4	Disposal	Gloves, tubing, PPE, etc.	\$200	0	\$0	2	\$400		\$0
2.5	Sampling preparation, mobilization, and demobilization	For each sampling event	\$1,000	0	\$0	2	\$2,000		\$0
2.6	System repair and replacement	Upkeep of monitoring wells and sampling equipment	10%	0	\$0	Plus 5%	\$806		\$0
		Annual O&M Costs			\$0		\$16,926		\$0
3	CERCLA Mandated Five-Year Review Meeting								
3.1	Meetings	Meet once every 5 years for 20 years	\$2,000	4	\$8,000	4	\$8,000		\$0
3.2	Travel	Travel to the meeting site	\$1,000	4	\$4,000	4	\$4,000		\$0
3.3	Reports	One report every 5 years	\$1,500	4	\$6,000	4	\$6,000		\$0
		Line Item Total			\$18,000		\$18,000		\$0
		Five-Year Review Costs			\$18,000		\$18,000		\$0
		Total Annual O&M Costs			\$18,000		\$35,426		\$0
C. COST SUMMARY									
	Capital Costs				\$0		\$1,150		\$0
	Present Worth of Annual Operation and Maintenance Costs ^(a)				\$18,000		\$366,520		\$0
	20-Year Present Worth Costs				\$18,000		\$367,670		\$0
(a) Capital costs are not discounted because the construction work will be performed in the first year. O&M costs are reported as present worth estimates given a 5 percent rate and 2 percent inflation rate for a 20-year period.									

REFERENCES

- EA Engineering, Science, and Technology. 2002a. Summary Report of the Ground-Water and Soil Investigations at Site 7, Naval Air Station, Brunswick, Maine. March.
- EA. 2002b. Letter Report. Site 7 – Ground-Water Sampling Results, Naval Air Station, Brunswick, Maine. March.
- EA. 2002c. Proposed Remedial Action Plan for Site 7, Naval Air Station, Brunswick, Maine. March.
- E.C. Jordan Company. 1985. Pollution Abatement Confirmation Study NAS Brunswick, Portland, Maine. July.
- E.C. Jordan Company. 1988. Community Relations Plan for Naval Air Station, Brunswick National Priority List Sites. September.
- E.C. Jordan Company. 1990. Draft Final Remedial Investigation Report. Volume 1, Volume 2 (Appendixes A through J), Volume 3 (Appendixes K through P), and Volume 4 (Appendix Q – Risk Assessment), NAS Brunswick. Portland, Maine. August.
- E.C. Jordan Company. 1991. Draft Final Supplemental Investigation Report NAS Brunswick, Portland, Maine. August.
- E.C. Jordan Company. 1992. Feasibility Study Sites 2, 4, 7, 9, 11, and 13 NAS Brunswick. Portland, Maine. March.
- Foster Wheeler Environmental Corporation. 2002. Draft Completion Report for Stockpiled Soil Removal, Site 7. July.
- Maine Department of Human Services (MEDHS). 2000. Revised Maximum Exposure Guidelines for Chemical Contaminants in Drinking Water. January.
- Maine Department of Environmental Protection (MEDEP). 1997. Draft Implementation of Remedial Action Guidelines. May.
- R.F. Weston Inc. 1983. Initial Assessment Study of Naval Air Station, Brunswick Maine. Westchester, Pennsylvania. June.
- U.S. Environmental Protection Agency (U.S. EPA). 1999. Integrated Risk Information System On-Line Database Maintained in Toxicology Data Network by the National Library of Medicine Bethesda, Maryland. EPA Environmental Criteria and Assessment Office, Cincinnati.

Appendix A

Responsiveness Summary and Written Comment Letters on the Proposed Remedial Action Plan and Record of Decision and Proposed Remedial Action Plan Meeting Minutes

A.1 Proposed Remedial Action Plan

- C. Lepage (BASCE) – 30 April 2002
- C. Sait (MEDEP) – 25 February 2002
- C. Sait (MEDEP) – 28 March 2002
- M. Barry (U.S. EPA) – 28 February 2002
- M. Barry (U.S. EPA) – 27 March 2002

A.2 Record of Decision

- C. Lepage (BASCE)
- D. Messier (MEDEP)
- M. Barry (U.S. EPA)

A.3 Meeting Minutes from 9 April 2002 Proposed Remedial Action Plan Public Meeting

Appendix A.1

Proposed Remedial Action Plan

- C. Lepage (BASCE) – 30 April 2002
- C. Sait (MEDEP) – 25 February 2002
- C. Sait (MEDEP) – 28 March 2002
- M. Barry (U.S. EPA) – 28 February 2002
- M. Barry (U.S. EPA) – 27 March 2002

**RESPONSE TO COMMENTS FROM THE
BRUNSWICK AREA CITIZENS FOR A SAFE ENVIRONMENT
ON THE PROPOSED REMEDIAL ACTION PLAN FOR SITE 7
MARCH 2002
NAVAL AIR STATION, BRUNSWICK, MAINE**

COMMENTOR: Carolyn A. Lepage, C.G.

DATED: 30 April 2002

The following comments on the March 2002 *Proposed Remedial Action Plan for Site 7* (PRAP) are submitted on behalf of the Brunswick Area Citizens for a Safe Environment (BACSE).

1. ***General Comment***—BACSE supports the Navy's proposed remedial action of groundwater monitoring and institutional controls for Site 7. BACSE looks forward to the results of the Navy's evaluation of different technologies, such as phytoremediation or groundwater neutralization, that might accelerate closure at the site.

Response—A review of alternatives that could accelerate groundwater cleanup is scheduled to be conducted in 2002.

2. ***Groundwater Contamination Trends***—As discussed at the 9 April 2002 Public Informational Meeting, given the recent removal action, the Navy is hoping that concentrations of groundwater contamination will decrease over time. However, as BACSE pointed out at the meeting, the likely trend is unknown, and might actually increase. What will the Navy do at Site 7 should contamination show an increasing trend over time?

Response—Groundwater concentrations of cadmium will be monitored as part of the selected remedy. If concentration trends show a significant increase over time to a concentration where the remedy is no longer considered to be effective, additional actions would be taken (if required) that could include installation of additional monitoring points or active remediation of soil or groundwater. However, due to the low concentrations of cadmium currently measured in Site 7 groundwater, additional remedial measures are not considered to be likely.

3. ***Institutional Controls***—BACSE believes that implementing institutional controls at a site where contamination exceeds protection criteria is vital for protection of human health. Of particular concern is how institutional controls will remain effective as time passes, especially if the Navy sells or leases the base property. What are the specific institutional controls that will be implemented, and how will the Navy ensure that the controls remain effective in the future, including if the property is sold or leased?

Response—The institutional controls implemented for Site 7 include prohibitions for consumption or contact with groundwater. The institutional controls will be added to the Base Master Plan that will limit contact with groundwater while the base property is under

Navy control. If the base was to be sold or leased, the institutional controls will be added to the property deed to alert new landowners of the potential for impacted groundwater at Site 7.

4. ***Process for Implementing Technologies***—Once the Navy completes the evaluation of technologies for accelerating site cleanup, what are the criteria for deciding which, if any, of the methods will be applied to Site 7? How much weight are costs given? What is the process for planning (work plan, etc.) and communicating with the regulators and the public? Will there be a public meeting? How will the Record of Decision be modified?

Response—The current proposed remedy for the site (i.e., institutional controls and long-term monitoring) is the most applicable and cost-effective remedial option for the low levels of contaminants present in groundwater at Site 7. No decision has been made to proceed with the use of other remedial technologies at Site 7. A review of phytoremediation and other remedial technologies to speed cleanup was requested by MEDEP, and is scheduled to be completed during 2002. This review will be used to assess if other technologies could be used at Site 7 and would be cost effective to implement, although these remedial technologies would be considered only if significantly higher levels of contaminants are detected at Site 7 that would require action. No formal process has been established at this time to decide how evaluation criteria (such as cost) would be weighed. At this time, the Navy believes the existing Record of Decision process is adequate to address issues at Site 7, and an additional work plan or public meeting will not be required.

5. ***Phytoremediation***—If the Navy chooses to implement phytoremediation at Site 7, what happens to the vegetation that takes up the contamination? For example, what do you do with the wood once trees have removed the contamination from the ground?

Response—At phytoremediation sites, the plant material that contains metals is commonly removed from the site, turned into ash to reduce volume, sampled to determine disposal options, and then disposed of at an appropriate facility.

**RESPONSE TO COMMENTS FROM THE
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
FOR THE PROPOSED REMEDIAL ACTION PLAN FOR SITE 7
AT THE NAVAL AIR STATION, BRUNSWICK, MAINE**

COMMENTOR: Claudia Sait

DATED: 25 February 2002

GENERAL COMMENTS

1. As discussed in a recent telephone conversation, it is critical that for the Navy to finalize the Summary Report of the Ground-water and Soil Investigations for Site 7 so that it may become part of the Administrative Record and be reviewed by the public.

Response—The Summary Report of the Ground-Water and Soil Investigation will be finalized and issued in early March 2002.

2. If the cadmium was mobilized by the disposal of acid, has the Navy considered neutralizing the groundwater to aid re-adsorption of the cadmium? This would provide a permanent solution and meet more of the CERCLA criteria. Obviously it would not be without cost. Monitoring and hydraulic control would be necessary. The Navy should consider this option and possibly include in as a third alternative.

Response—The Navy will initiate an evaluation of different remedial options to accelerate the closure of Site 7 during 2002 and report the results of the evaluation to EPA, MEDEP, and the RAB. A significant evaluation factor of different remedial technologies is the cost of implementation, and the Navy appreciates that MEDEP is aware of this significant factor when determining appropriate remedial options for a site.

SPECIFIC COMMENTS

1. *Introduction, 1st Paragraph, 2nd Line*—Site 7 is the Old Acid/Caustic Pit. Please correct.

Response—The site name has been corrected.

2. *Introduction, 2nd Paragraph, 5th Line*—Restoration Advisory Board meetings are no longer held on a quarterly basis. At best they are semi annual. Please correct.

