

N60087.AR.002348
NAS BRUNSWICK
5090.3a

INSTRUCTION 5090.1C RESTRICTION ON SOIL EXCAVATION ACTIVITIES,
GROUNDWATER USE AND REMEDIAL COMPONENT DISTURBANCE NAS BRUNSWICK
ME
03/05/2008
NAS BRUNSWICK



DEPARTMENT OF THE NAVY
NAVAL AIR STATION
BRUNSWICK, MAINE 04011-5000

IN REPLY REFER TO
NASBINST 5090.1C
N8B
5 March 2008

NAS BRUNSWICK INSTRUCTION 5090.1C

From: Commanding Officer

Subj: RESTRICTION ON SOIL EXCAVATION ACTIVITIES, GROUNDWATER
USE, AND REMEDIAL COMPONENT DISTURBANCE

Ref: (a) DUSD (ES/CL) Memorandum, "Policy on Land Use Controls
Associated with Environmental Restoration
Activities," 17 Jan 2001
(b) NASBINST 5090.12A, "Environmental Management"
(c) Standard Operating Procedure #N353AD.001, "Facilities
Contracting Process," 16 Sep 2004
(d) Federal Facility Agreement As Amended, Oct 1990
(e) Record of Decision for Remedial Action at Sites 1 and
3, Jun 1992
(f) Explanation of Significant Differences at Sites 1 and
3, Sep 1994
(g) Record of Decision for Site 2, Sep 1998
(h) Record of Decision for Site 7, Sep 2002
(i) Record of Decision for Site 9, Sep 1999
(j) Record of Decision for No Further Action at Sites 4,
11, and 13, and a Remedial Action for the Eastern
Plume, Feb 1998
(k) Explanation for Significant Differences for the
Record of Decision for the Remedial Action for
Eastern Plume, Dec 2000

Encl: (1) Hazardous Waste and Petroleum Sites on NAS Brunswick
and Topsham Annex, Maine
(2) Figures of Soil Excavation/Disturbance and
Groundwater Use Restriction Areas on NAS Brunswick
and Topsham Annex, Maine
(3) NASB Excavation Clearance Permit, 26 Dec 2007

1. Purpose. To provide information on the location of hazardous waste and petroleum sites on NAS Brunswick and Topsham Annex, to enact internal land use restrictions in the form of administrative controls on soil excavation/disturbance and/or groundwater use activities to prevent human exposure to hazardous chemicals, and to protect remedial components (i.e., components of investigations and remedial actions), including but not limited to monitoring wells and landfill caps. Accordingly, this instruction specifies review and coordination procedures required for all work requests, service calls, and projects. This instruction is intended to enact institutional controls that are legally specified in the Federal Facility

Agreement, Records of Decision, consensus statements, and other documents signed by the Navy in teamwork with the U.S. Environmental Protection Agency (EPA) and Maine Department of Environmental Protection (MEDEP), including those provided as references (d) through (k). This instruction also identifies interim restriction zones for other areas that require additional investigation.

2. Scope. This instruction applies to all military and civilian personnel assigned to NAS Brunswick and to all other personnel working under contract or agreement with the Navy on NAS Brunswick and Topsham Annex. This instruction pertains to use of or contact with impacted soil (e.g., excavation) and groundwater (e.g., pumping and reuse), particularly at hazardous waste and petroleum sites located on NAS Brunswick and Topsham Annex. Review and coordination procedures for all projects are specified in this instruction.

3. Cancellation. NASBINST 5090.1B

4. Discussion

a. NAS Brunswick is currently on the Environmental Protection Agency's Superfund list of hazardous waste sites, formally known as the National Priorities List (NPL). The Navy, in coordination with the EPA and MEDEP, has conducted comprehensive investigations for most of the affected areas. Remedial actions have been completed or are in progress for most of these areas. Hazardous contaminants at the designated areas currently do not present an unacceptable risk to human health or the environment unless they are excavated, pumped, or otherwise disturbed. As specified, no soil excavation/disturbance, groundwater use, or disturbance of remedial components is allowed for the specific areas listed in enclosure (1) and shown in enclosure (2) without express written approval by the Public Works Officer and the Environmental Director prior to the start of those activities. To the extent that the Federal Facilities Agreement or an approved Record of Decision for a specific site requires coordination with the EPA or MEDEP prior to soil excavation/disturbance or groundwater use, the Public Works Officer, Environmental Director, or other cognizant official shall ensure that such coordination is completed prior to authorizing such use. These activities will be restricted, as necessary, within the specified areas for as long as it presents an unacceptable risk to human health and the environment and for ensuring the proper and successful operation of remedial actions