Response—The frequency of the Restoration Advisory Board has been revised to semi-annual basis.

3. *Column 1*—A new bullet should be added which reads “Update information contained in the Remedial Investigation issued in 1990 with the results of subsequent investigations. Adding a box with remedial component bullets would be an improvement to members of the public that may want just a brief synopsis.

Response—The bullet text recommended has been inserted into this section of the PRAP. A summary box that presents the remedial components has been added to the first page of the PRAP.

4. “Limited Groundwater Monitoring” needs to be changed to Groundwater Monitoring or Navy needs to be very clear on what is meant by Limited Groundwater Monitoring. In any event, if the Navy means to limit the monitoring in term, periodicity or both, this should be discussed in the PRAP.

Response—The word “limited” has been deleted from this sentence.

5. Since the Institutional Controls (IC) are a key part of this remedial action the IC boundaries must be shown on the site map.

Response—The institutional control boundary has been shown on the Site 7 PRAP Figures 1 and 2.

6. **Page 3, Proposed Remedial Action, Column 1, Bullet 2**

- a. MEDEP recommends the following language: “The investigation work has shown elevated cadmium levels in groundwater as the contaminant of concern.”

Response—The following sentence has been inserted at the beginning of this bullet:

The investigation work has shown elevated cadmium levels in the groundwater as the contaminant of concern.

- b. Another item below this should read: “Extensive investigation have not identified the source responsible for cadmium in Site 7 groundwater.”

Response—Agreed, the second bullet sentence has been revised as follows:

The Extensive investigations work done to date has shown slightly elevated have not identified the source responsible for cadmium levels in a few isolated wells Site 7 groundwater.

7. **Page 3, Proposed Remedial Action, Column 1, Bullet 4—**

- a. MEDEP recommends the following language: “Post-removal sampling efforts continue to show elevated levels of cadmium in groundwater, still marginally above the Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines.”

Response—The sentence has been revised as follows:

Post-removal sampling efforts continue to show indicate reduced elevated levels of cadmium with concentrations ranging from 21.8 to 22.0 ug/L in groundwater, but still marginally above drinking water standards Federal Maximum Contaminant Levels (MCLs) (5 mg/L) and State Maximum Exposure Guidelines (MEGs) (5 mg/L).

- b. MEDEP also recommends removing the last sentence of this bullet since it a component of the proposed remedy and not a fact on which the remedy was selected.

Response—Agree, the sentence has been deleted from the bullet.

8. **Page 3, Site History, Column 1, Paragraph 3**—According to the Remedial Investigation (RI) Report in addition to being the Old Acid/Caustic Pit this area was the site of the Defense Reutilization and Marketing Office. This information needs to be included in this section.

Response—This information has been added to the Site History section of the PRAP.

9. **Page 3, Summary of Investigations, Column 1, 1st Paragraph**—The acronym NACIP can be deleted without effecting the value of the sentence, otherwise it needs to be written out in full.

Response—The acronym “NACIP” has been deleted from this sentence.

10. **Page 4, Site History, Column 1**

- a. The sequencing between the 1985 report with “no evidence of groundwater contamination” and the current situation needs to be resolved.

Response—The text of the PRAP has been revised to provide more description of the work that has occurred at Site 7 from 1985 to the present date.

- b. There should be a summary of results provided after the 1988 RI/FS and the 1989 RI/FS. Also it needs to be clear that this is a groundwater site and not a soil site and how that was determined.

Response—The text for the 1988-1989 RI/FS has been revised as follows:

1988-1989 Remedial Investigation/Feasibility Study Field Work at Site 7

- *Twenty soil gas points*
- *Ground-penetrating radar and terrain conductivity surveys*
- *Twenty test pits*
- *Soil and ground-water sampling*
- *In situ aquifer permeability testing.*

During the RI field investigation in 1988, acid salts were observed in portions of test pits TP-702 and TP-704 and occurred at a depth of approximately 2 ft bgs. Test pits TP-702 and TP-704 correspond to the area of magnetic anomalies identified during the ground penetrating radar survey of the site. In 1989, the area between these test pits was excavated to attempt to determine the area distribution of the acid salts. The RI report stated that the area with acid salts is believed to be the location of the former Old Acid/Caustic Pit.

Ground-water sample data indicated that cadmium was the only inorganic detected at concentrations exceeding the Federal MCL for cadmium in wells MW-NASB-094 (formerly identified as MW-704) and MW-NASB-096 (formerly identified as MW-706). A baseline risk assessment evaluated risks associated with repetitive direct contact and incidental ingestion exposure incurred by young children who may trespass and/or play in this area. For that reason, the RI/FS concluded that there are no human health risks associated with exposure to contaminants detected in the surface soils or ground water at Site 7 based on current and assumed future exposure conditions.

Since the baseline risk assessment did not indicate a risk to either human health or the environment, and in accordance with EPA guidance, the RI/FS recommended a No Further Action alternative for the site as providing an adequate level of protection.

11. **Page 4, Site History, Column 1, Summary Report of the Ground-water ...1st Sentence**— This work was performed in two phases during 2000 and 2001. MEDEP recommends revising the sentence as follows: “In 2000 and 2001 the Navy conducted a phased field investigation ...” The last sentence in this paragraph can then be deleted.

Response—The last sentence has been deleted and the first sentence has been revised as follows:

Despite the results of the risk assessments in 2000 and 2001, the Navy conducted a phased field investigation effort to search for and remove the source of continuing cadmium contamination in the groundwater above the Federal MCLs/State MEGs at Site 7.

12. **Page 4, Site History Column 1 & 2, Phase I**—Please revise the third sentence as follows: “The cadmium concentration initially increased to 50 ppb then fell to 22 ppb in concentration during the pumping, which still remains above the MCLs/MEGs.”

Response—The sentence has been revised as recommended.

13. **Page 4, Site History Column 2, Phase 2, 1st Sentence**—MEDEP recommends the following language: “Following the pump test, the Navy completed additional investigations to assess whether an isolated man-made or natural source of cadmium was present in the soils.”

Response—The sentence has been revised as follows:

Following the pump test, the Navy completed additional investigations to assess whether an isolated ~~source (either natural or man-made)~~ or natural source of cadmium was present in the soil.

14. **Last Sentence**—MEDEP recommends the following language: “The excavation encountered metal debris and substantial organic material either or both which could be contributing to the cadmium concentrations observed.”

Response—The sentence has been revised as follows:

The excavation encountered metal debris and substantial organic material ~~that either or both of which could be a natural occurring source that is contributing to the cadmium concentrations observed.~~

15. **Page 4, Summary of Remedial Alternatives, Item 2**—The remedies proposed do not reduce the contaminant of concern, therefore please revise as follows: Monitor groundwater concentrations of cadmium until MCLs and MEGS are consistently met.

Response—The text has been revised as follows:

Monitor groundwater concentrations of cadmium until concentrations are consistently below the MCL and MEG.

16. **Table 1**

- a. Five year reviews must be added to alternative 2 components.

Response—Agree, five-year reviews have been added to Table 1, Alternative 2 components.

- b. Bullet 1 should be revised to read “Institutional controls will limit excavation at Site 7 and restrict the pumping and use of groundwater.

Response—The text has been revised as follows:

Institutional controls will ~~limit control excavations at Site 7 in the area of groundwater contamination and restrict installation of drinking water wells~~ the pumping and use of groundwater.

17. **Page 5, Column 1, Alternative 2, Paragraph 1**—There was no indication that the levels of cadmium have gone down. Therefore, please revise as follows: “After defining this area, a removal action was conducted in an attempt to close out the site with no further action, however the cadmium levels still remained above the MCLs/MEGs.”

Response—The second sentence has been revised as follows:

After defining the area, a removal action was conducted in an attempt to close out the site with no further action; however, cadmium concentrations still remain above the Federal MCLs and State MEGs.

18. **Page 5, Column 1 Alternative 2, Paragraph 2**—

- a. Please revise as follows: “To prevent exposure to this isolated area of shallow groundwater, the Navy will establish institutional controls preventing the excavation of soil and pumping or use of the groundwater.”

Response—The sentence has been revised as follows:

To prevent exposure to this isolated area of shallow groundwater, the Navy will ~~install~~establish institutional controls ~~preventing~~ restricting the excavation of soil and pumping or use of the groundwater.

- b. Please provide more information on the institutional control; identify what document will contain the Institutional Controls for this site and how they will be administered.

Response—The following text has been added to this section of the Site 7 PRAP to provide more detail on the institutional controls for Site 7:

Land use restrictions shall be documented in the current NAS Brunswick Operations Instructions (NASBINST 5090.1A “Restriction on Excavating Activities”). The Operations Instructions are used by NAS Brunswick to identify and screen environmental areas from inappropriate construction or development activities. Should NAS Brunswick ever close, lease, and/or transfer this property, EPA and MEDEP shall be notified and appropriate wording shall be included in the necessary real estate documents to prevent disturbance of the site without regulatory review and approval.

- c. It is also unclear exactly where the institutional boundaries are proposed to be. The term “area” is used throughout the document which indicates that only the area of groundwater contamination is proposed for institutional controls. If this is the case, than the Navy must proposed a buffer and provide a justification for how the buffer was determined. The area would need to be surveyed and permanent markers installed. Or is it all of Site 7? This needs to be clarified.

Response—The following text has been added to this section to provide further detail with regards to the dimensions of the institutional controls and the marker/monument for the IC. The Navy has determined to use a well, since the location of the well has been surveyed and will be a permanent marker at the site.

The area of institutional controls will include the area covered by a radius of 150 ft from monitoring well MW-NASB-099 at Site 7.

- d. Additional information on what the Navy means by “limited” groundwater monitoring should be included in this section. This is important information for both the regulatory agencies and for the public to know before a decision can be made on the appropriateness of the remedy.

Response—The use of “limited” has been removed from this section of the PRAP.

- e. “Given the low levels and recent source area removal action, it is expected that the low levels of cadmium will naturally attenuate and that monitoring will not be a long-term requirement.”

It would be helpful to specify what natural attenuation processes would be at work because after reading the definition for natural attenuation in the PRAP the term does not appear to fit cleanly. Also please provide an estimate for how long the Navy believes that it will take to attenuate.