being implemented in response to requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Accordingly, coordination with and review by the EPA and MEDEP will be required for these activities with prior written approval also being required in some cases per the Federal Facility Agreement and Records of Decision. Coordination with the EPA and MEDEP is required for all projects with excavation greater than 5 feet below ground surface in developed areas where no institutional control boundaries or interim restriction zones are presented in this instruction.

b. Work can be safely conducted on a hazardous waste or petroleum site, but proper planning, coordination, preparation, and safety measures must be accomplished in accordance with federal and state laws. Hazardous waste site work requires strict adherence to a Site-Specific Health and Safety Plan, proper training of site workers, correct use of personal protective equipment by site workers, assessment of risks to abutting/downwind/downgradient property users, proper management of any generated waste, and other protective actions. Each situation is unique and requires project-specific planning.

c. Land use controls shall be incorporated into any potential leases of NAS Brunswick or Topsham Annex properties that contain soil and/or groundwater contamination from hazardous waste or petroleum sites and that contain components of remedial investigation or remedial action. Lease documents shall contain legal and administrative mechanisms that incorporate a review and approval process. Future land use activities by the lessee should remain compatible with these restrictions to adequately protect human health and the environment. For transfers of contaminated property to other Federal agencies or out of Federal control, property transfer actions shall comply with DoD and Navy policies as well as CERCLA, Federal Facilities Agreement, and Records of Decision. Appropriate land use provisions will be incorporated in transfer documentation. Notification to and coordination with the EPA and MEDEP will be required for these transfer actions.

5. Action

a. Any NAS Brunswick department or tenant command planning a project that requires soil excavation/disturbance, groundwater use, or disturbance of a remedial component within any of the specific areas identified in enclosures (1) and (2) must obtain

the express written permission of the Public Works Officer and the Environmental Director. This permission must be obtained prior to completion of project planning work and prior to the commencement of any use of or contact with impacted soil (e.g., excavation), groundwater (e.g., pumping and reuse), or remedial components (e.g., monitoring wells and landfill caps). Prior to issuing express written permission, the Public Works Officer and the Environmental Director shall ensure that any requirements for coordination with, review by, and approval from the EPA and MEDEP are met, as appropriate. Coordination is also required for all projects with excavation greater than 5 feet below ground surface in developed areas where no institutional control boundaries or interim restriction zones are presented in this instruction.

b. During the early planning phase for all projects, all NAS Brunswick departments and tenant commands must complete the National Environmental Policy Act (NEPA) checklist contained in Chapter 11 of reference (b). This will facilitate NEPA review for all projects and will ensure compliance with applicable land use restrictions, including those identified in this instruction. Chapter 12 of reference (b) also incorporates environmental coordination requirements for soil and groundwater disturbance, as specified in this instruction.

c. All work requests, service calls, and projects are submitted to the Public Works Department. All project requests and site approvals must be evaluated to ensure consistency with land use restrictions. The Environmental Department must review all requests, plans, specifications, and drawings as early as possible during the planning and design phases for each project. Follow-on coordination with the Environmental Department must be conducted during all phases of design and construction to ensure prompt communication of any changes in project scopes. Reference (c) is used by the Public Works Department to facilitate this review process.

d. The approval process for all work at both contaminated sites and non-contaminated areas is initiated by completion of an Excavation Clearance Permit (shown in enclosure (3)) through the Public Works Department. The computerized mapping system (i.e., CAD/GIS maps) must contain institutional control boundaries and interim restriction zones to assist with this process. All Excavation Clearance Permits must be coordinated with and signed by the Environmental Restoration Program Coordinator. Express written permission for work at specific