Response—The natural attenuation process relies on a variety of physical, chemical, or biological processes that act without human intervention to reduce the mass of contamination present in soil and groundwater. These processes include biodegradation, dispersion, dilution, sorption, chemical and biological stabilization, transformation, or destruction of contaminants. The natural processes at Site 7 may include sorption reactions such as precipitation, adsorption on the surfaces of soil minerals, adsorption into the matrix of soil minerals, or partitioning into organic matter. The estimated time for attenuation at Site 7 is 10 years.

- f. Why is the estimation of cost based on 10 years rather than the normal 30 year cost estimation used under CERCLA?

Response—As stated on Page 4-2 of the current EPA Guidance (EPA 540-R-00-002, OSWER 9355.0-75, July 2000) titled *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*, “Past USEPA guidance recommended the general use of a 30-year period of analysis for estimating present value costs of remedial alternatives during the FS (USEPA 1988). While this may be appropriate in some circumstances, and is a commonly made simplifying assumption, the blanket use of a 30-year period of analysis is not recommended.” Therefore, an estimated time period of 10 years was determined based on site-specific data and information collected at Site 7 for the remedy.

19. **Page 6, Column 2, The Navy’s Proposed Remedy, Paragraph 1**—Please revise the last sentence as follows: “This remedy includes institutional controls to prevent human exposure to cadmium in the groundwater, and a limited groundwater monitoring program to ensure this localized contamination remains isolated and decreases over time.”

Response—The sentence has been revised as follows:

This remedy includes institutional controls to prevent human exposure to cadmium in the groundwater, and a ~~limited~~ groundwater monitoring program to ensure this localized contamination remains isolated and concentration trends over time are monitored and documented.

20. **Table 2**—

- a. Alternative 2 needs to be changed to “Groundwater Monitoring and Institutional Controls.”

Response—The text has been revised as requested.

- b. Row 3 (Long Term Effectiveness Ranking) Wouldn't both alternatives be the same?. There is no real remedy so by the time that groundwater meets the ARARs long term effectiveness should be the same. MEDEP recommends that the following: "Moderate (No Treatment)" for both alternatives.

Response—The text has been revised as recommended.

- c. Row 4 needs to be revised to "Poor (No treatment)".

Response—Agree, "(No treatment)" has been added to Table 2, Row 4.

21. **Page 7, Glossary**—Please add the definitions for Contaminants of Concern and In Situ.

Response—Definitions for contaminants of concern and *in situ* have been included in the Glossary of the Site 7 PRAP.

**RESPONSE TO COMMENTS FROM THE
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
FOR THE REVISED DRAFT PROPOSED REMEDIAL ACTION PLAN
FOR SITE 7
AT THE NAVAL AIR STATION, BRUNSWICK, MAINE**

COMMENTOR: Claudia Sait

DATED: 28 March 2002

Thank you for the revised draft Proposed Remedial Action Plan for Site 7 (March 2002 version). Most of Maine Department of Environmental Protection's (MEDEP) previous comments were incorporated. Additional editing comments were transmitted directly to the Navy's consultant today. However, there is one remaining comment.

1. The Navy is proposing a radius of 150 ft from MW-NASB-099. Since the proposed area within the Institutional Control Boundary is not clearly delineated with a road or some other non-moveable marker, it will be necessary to establish the area using metes and bounds and install permanent markers. Therefore, the Navy may want to consider using a square rather than a circle. Markers could be easily placed on the four corners.

Response—Based on a telephone conversation between MEDEP, Navy, and EA, it was determined that the proposed well, a surveyed location that will remain in at Site 7 until site closure is achieved, could remain as the center point of the institutional control boundary, which is a 150-ft radius from MW-NASB-099.

2. MEDEP also requested that a map showing the location of the institutional control area in relationship to Site 7 be included in the PRAP.

Response—The institutional control boundary has been included in all the Site 7 PRAP figures.

**RESPONSE TO COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
FOR THE DRAFT PROPOSED REMEDIAL ACTION PLAN
FOR SITE 7
AT THE NAVAL AIR STATION, BRUNSWICK, MAINE**

COMMENTOR: Michael Barry

DATED: 28 February 2002

Thank you for the opportunity to review the above document; EPA's specific comments are attached. Our comments were few relative to other PRAPs and we appreciate the Navy's quick turnaround of the draft PRAP.

As earlier discussed, the final groundwater and soil investigation (removal) report should be in the admin record and available to the public at the start of the PRAP public review and comment period. EPA is pleased to confirm that all our comments to the draft report (by letter dated 11/13/2001) were satisfactorily resolved in your response to comments, sent by EA by email on 2/20/2002.

Our other substantive comment is that 5-year reviews need to be described as a remedy component since waste will remain in place in the form of groundwater contaminated with cadmium above the MCL/MEG (for a time at least). We expect/recommend the PRAP to anticipate this to be a temporary situation due to the site-specific conditions.

NOTE: Comments added to the preliminary comments sent on 2/15/2002 are in bold. Others are identical except for editorial changes.

1. Page 1, Introduction

- a. Need to add 5-year review to the remedy description (can caveat with requirement expected to end within 10 years or at least at some point).

Response—Text has been added to the PRAP to present the five-year review in the description of the remedy.

- b. Also, please consider using a box with remedial component bullets as was done with Site 9 as it's easier to read.

Response—A summary box with remedial component bullets has been added to the final PRAP.

- c. It's understood why "Limited" LTM is described; i.e., to convey a small, short duration program. However, this is covered well on Page 5 and "Limited" has no regulatory meaning and may be ambiguous to the reader - would you consider deleting it?

Response—Yes, "Limited" has been deleted from the PRAP.

- 2. **Page 2 – Figure**—When you put this together consider including all the test pits/borings/wells/removal area, etc. This will take more effort and might be too busy a graphic. However, the rationale is to show that:

- a. This SMALL area has been very well studied, thus there is good reason to feel all the source material is removed, i.e., this will address the question "how do you know it's so limited and if so why don't you look at further excavation?"

Response—The test pits have been shown in the PRAP figure(s) to address this comment.

- b. This would graphically relate a lot of the investigation results/history - and maybe cut required text.

Response—Comment noted.

- c. It seems like a full page can be allotted to the figure, maybe all the data will fit. Perhaps there will be room for box of the key results?

Response—A whole page has been dedicated to this figure.

- d. The IC boundary should also be included.

Response—The institutional control boundary for Site 7 has been included in the figure.

- 3. **Page 3, Proposed RA**—In the 4th bullet, we prefer to cite the actual cadmium and MCL concentrations.

Response—The cadmium concentrations have been cited in the text.

- 4. **Page 3-4, Summary of Remedial Investigations**—The PRAP needs to state what the findings of the RI/FS were and why was further action taken? As is it jumps from no threat on the 1985 study to what was done for the RI/FS to further work in 2000.

- a. Per EPA's understanding, the FS recommended NFA due to cadmium only in one well at about 15 ppb - and no exposure pathway. Since then the MEGs were promulgated, thus triggering action as an ARAR. This should be laid out (or exactly what did happen).

Response—The text has been revised to present the actions that were conducted at Site 7.

- b. Recommend you consolidate the 1988 and 1989 fieldwork. The public is probably more interested in what was found, rather than the level of effort, unfortunately.

Response—Agreed, the text regarding fieldwork in 1988 and 1989 has been consolidated.

- c. On the IA, recommend deleting “NACIP,” confirmation study will suffice - or define what NACIP is.

Response—Agreed, “NACIP” has been deleted from the text.

- d. The final results of the RI and Phase II should be stated - or could be put in a table on Page 2 with the figure.

Response—Final results of the Remedial Investigation have been added to the text of the PRAP.

5. **Page 4, End of “Summary of Investigations” Section**

- a. Usually a “Summary of Site Risks” section follows at this point in the PRAP. Including the cadmium results vs. the MCL/MEG as commented above will sufficiently address the omission of a summary site risks section for this PRAP.

Response—Comment noted.

- b. Suggest adding the following: “Based upon the results of this removal, the Navy has determined that further excavation is not feasible.”

Response—The suggested text has been added as recommended.

6. **Page 4 Summary of Remedial Alternatives**—A. The first part of the section is really the RAO’s (Remedial Action Objectives) and should have a separate header. Also, because the MEGs are an ARAR aquifer restoration should be an RAO.

Response—Agreed, the text has been revised to incorporate comments into the PRAP.

7. **Page 5, Alternative 2**

- a. Need to add the 5-year review to the table and text. Suggest a caveat that we expect the groundwater contamination to clear up in the near to mid term timeframe. There isn’t a need to add 5-year review to the alternative title, however.

Response—The five-year review has been added to the text and table as suggested.

- b. In components on the table and in text, we prefer “control” or “restrict” for excavation since you can excavate at the site under proper Health and Safety panning and disposal, etc. Also, prefer “...pumping and use of groundwater” to “installation of drinking water wells.” This covers all groundwater uses and actually gives the Navy more flexibility.

Response—Agreed, the text has been revised to incorporate the suggested changes.

- c. Prefer to state the MCL/MEGs rather than the general “criteria”

Response—The MCL and MEG have been cited specifically in the text of the PRAP.

- d. Should add a bit more detail on what the ICs are as in the site 9 PRAP - basically NASB Operating Instructions, etc. Also need to add the paragraph about if the property is transferred - see Site 9 PRAP.

Response—Additional detail has been added to the text regarding institutional controls at Site 7.

- e. The ceasing of groundwater monitoring should be noted as being with review and approval by MEDEP/EPA.

Response—Commented noted, the PRAP has been revised to address this comment.

8. *Page 6, The Navy’s Proposed Remedy*

- a. Need to add 5-year reviews.

Response—Five-year reviews have been added to the PRAP text.

- b. Need to add in the last paragraph that the remedy does not meet the statutory preference for active treatment, though it will permanently reduce concentrations. Suggested text follows, but reads more like formal ROD language: “An irreversible reduction in the toxicity and volume of contamination will occur as a result of this alternative’s reliance upon natural attenuation processes. However, natural attenuation is not considered active treatment, and an alternative that relies upon natural attenuation processes does not meet the statutory preference for treatment under CERCLA.”

Response—Comment noted, the recommended text has been inserted into the PRAP.

9. *Page 6, Table 2*

- a. The title of Alternative 2 should be same as on Page 5; also prefer “groundwater monitoring” to “Natural Attenuation” in the title. A detailed MNA study wasn’t done (nor would EPA advocate one).

Response—Comment noted, the title has been changed as recommended.

- b. This is a technicality, but Criteria 3 is for after RAO’s are met. Thus both alternatives would rate the same. Another way of looking at it is if there isn’t any LTM how can you measure this? However, this is accounted for by rating them differently for criteria 2.

Response—Comment noted.

10. *Page 7, References*—The 10/2001 draft summary report should be finalized, see cover letter.

Response—The October 2001 draft summary report of the Ground-Water and Soil Investigations at Site 7 was finalized and issued in March 2002.

**RESPONSE TO COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
FOR THE REVISED DRAFT PROPOSED REMEDIAL ACTION PLAN
FOR SITE 7
AT THE NAVAL AIR STATION, BRUNSWICK, MAINE**

COMMENTOR: Michael Barry

DATED: 27 March 2002

Thank you for the opportunity to review the above referenced document, which was submitted by EA Engineering, Science, and Technology on behalf on the Navy on 26 March 2002. This letter formally submits EPA's comments, which I sent by e-mail yesterday.

The revised draft PRAP reads well and overall conveys the required information completely and concisely; it resolves the vast majority of EPA's comments to the draft PRAP in my letter of 28 February 2002. Our only remaining overall comment is that the reason why action was undertaken despite the risk assessment finding of "no CERCLA risk" on the RI should be more explicitly stated. Details are attached.

1. ***Summary of Investigation Section; Top of Second Column on page 4***—The reason why action was undertaken despite the risk assessment finding of "no CERCLA risk" and the FS determination of "No Further Action" should be more explicitly stated. Also in this section:
 - a. Since it was stated in the August 1990 RI (Section 9.5, Page 9-20) that cadmium was detected between 8 and 15 ppb in MW-704 (later designated MW-94), the sentence stating that cadmium not detected above the MCL should be struck.

Response—Agreed, this sentence has been deleted from the text.

- b. We understand the point the PRAP strives to get across (no CERCLA risk finding), but these two paragraphs get wordy and don't flow as well as the rest of the PRAP.

We offer the below suggested revised first three paragraphs as a possible solution. EPA is not fixed upon this specific wording, any revision that addresses the basis of our comment is acceptable. Changes are in bolded italics and underlined.

"Ground-water sample data indicate that cadmium was the only inorganic detected at concentrations exceeding the Federal MCL for cadmium in wells MW-NASB-094 (formerly identified as MW-704) and MW-NASB-096 (formerly identified as MW-706). ***Deleted sentence***. A baseline risk assessment evaluated risks associated with repetitive direct contact and incidental ingestion exposure incurred by young children who may trespass and/or play in this area. ***For that reason***, the RI/FS concluded that there are no

human health risks associated with exposure to contaminants detected in the surface soils or ground water at Site 7 **based on current and assumed future exposure conditions.**”

“Since the baseline risk assessment did not indicate a risk to either human health or the environment, and in accordance with EPA guidance, the RI/FS recommended a No Action Alternative for the site as providing an adequate level of protection.”

Summary Report of the Ground-Water and Soil Investigations at Site 7 (EA 2002a, b)

In order to meet regulatory requirements and despite the results of the risk assessment and RI/FS recommendation, the Navy conducted a phased field investigation effort in 2000-2001 to search for and remove the source of **continuing** cadmium contamination **above the Federal MCL/State MEG** in the ground water at Site 7.

Phase I – Pump Test/Ground-Water Sampling

continue as written....

Response—The recommended text edits have been incorporated into the final Site 7 PRAP.

2. (Editorial) On figure text box marking the area of cadmium exceedances, request adding the “FEDERAL MCL” to the “STATE MEG;” or just leave as “EXCEEDANCES.”

Response—The figure box label has been revised as follows:

Area of cadmium exceedances of the Federal MCL and State MEG

Appendix A.2

Record of Decision

- **C. Lepage (BASCE)**
- **D. Messier (MEDEP)**
- **M. Barry (U.S. EPA)**

Lepage Environmental Services, Inc.

P. O. Box 1195 • Auburn, Maine 04211-1195 • 207-777-1049 • Fax 207-777-1370

September 25, 2002

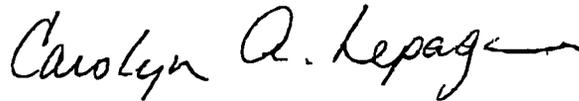
Mr. Orlando J. Monaco
Code EV21 LM
Naval Facilities Engineering Command, EFANE
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Subject: The Navy's Responsiveness to BACSE Comments on the *Record of Decision for Site 7*

Dear Mr. Monaco:

The purpose of this letter is to state the Brunswick Area Citizens for a Safe Environment's (BACSE's) perspective on the Navy's responsiveness to BACSE comments on the *Record of Decision for Site 7* (ROD) for inclusion in Appendix A of the Final ROD. Written BACSE comments on the Draft Final ROD were submitted to the Navy in comment letters dated September 11, 18, and 23, 2002, and in an email dated September 20, 2002. Given time constraints as the ROD signature date approached, the Navy did not follow the normal procedure of issuing formal written responses to BACSE's comment letters and email. However, BACSE feels that the group's comments, particularly those related to the most substantive issues, have been adequately addressed by the text revisions included in the Final ROD.

Sincerely,



Carolyn A. Lepage, C.G.
President

cc: Loukie Lofchie, BACSE
Tom Fusco, BACSE
Ed Benedikt, BACSE
Anthony Williams, NASB
Claudia Sait, MEDEP
Mike Barry, EPA
Al Easterday, EA ES&T



"Messier, Denise L" <Denise.L.Messier@state.me.us> on 09/24/2002 02:05:37 PM

To: "Barry.Michael@epamail.epa.gov" <Barry.Michael@epamail.epa.gov>, Al Easterday/Boston/EAEST, "Williams, Anthony GS (NASB)" <WilliamsA@nasb.navy.mil>, "Sait, Claudia B" <Claudia.B.Sait@state.me.us>, "clepagegeo@aol.com" <clepagegeo@aol.com>, "MONACOLJ@efane.navfac.navy.mil" <MONACOLJ@efane.navfac.navy.mil>, "fohnermr@efane.navfac.navy.mil" <fohnermr@efane.navfac.navy.mil>

cc:
Subject Site 7 ROD
:

On Monday, September 23, I spoke with Al Easterday of EA and presented Maine DEP's comments on the most recent Draft Final ROD. It is my understanding that these changes will be made.

Additional changes were made based on comments from the BASCE group representative. The definition of the site will be revised in accordance with the definition in CERCLA and state law. The proposed language is satisfactory.

We also had some e mail discussion about changes to page 2-37 section 5. Has this been resolved?

Today, September 24, I received via fax proposed changes to parts of the Response to Comments and additional data in response to comments 31, 32 and 33 of Claudia's 7/3/02 letter. It took two tries on Table 2-2, but with the receipt of the second fax the responses and additional data are satisfactory.

Assuming that all the changes and corrections are made, and we resolve the language on Page 2-37, MEDEP has no objections to finalizing the document.

Feel free to contact me if you have any questions. Thanks everyone.



Barry.Michael@epamail.epa.gov on 09/20/2002 03:49:22 PM

To: Al Easterday/Boston/EAEST
cc: Claudia.B.Sait@state.me.us, clepagegeo@aol.com, Denise.L.Messier@state.me.us,
fohnermr@efane.navfac.navy.mil, MONACOLJ@efane.navfac.navy.mil,
WilliamsA@nasb.navy.mil
Subject Re: Draft Final - Part I of the Site 7 ROD
:

ROD declaration acceptable to EPA

Mike Barry
RPM, Federal Facilities
EPA-New England
617.918.1344



Barry.Michael@epamail.epa.gov on 09/23/2002 12:11:11 PM

To: Al Easterday/Boston/EAEST
cc: Claudia.B.Sait@state.me.us, clepagegeo@aol.com, Denise.L.Messier@state.me.us,
fohnermr@efane.navfac.navy.mil, MONACOLJ@efane.navfac.navy.mil,
WilliamsA@nasb.navy.mil
Subject Re: Draft Final Part II of the Site 7 ROD - 20 Sept 2002
:

Al et al, I've reviewed part II. All edits of EPA's concern made as discussed in our conference call are complete/resolved. MEDEP's/Carolyn's looked resolved per the call too, but I'm sure you guys will verify yourselves.

With Carolyn's call that BASCE would support the remedy, it looks like the ROD is coming together.

Thanks to all for your efforts.

Mike Barry
RPM, Federal Facilities
EPA-New England
617.918.1344

Appendix A.3

Meeting Minutes from 9 April 2002 Proposed Remedial Action Plan Public Meeting

**PRAP PUBLIC MEETING
9 APRIL 2002
MEETING MINUTES**

1. MEETING ATTENDEES

Tony Williams, IR Program Coordinator	NAS Brunswick, Public Works Environmental
Lonnie Monaco, Remedial Project Manager	U.S. Navy, Engineering Field Activity Northeast
Mike Fohner, Remedial Technical Manager	U.S. Navy, Engineering Field Activity Northeast
Mike Barry, Remedial Project Manager	U.S. Environmental Protection Agency Region 1
Claudia Sait, Remedial Project Manager	Maine Department of Environmental Protection
Larry Dearborn, Project Geologist	Maine Department of Environmental Protection
Carolyn Lepage, TAG Consultant	Lepage Environmental Services
Al Easterday, Project Manager	EA Engineering, Science, and Technology
Peter Nimmer, Project Geologist	EA Engineering, Science, and Technology
Ed Benedikt, Citizen	Brunswick Area ESC

MEETING LOCATION: The Public Meeting was held at the Parkwood Inn's Meeting Room in Brunswick, Maine. The public meeting began at 1900 hours.

2. INTRODUCTIONS

Lonnie Monaco and Mike Fohner opened the Public Meeting to present the Proposed Remedial Action Plan (PRAP) for the Old Acid Caustic Pit (Site 7) at the Naval Air Station in Brunswick, Maine. The PRAP was presented on poster boards for review by the public with a question and answer session following the review of the posters. The PRAP Public Meeting agenda is provided in Attachment A. The sign-in sheet for attendees at the meeting is provided in Attachment B. A copy of the PRAP is provided in Attachment C.

3. SITE 7 PROPOSED REMEDIAL ACTION PLAN

The Site 7 PRAP was printed on poster size paper and mounted on poster boards to allow the public to view the Site 7 PRAP. Lonnie Monaco gave an overview of the site history and highlighted the Navy's recent additional remedial action efforts at Site 7. Tony Williams provided additional comment on the site history, site characteristics, and regulatory oversight history that has occurred at Site 7.

4. VERBAL COMMENTS FROM THE PUBLIC

Ed Benedikt: Does the Commanding Officer (CO) and Executive Officer (XO) know that Site 7 is located behind (to the west) their living quarters?

Tony Williams: Yes, both the CO and XO know that Site 7 is located west of their respected living quarters. The site boundary is approximately 500 ft west of the CO's living quarters.

Ed Benedikt: Could children go out to the site?

Tony Williams: Yes they could, but remember Ed, this is strictly a groundwater issue, it is not a direct contact with contaminated soil issue. The potential for children to have direct contact with, or exposure to, the groundwater at Site 7 is remote at best.

Ed Benedikt: What is the issue with groundwater, the cadmium, and why was a monitoring with institutional control remedy selected over more active remedy?

Mike Fohner: The Navy had hoped for a "No Further Action" (NFA) remedy with the additional work that was completed 2000 and 2001; however, cadmium was still present in the groundwater at low concentrations that exceed the MCL and MEG.

Lonnie Monaco: The Navy will monitor the site groundwater to track the concentration trend of cadmium, which will hopefully continue trending downward. A long-term monitoring plan will be prepared which will describe the monitoring activities in detail for the site.

Tony Williams: We tried to remove the source in July 2001. After the removal action, a new monitoring well, MW-NASB-099, was installed and a complete round of groundwater sampling was completed in November 2001. Unfortunately, cadmium was detected above the MCL and MEG (5 ppb) at MW-NASB-099 and, therefore, the Navy will continue to monitor the groundwater at Site 7 until the concentrations of cadmium are below the MCL and MEG.

Ed Benedikt: Why are phytoremediation and stabilization technology remedies being evaluated for Site 7 by the Navy?

Al Easterday: The Navy will evaluate these two remedial options (phytoremediation and stabilization technology) to see if they can be applied to the Site 7 remedy to optimize the proposed remedy of institutional controls with groundwater monitoring. The Navy will review these two options during 2002 and report the findings of the evaluation to the regulators and the RAB.

5. MISCELLANEOUS

The Brunswick RAB will begin meeting two times a year, generally in the spring and fall. If there is a public meeting requirement and it doesn't coincide with the Spring and Fall RAB meeting time, then a meeting will be scheduled beyond the Spring and Fall meetings. The next Brunswick RAB meeting is scheduled for the week of 21 October 2002, preferably to be held on a Tuesday, Wednesday, or Thursday.

The Public Meeting ended at 2045 hours on 9 April 2002.

Attachment A
Public Meeting Agenda

Agenda
Public Meeting
Site 7 Proposed Remedial Action Plan
09 April 2002
Parkwood Inn
Brunswick, MA
1900 to 2100 hours

- 1900 – 1915 Administrative
- Introductions
- 1915 – 2015 Viewing of Posters
- Site 7 Proposed Remedial Action Plan
- 2015 – 2045 Presentation of Site 7 Proposed Remedial Action Plan
- 2045 – 2055 Questions and Answers
- 2055 – 2100 Wrap-Up/Next Meeting

Attachment B
Attendee Sign-in Sheets

Attachment C

**Proposed Remedial Action Plan for Site 7
Dated March 2002**



**DEPARTMENT OF THE NAVY
INSTALLATION RESTORATION PROGRAM
NAVAL AIR STATION, BRUNSWICK, MAINE**

**PROPOSED REMEDIAL ACTION PLAN
FOR SITE 7**

Introduction

The Department of the Navy is releasing this Proposed **Remedial Action**¹ Plan (Proposed Plan) to address the **groundwater** at the Naval Air Station (NAS) Brunswick, Site 7 (Old Acid/Caustic Pit Site), in the City of Brunswick, Maine (Figures 1 and 2). In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, the law known as Superfund, the Proposed Plan presents the preferred remedial alternative for Site 7 and requests the Public's involvement in the selection of a final remedy.

This site was investigated as part of the base's Installation Restoration Program, which was conducted to identify and clean up sites created by past operations that do not meet today's environmental standards. The Navy is the "lead agency" for this project. The U.S. Environmental Protection Agency (EPA) Region 1 and the State of Maine Department of Environmental Protection (MEDEP) provide regulatory oversight of Navy environmental activities. The Public has also participated in and is invited to attend Restoration Advisory Board meetings, which are held on a semi-annual basis. This Proposed Plan is intended to accomplish the following objectives:

- Update information contained in the remedial investigation issued in 1990 with results of subsequent investigations
- Explain the preferred remedial alternative the Navy has proposed for Site 7
- Describe the other remedial alternatives assessed for Site 7
- Define how "You," the Public, can participate in the process
- Explain how you can obtain additional information.

The Proposed Plan recommends institutional controls with groundwater monitoring with 5-year reviews to address threats posed by any remaining groundwater and/or soil contamination at Site 7 that could impact public health and the environment.

THE CLEANUP PROPOSAL

After careful study of Site 7, the Navy proposes the following plan:

- ✓ Monitored **natural attenuation**
- ✓ Establish institutional controls such as land use restrictions for soil and groundwater
- ✓ Conduct long-term monitoring with 5-year reviews

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1. Text first shown in **boldface** is defined in the Glossary.

Figure 1. Site 7 location.

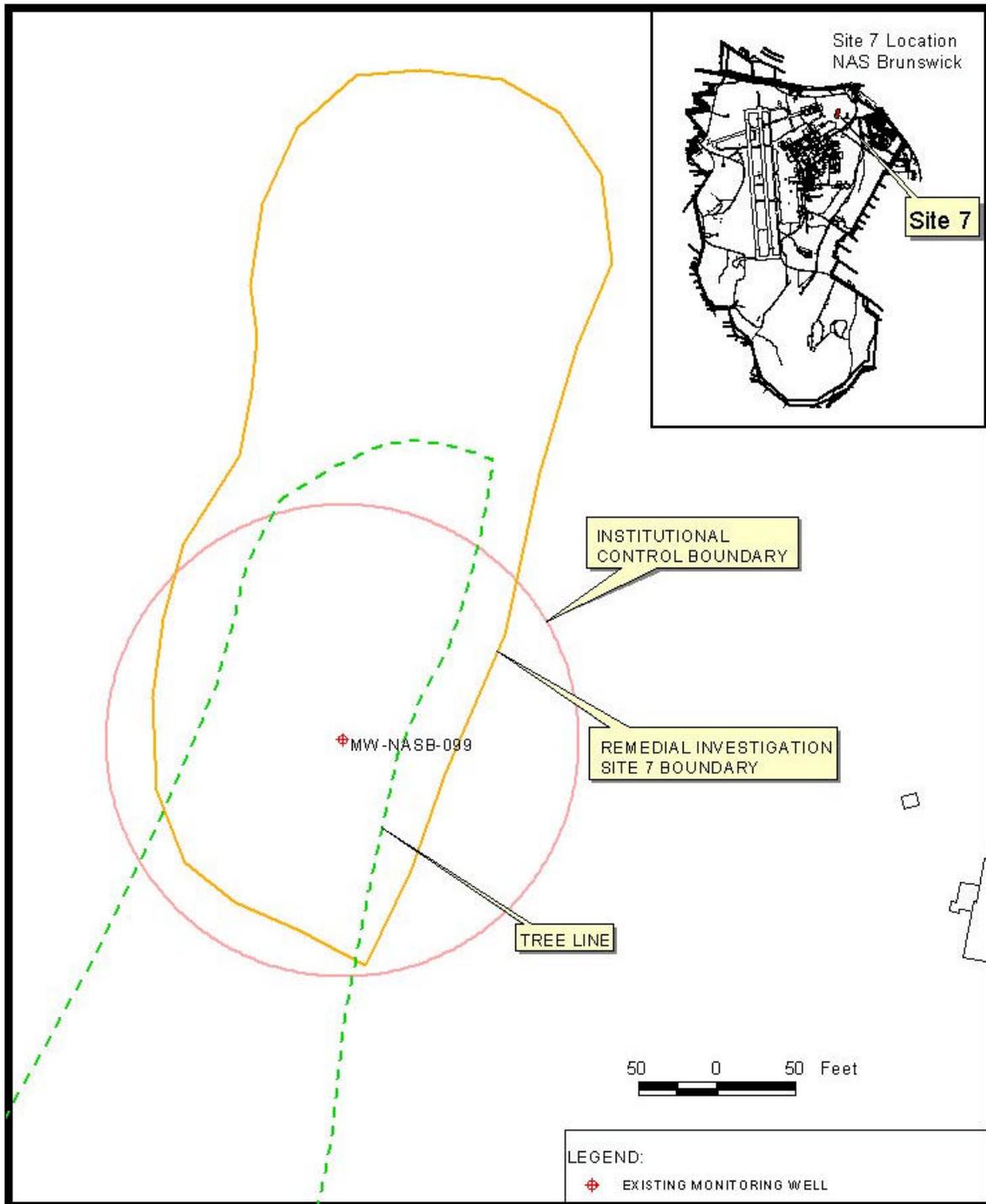
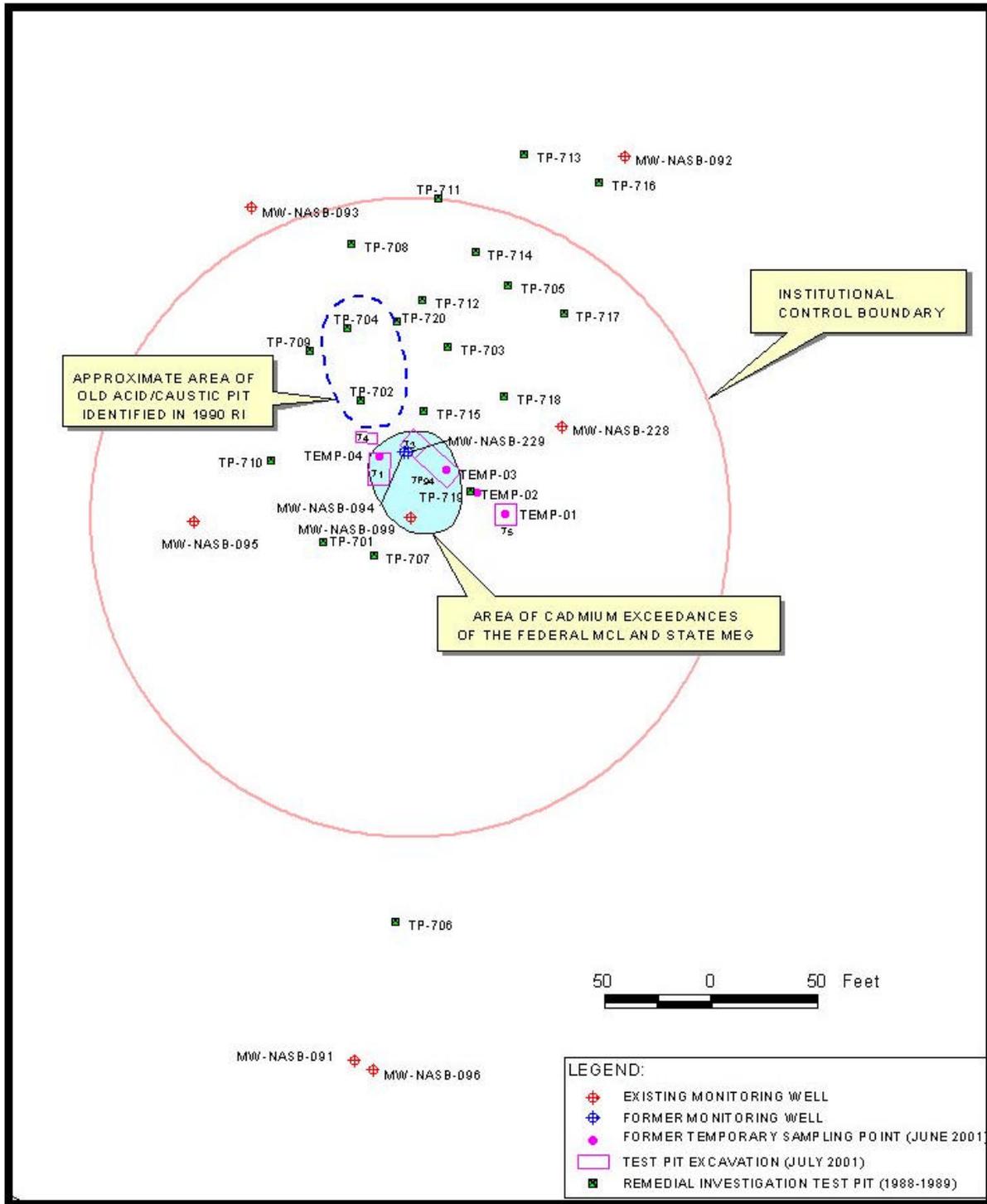


Figure 2. Site plan.



The Proposed Remedial Action

The Navy's recommendation of institutional controls with groundwater monitoring is based upon the following:

- A **remedial investigation** and follow-on summary report was completed to define the key site characteristics and **contaminants of concern**.
- The investigation work has shown elevated cadmium levels in the groundwater as the contaminant of concern. Extensive investigations have not identified the source responsible for cadmium in Site 7 groundwater.
- The area of contamination appears to be localized and shallow. A removal action was completed in July 2001, excavating and disposing offsite approximately 400 yd³ of soil and metal debris.
- Post-removal sampling efforts continue to show elevated levels of cadmium with concentrations ranging from 21.8 to 22.0 µg/L in groundwater, still above **Federal Maximum Contaminant Levels (MCLs)** (5 µg/L) and **State Maximum Exposure Guidelines (MEGs)** (5 µg/L).

The public comment period will be from 1 April to 30 April 2002. Upon timely request, the Navy will extend the comment period by a minimum of 30 additional days. You do not have to be a technical expert to comment—the Navy wants to hear your comments before making a final decision.

During the comment period, the Public is invited to review the documents and correspondence that support the Proposed Plan. These documents have been compiled into an **Administrative Record**. The Administrative Record, including relevant documents, is available for your review at the Curtis Memorial Library located in Brunswick.

How to Obtain More Information

The Navy will hold a Public Informational Meeting on 9 April 2002 at 7:00 p.m., at the Parkwood Inn's Conference Room, on Route 24, Cooks Corner in Brunswick to describe the proposed alternative as well as the other alternatives which were evaluated. The Public is encouraged to attend this meeting in order to hear the presentations and to ask questions.

There are two ways to offer your formal comments on the Proposed Plan:

1. Offer oral comments during the Public Informational Meeting on 9 April 2002, at 7:00 p.m., at the Parkwood Inn's Conference Room, on Route 24, Cooks Corner in Brunswick. Comments made at the meeting will be transcribed, and a copy of the transcript will be added to the site **Record of Decision** and Administrative Record.
2. Send written comments by the end of the Public comment period (postmarked no later than 30 April 2002) to the following address:

Mr. Lonnie Monaco
Remedial Project Manager (Code EV21 LM)
Naval Facilities Engineering Command
Engineering Field Activity Northeast
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090
Fax: (610) 595-0555

Upon review and consideration of Public comments, the Navy and EPA will issue a final remedy choice in a signed Record of Decision document with expected concurrence by MEDEP. The Record of Decision will contain a Responsiveness Summary in which the Navy's responses to comments received during the Public comment period will be presented.

Site History

NAS Brunswick, located in Brunswick, Maine, is an active base owned and operated by the Federal government through the Department of the Navy. In 1987, EPA placed NAS Brunswick on the **National Priorities List**. NAS Brunswick is located south of the Androscoggin River between Brunswick and Bath, Maine, south of Route 1 and between Routes 24 and 123. The primary mission of NAS Brunswick is flight operations related to anti-submarine warfare.

Site 7 is located in the northern portion of the base, west of the main entrance road (Fitch Avenue) and northeast of the Old Navy Fuel Farm. The site is a relatively flat, open clearing surrounded by woods on three sides; the south side abuts the Old Navy Fuel Farm. Site 7 was the Old Acid Caustic Pit reportedly used from 1952 to 1969 for liquid waste disposal. Wastes reportedly included transformer oil, battery acid, caustics, solvents, and other miscellaneous liquids. Site 7 was also the Defense Reuse

and Marketing Office area and, based on aerial photographs, was used as an outdoor storage and equipment laydown area during this period.

Summary of Investigations

Initial Assessment Study (Roy F. Weston 1983)

This study was one of the first investigation reports into the disposal activity at Site 7. It describes the former disposal pit as approximately 1 yd³ in size. The report concludes with the recommendation for a confirmation study.

Pollution Abatement Confirmation Study (E.C. Jordan 1985)

In 1984, a terrain conductivity survey was conducted at Site 7. This study was done in order to measure the conductivity of the subsurface soils in the vicinity of the suspected disposal pit, and to better determine the location of the disposal pit. Following this survey, three soil borings were completed at Site 7, and monitoring wells were installed at each boring location (MW-701, MW-702, and MW-703). Both soils and groundwater from these locations were analyzed as part of this study.

The report concluded that there was no evidence of groundwater contamination at Site 7 and no perceived threat to public health or the environment.

Base-Wide Remedial Investigation/Feasibility Study (E.C. Jordan 1990)

In 1987, NAS Brunswick was listed on the National Priorities List as a Superfund Site, and Site 7 was identified as a potential site. Between 1988 and 1989, a base-wide remedial investigation/feasibility study was conducted at NAS Brunswick. The following fieldwork was performed at Site 7 as a part of this study.

1988-1989 Remedial Investigation/Feasibility Study Fieldwork at Site 7

- Twenty soil gas points
- Ground penetrating radar and terrain conductivity surveys
- Twenty test pits
- Soil and groundwater sampling
- *In situ* aquifer permeability testing.

During the RI field investigation in 1988, acid salts were observed in portions of test pits TP-702 and TP-704 and occurred at a depth of approximately 2 ft bgs. Test pits TP-702 and TP-704 correspond to the area of magnetic anomalies identified during the ground penetrating radar survey of the site. In 1989, the area between these test pits was excavated to attempt to determine the areal distribution of the acid salts. The RI report stated that the area with acid salts is believed to be the location of the former Old Acid/Caustic Pit.

Groundwater sample data indicated that cadmium was the only inorganic detected at concentrations exceeding the Federal MCL for cadmium in wells MW-NASB-094 (formerly identified as MW-704) and MW-NASB-096 (formerly identified as MW-706). A baseline risk assessment evaluated risks associated with repetitive direct contact and incidental ingestion exposure incurred by young children who may trespass and/or play in this area. For that reason, the RI/FS concluded that there are no human health risks associated with exposure to contaminants detected in the surface soils or groundwater at Site 7 based on current and assumed future exposure conditions.

Since the baseline risk assessment did not indicate a risk to either human health or the environment, and in accordance with EPA guidance, the RI/FS recommended a No Further Action alternative for the site as providing an adequate level of protection.

Summary Report of the Groundwater and Soil Investigations at Site 7 (EA 2002a, b)

Despite the results of the risk assessment, in 2000 and 2001, the Navy conducted a phased field investigation effort to search for and remove the source of continuing cadmium contamination in the groundwater above the Federal MCL/State MEG at Site 7.

Phase I – Pump Test/Groundwater Sampling

This phase was completed in December 2000 to assess the extent of the cadmium contamination. A 51-hour pump test was conducted using MW-NASB-094 as the pumping well and monitoring seven nearby wells during the test. The cadmium concentrations initially increased to 50 parts per billion (ppb) then fell to 22 ppb during the pumping test, which still remain above the MCLs and MEGs.

Phase II – Groundwater Sampling and Soil Excavation

Following the pump test, the Navy completed additional investigations to assess whether an isolated man-made or natural source of cadmium was present in the soils. Four temporary sampling points were installed at Site 7 to better define the impact of cadmium on the groundwater. Two of these points (Temp-03 and Temp-04) reported cadmium levels higher (17.7 ppb and 32.6 ppb, respectively) than drinking water standards of 5 ppb (Federal MCL and State MEG). These data were used to delineate the extent of the excavation. The excavation encountered metal debris and substantial organic material either or both of which could be contributing to the cadmium concentrations observed. Over 400 yd³ of material was removed from the site. Based upon the results of this removal, the Navy has determined that further excavation is not cost effective.

In November 2001, a round of groundwater samples was collected from the site monitoring wells. Cadmium was

detected in two wells (MW-NASB-091 and MW-NASB-099) at concentrations of 0.7 and 22 ppb, respectively, but only the cadmium concentration in well MW-NASB-099 was found exceeding the State MEG and Federal MCL of 5 ppb.

Summary of Remedial Alternatives

The primary objectives of the proposed remedies for Site 7 are two-fold:

1. Prevent human exposure to the contaminated groundwater.
2. Monitor groundwater concentrations of cadmium until concentrations are consistently below the MCL and MEG.

To meet these objectives, the Navy has developed the following two remedial alternatives, which are summarized in Table 1.

TABLE 1 COMPARISON OF THE PROPOSED REMEDIAL ALTERNATIVES

Remedial Alternatives	Components	Comment
1. No Action	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Provides no protection of human health and the environment • Does not comply with regulatory requirements. Cost: \$0 (10-year projection)
2. Institutional Controls with Groundwater Monitoring	Groundwater Contamination <ul style="list-style-type: none"> • Institutional controls will control excavations at Site 7 and restrict the pumping and use of groundwater • Continued monitoring of groundwater until criteria are met • 5-year site reviews 	<ul style="list-style-type: none"> • Protects human health • Will monitor potential risks to the environment to determine compliance with regulatory requirements • Federal MCL of 5 µg/L and State MEG of 5 µg/L are key applicable or relevant and appropriate requirements Cost: \$80,000 (10-year projection)

Alternative 1—No Action

Under the “No Action” alternative, no cleanup actions or institutional controls would be implemented. The “No Action” alternative does not meet the remedial goals for Site 7 because it would take no action to prevent contact with affected groundwater. However, consideration of the “No Action” alternative is required by the National Contingency Plan in order to serve as a baseline comparison for other remedial alternatives.

Alternative 2—Institutional Controls with Groundwater Monitoring

Since the earlier environmental investigations at NAS Brunswick, the Navy has conducted several investigations to best define the nature and extents of contamination at Site 7. After defining this area, a removal action was conducted in an attempt to close out the site with no further action; however, cadmium concentrations still remained above the Federal MCL and State MEG.

To prevent exposure to this isolated area of shallow groundwater, the Navy will establish institutional controls restricting the excavation of soil and pumping or use of the groundwater. This alternative would establish institutional controls to prevent the contact with and ingestion of the impacted groundwater at the site. Land use restrictions shall be documented in the current NAS Brunswick Operations Instructions (NASBINST 5090.1A "Restriction on Excavating Activities"). The Operations Instructions are used by NAS Brunswick to identify and screen environmental areas from inappropriate construction or development activities. Should NAS Brunswick ever close, lease, and/or transfer this property, EPA and MEDEP shall be notified and appropriate wording shall be included in the necessary real estate documents to prevent disturbance of the site without regulatory review and approval.

The area of institutional controls will include the area covered by a radius of 150 ft from monitoring well MW-NASB-099 at Site 7.

In addition, this alternative would require the development of a Long-Term Monitoring Program to monitor this area's groundwater to ensure that this

contamination remains localized and monitor the trend of contamination. Given the low levels and the recent source area removal action, it is expected that the low levels of cadmium will **naturally attenuate** and that monitoring will not be a long-term requirement. With a series of results consistently showing levels of cadmium below regulatory standards, the Navy will cease groundwater monitoring at Site 7 but not before the approval and concurrence from EPA and MEDEP.

Nine CERCLA Evaluation Criteria

The Navy used the nine CERCLA criteria described below to evaluate the remedial alternatives for Site 7. The final remedial action plan must meet the first two criteria (protecting Public health and the environment and complying with applicable or relevant and appropriate requirements of Federal and more stringent State environmental laws and regulations), and must achieve the best balance among the next five criteria. The last two criteria will be evaluated upon completion of the Public comment period as described in the Record of Decision. Table 2 provides a comparative ranking of alternatives to the nine CERCLA criteria.

TABLE 2 COMPARATIVE RANKING OF ALTERNATIVES TO NINE CERCLA CRITERIA

CERCLA Criteria	Alternative 1 – No Action	Alternative 2 – Groundwater Monitoring and Institutional Controls
1. Protection of Human Health and Environment Ranking	Poor	Moderate
2. Compliance with Applicable or Relevant and Appropriate Requirements Ranking	Moderate	Good
3. Long-Term Effectiveness Ranking	Moderate(No Treatment)	Moderate (No Treatment)
4. Reduction in Toxicity, Mobility, and Volume through Treatment Ranking	Poor (No Treatment)	Poor (No Treatment)
5. Short-Term Effectiveness Ranking	Moderate	Moderate
6. Implementability Ranking	Good	Good
7. Cost (\$)	0	80,000
8. State Acceptance	To Be Determined	To Be Determined
9. Community Acceptance Ranking	To Be Determined	To Be Determined
NOTE: Good = Alternative meets the intent of the criteria. Moderate = Alternative partially meets the intent of the criteria. Poor = Alternative does not meet the intent of the criteria. To Be Determined = These criteria will be evaluated following the Public comment period.		

1. *Overall protection of human health and the environment* addresses whether or not a remedy provides adequate protection and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. *Compliance with applicable or relevant and appropriate requirements* addresses whether or not a remedy will meet applicable or relevant and appropriate requirements or other federal or state environmental statutes and/or provides grounds for invoking a waiver of those statutes and regulations.

3. *Long-term effectiveness* refers to the magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.
4. *Reduction in toxicity, mobility, or volume through treatment* refers to the anticipated performance of the treatment technologies that may be employed in a remedy.
5. *Short-term effectiveness* refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment during the construction and implementation period.
6. *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.
7. *Cost* includes capital, operations, and maintenance costs shown in present worth (today's dollar value).
8. *State acceptance* indicates, based on its review of the **remedial investigation/feasibility study** and Proposed Plan, whether the State concurs with, opposes, or has no comment on the preferred alternative selected.
9. *Community acceptance* will be assessed following review of the Public comments received on the Proposed Plan.

The Navy's Proposed Remedy

The Navy recommends that Alternative 2, Institutional Controls with Groundwater Monitoring and 5-year site reviews, be implemented at Site 7. This remedy includes institutional controls to prevent human exposure to cadmium in the groundwater, and a groundwater monitoring program to ensure this localized contamination remains isolated and concentration trends over time are monitored and documented. During 2002, the Navy will evaluate different technologies, such as phytoremediation or groundwater neutralization, to optimize the remedy at Site 7 to accelerate the closure of this site and report their findings to EPA, MEDEP, and the Restoration Advisory Board.

Based on information presently available, the Navy expects the preferred alternative to satisfy the following statutory requirements in CERCLA Section 121 (b): (1) be protective of human health and the environment, (2) comply with applicable or relevant and appropriate requirements, (3) be cost effective, and (4) utilize permanent solutions. An irreversible reduction in the toxicity and volume of contamination will occur as a result of this alternative's reliance upon natural attenuation process. However, natural attenuation is not considered active treatment, and an alternative that relies upon natural attenuation processes does not meet the statutory preference for treatment under CERCLA.

Glossary

Administrative Record—An official compilation of site-related documents, data, reports, and other information that is considered important to the status of decisions made relative to a Superfund site. The Public has access to this material.

Applicable or Relevant and Appropriate Requirements—The Federal and State requirements that selected remedies must attain. These requirements may vary among sites and remedial alternatives.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Act created a trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous substance facilities.

Contaminants of Concern—Organic compounds and/or inorganic elements found at concentrations that pose the greatest risk to human health and the environment and/or found at the highest concentrations in the source areas and groundwater at the site.

Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines—The relevant and appropriate federal and state standards to be used as groundwater cleanup levels at Site 7.

Groundwater—Water found beneath the earth's surface in pore spaces and fractures in geologic formations. When formations yield water in sufficient quantity and quality, groundwater is often used as a water supply.

In Situ—In its original place; unmoved, unexcavated; remaining at the site or in the subsurface.

National Priorities List—EPA’s list of the nation’s top priority hazardous substance facilities that may be eligible to receive Federal money for response under CERCLA.

Natural Attenuation—The natural physical, chemical, or biological processes that act to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These *in situ* processes include biodegradation, dispersion, dilution, sorption, and chemical or biological stabilization, transformation, or destruction of contaminants.

Record of Decision—A legal document that describes the remedy selected for a Superfund facility, why the remedial actions were chosen and others not, how much they cost, and how the Public responded.

Remedial Action—Actual implementation, following design, of the selected remedy to prevent or minimize the release of hazardous substances.

Remedial Investigation/Feasibility Study—A 2-part study of a hazardous substance facility that supports the selection of a remedy for a site. The first part, the remedial investigation, identifies the nature and extent of contamination at the facility. The second part, the feasibility study, identifies and evaluates alternatives for addressing the contamination.

References

EA Engineering, Science, and Technology. 2002a. Site 7 Groundwater Sampling Results Letter Report, Naval Air Station Brunswick, Maine. 4 March.

EA Engineering, Science and Technology. 2002b. Final Summary Report of the Groundwater and Soil Investigations at Site 7 Naval Air Station, Brunswick, Maine. 14 March.

E.C. Jordan Company. 1985. Pollution Abatement Confirmation Study, Step 1A-Verification. Portland, Maine. June.

E.C. Jordan Company. 1990. Draft Final Remedial Investigation Report NAS Brunswick. Portland, Maine. August.

R.F. Weston Inc. 1983. Initial Assessment Study of Naval Air Station, Brunswick Maine. Westchester, Pennsylvania. June.

COMMENT SHEET - Proposed Remedial Action Plan for Site 7

You may use this form to send in your written comments on this Proposed Plan. Please send your comments to the address shown below **postmarked no later than 30 April 2002.**

Affix
Postage

Mr. Lonnie Monaco
Remedial Project Manager (Code EV21 LM)
Naval Facilities Engineering Command
Engineering Field Activity, Northeast
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090

Appendix B

Specific Applicable or Relevant and Appropriate Requirements for Site 7

APPENDIX B
LIST OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR SITE 7

Requirement	Status	Requirement Synopsis	Action to be Taken to Attain Applicable or Relevant and Appropriate Requirements
ACTION-SPECIFIC			
Federal Applicable or Relevant and Appropriate Requirements			
RCRA Identification and Listing of Hazardous Waste Toxicity Characteristics (40 CFR 261.24)	Relevant and Appropriate	This requirement identifies the maximum concentrations of contaminants for which the waste would be a RCRA characteristic waste because of its toxicity. The analytical test in Appendix II of 40 CFR Part 61 is referred to as the TCLP.	In the event that excavations are conducted that remove soil, the soil will be analyzed by the TCLP to determine whether they are characteristic hazardous wastes under RCRA. Excavated materials that are determined to exceed TCLP allowable concentrations will be disposed offsite in a RCRA Subtitle C treatment, storage, or disposal facility. Excavated materials that are determined to be below TCLP allowable concentrations will be disposed offsite in a RCRA Subtitle D or other appropriate treatment, storage, or disposal facility.
State Applicable or Relevant and Appropriate Requirements			
Maine Hazardous Waste Rules Relating to Performance Standards for Establishing, Constructing, Altering, and Operating Certain Types of Hazardous Waste Units (06-096 CMR 854)	Relevant and Appropriate	This requirement outlines the State of Maine's rules relating to establishing, constructing, altering, and operating certain types of hazardous waste units.	This applicable or relevant and appropriate requirement will be met in the event that excavation is conducted at the site.
Maine Solid Waste Management Rules - Water Quality Monitoring, Leachate Monitoring, and Waste Characterization (06-096 CMR 405)	Relevant and Appropriate	Water quality monitoring, leachate monitoring, and the characterization of wastes stored or disposed of are tools used for the detection and analysis of potential threats to public health and safety or the environment. The applicable tools are required to be implemented at solid waste facilities where the Department identifies potential threats to public health and safety or the environment because of the nature of the wastes stored or disposed of and/or the type, location, design, or operation of the solid waste facilities.	The substantive requirements of these rules will be used in the monitoring of ground water at the site.
NOTE: RCRA = Resource Conservation and Recovery Act. TCLP = Toxicity Characteristic Leaching Procedure.			

Requirement	Status	Requirement Synopsis	Action to be Taken to Attain Applicable or Relevant and Appropriate Requirements
CHEMICAL-SPECIFIC			
Federal Applicable or Relevant and Appropriate Requirements			
Safe Drinking Water Act – Maximum Contaminant Levels (40 Code of Federal Regulations 141.11–141.16) (U.S. EPA 1999)	Relevant and Appropriate	Maximum Contaminant Levels have been promulgated for many common organic and inorganic contaminants. These levels regulate the concentration of contaminants in public drinking water supplies, but may also be considered relevant and appropriate for ground-water aquifers used for drinking water.	Under Alternative 2, the selected remedy, the Maximum Contaminant Levels will be attained through institutional controls and long-term monitoring.
Safe Drinking Water Act – Maximum Contaminant Level Goals (40 CFR 141.50 –141.51)	Relevant and Appropriate	Maximum Contaminant Level Goals have been promulgated for many common organic and inorganic contaminants. These levels indicate the level of contaminants in drinking water at which no known or anticipated adverse effect on the health effect of a person would occur, allowing for an adequate margin of safety. Maximum Contaminant Level Goals are non-enforceable public health goals.	Under Alternative 2, the selected remedy, where Federal Maximum Contaminant Levels have not been established, non-zero Maximum Contaminant Level Goals will be attained through institutional controls and long-term monitoring.
EPA Risk Reference Doses (U.S. EPA 1999)	To Be Considered	Risk Reference Doses are the concentrations considered unlikely to cause significant adverse health effects associated with a threshold mechanism of action in human exposure for a lifetime.	Because there are only a limited number of promulgated standards for contaminants in water, EPA Risk Reference Doses will be used to characterize risks due to non-carcinogens in ground water, as necessary, during the five-year reviews.
EPA Human Health Assessment Group Cancer Slope Factors (U.S. EPA 1999)	To Be Considered	Carcinogenic effects presented the most up-to-date information on cancer risk potency derived from EPA’s Human Health Assessment Group.	Because there are only a limited number of promulgated standards for contaminants in water, EPA Cancer Slope Factors will be used to characterize risks due to carcinogens in ground water, as necessary, during the five-year reviews.
State Applicable or Relevant and Appropriate Requirements			
Maine Department of Human Services (Rules Relating to Testing of Private Water Systems for Potentially Hazardous Contaminants (10-144A Code of Maine Regulations Chapter 233, Appendix C)	Relevant and Appropriate	Maximum Exposure Guidelines include health advisories, which are maximum allowable concentrations of specific contaminants in drinking water.	Under Alternative 2, the selected remedy, the Maximum Exposure Guidelines will be attained through institutional controls and long-term monitoring.
Maine Hazardous Waste Rules relating to Performance Standards for Establishing, Constructing, Altering, and Operating Certain Types of Hazardous Waste Units (06-096 CMR 854)	Relevant and Appropriate	This requirement outlines the State of Maine’s rules relating to establishing, constructing, altering, and operating certain types of hazardous waste units.	Under Alternative 2, the selected remedy, the Maximum Exposure Guidelines will be attained through institutional controls and long-term monitoring.
Maine Department of Human Services Rules Relating to Drinking Water (10-144E, Chapters 231-233)	Relevant and Appropriate	Maine’s primary drinking water standards are similar to Federal Maximum Contaminant Levels as drinking water standards under the Maine Safe Drinking Water Rules. When State standards are more stringent than Federal standards, and have been legally and constantly applied, the State levels shall be used.	Under Alternative 2, the selected remedy, State drinking water standards that are more stringent than Federal standards will be attained through institutional controls and long-term monitoring.
Source: U.S. Environmental Protection Agency (EPA). 1999. Integrated Risk Information System On-Line Database Maintained in Toxicology Data Network by the National Library of Medicine Bethesda, Maryland. EPA Environmental Criteria and Assessment Office, Cincinnati.			

Appendix C

Declaration of Concurrence by Maine Department of Environmental Protection



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

MARTHA KIRKPATRICK
COMMISSIONER

September 26, 2002

Captain Robert S. Winneg, Commanding Officer
Naval Air Station, Brunswick
US Department of Navy
437 Huey Drive Box 33
Brunswick, Maine 04011-5008

Re: Record of Decision-Site 7
Naval Air Station, Brunswick, Maine

Dear Captain Winneg:

The Maine Department of Environmental Protection (MEDEP) has reviewed the Final Record of Decision (ROD) for Site 7, (September 2002) at Naval Air Station, Brunswick, Maine. Based on the review of the Final Record of Decision, MEDEP concurs with the Navy's selected remedy of Institutional Controls with Groundwater Monitoring as outlined in Section XI, which is summarized below.

Institutional Controls with Monitoring is the selected remedy for Site 7, the Old Acid Caustic Pit. No active source of contamination has been found and monitoring results to date do not show significant offsite migration of the contaminants above the Federal Maximum Contaminant Levels or the State Maximum Exposure Guidelines. However, manganese and cadmium are above their respective Maximum Exposure Guidelines thresholds in groundwater; Polycyclic Aromatic Hydrocarbons (PAHs) and dichlorodiphenyltrichlorethane (DDT) are evident in shallow soil (0-2 feet) at levels that could pose a future potential residential risk.

The major components of the Institutional Controls with Groundwater Monitoring include:

- Develop and implement institutional controls to prevent human contact with and use of the soil and groundwater at the site;
- Develop a Long Term Monitoring Program and conduct long term monitoring of groundwater to monitor contaminant migration, contaminate levels and natural attenuation; and

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- Five year reviews.

It is MEDEP's understanding that the United State's Navy will provide a draft version of the Institutional Controls and Long Term Monitoring Plan for review and comment as part of the Remedial Action Plan as required under the Federal Facility Agreement. The final soil and water restrictions to be incorporated into the Naval Air Station, Brunswick Operating Instructions and the Long Term Monitoring Plan will be part of the Administrative Record for Site 7.

The State's concurrence of the selected remedy, as described above, should not be construed as the State's concurrence with any conclusion of law or finding of fact, which may be set forth in the ROD or site listed above. The State reserves any and all rights to challenge any such finding of fact or conclusion of law in any other context.

This concurrence is based on the State's understanding that the MEDEP will continue to participate in the Federal Facilities Agreement and in the review and approval of operational, design, and monitoring plans as allowed under the Federal Facilities Agreement.

MEDEP looks forward to working with the Department of the Navy and the Environmental Protection Agency to resolve the environmental problems posed by this site. If you need additional information, do not hesitate to contact Claudia Sait at (207) 287-7713.

Respectfully,



David Lennett
Director, Bureau of Remediation and Waste Management

Cc: File
Mark Hyland-MEDEP
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