5 March 2008

areas identified in enclosures (1) and (2) must be provided by the Public Works Officer and the Environmental Director prior to the start of work. Coordination is also required for all projects with excavation greater than 5 feet below ground surface in developed areas where no institutional control boundaries or interim restriction zones are presented in this instruction. The Environmental Department must be contacted in a timely manner if groundwater is encountered during any project.

e. The feasibility of utilizing the municipal water distribution system must be evaluated for all projects requiring water for potable and non-potable purposes at NAS Brunswick. Any proposed installation of groundwater wells (not to include groundwater monitoring wells or extraction wells used for environmental monitoring or remediation) requires evaluation and coordination. In the event that groundwater well installation is proposed, the EPA and MEDEP will be notified during the planning and design phase of the project. Additional time must be incorporated into project schedules to allow for review, discussion, coordination, and concurrence by the EPA and MEDEP. Adverse impacts to any remedy for a hazardous waste or petroleum site by the proposed well must be adequately addressed by the action proponent prior to the commencement of well installation. The evaluation of these groundwater impacts, which could require groundwater modeling, must be included in the project scope. The requirements for groundwater impact evaluation will be determined in a cooperative effort amongst the Navy, EPA, and MEDEP.

f. Because work at contaminated sites is inherently more complex due to the safety and planning issues involved, additional time is required for coordination with and in some circumstances, concurrence by the EPA and MEDEP before work can proceed. Requesting departments and tenant commands must prepare and follow a Site-Specific Health and Safety Plan that complies with requirements of 29 CFR 1910.120.

g. This instruction will be reviewed by the Environmental Restoration Program Coordinator as conditions warrant but at least on an annual basis.



E. G. WOMACK

Distribution:
NASBINST 5605.1V, List I

5 March 2008

**HAZARDOUS WASTE AND PETROLEUM SITES
ON
NAS BRUNSWICK & TOPSHAM ANNEX, MAINE**

**SOIL EXCAVATION, GROUNDWATER USE,
AND REMEDIAL COMPONENT RESTRICTION AREAS**

General Notes

For sites with extensive evaluation, groundwater flow directions as well as maximum and minimum groundwater depths are shown on site-specific figures for reference. All boundaries are approximate. Please refer to the instruction for coordination procedures concerning projects that involve use of or contact with soil (e.g., excavation) or groundwater (e.g., pumping and reuse). Any proposed soil excavation/disturbance, groundwater use, and remedial component disturbance must be coordinated with the Environmental Department. If groundwater is encountered during any project, the Environmental Department must be contacted in a timely manner.

Overall Site (Figure A)

All sites and areas of concern discussed in this section and shown in the attached figures are depicted in Figure A. This figure allows for a concise summary of soil excavation/disturbance and/or groundwater use restriction areas at NAS Brunswick and Topsham Annex. Please note that specified institutional control areas and interim restriction zones can be for soil and/or groundwater. Groundwater use is restricted in the Eastern Plume restriction zone as well as for some sites outside of this zone.

Military Munitions Response Program Areas of Concern (Figure A)

Four unexploded ordnance areas of concern include the Quarry Site, Former Munitions Bunker, Machine Gun Bore Sight, and the Skeet Range. The Quarry Site is located near the western boundary of the base with the Former Munitions Bunker being located west of the runway area. The Machine Gun Bore Sight and the Skeet Range are essentially co-located south of Neptune Drive and east of Orion Street. A Preliminary Assessment has been conducted at these areas of concern. While further investigation will be conducted for these areas of concern, soil excavation/disturbance and groundwater use restrictions should be considered in these areas.

Eastern Plume (OU5) (Figure 1)

Groundwater use is restricted for the Eastern Plume, a section of groundwater located mostly within the Weapons Storage Area (which has restricted access) and the Picnic Pond Recreational Area. The plume is contaminated with chlorinated solvents and chlorinated degradation by-products. The Groundwater Extraction and Treatment System remediating the Eastern Plume consists of the plant at Building 50 as well as an extraction well, infiltration gallery, and piping system shown on Figure 1. The Eastern Plume is located within the area that is bounded on the west by Orion Street, on the north by Huey Drive and the Picnic Pond, on the east by the base boundary, and on the south by Harpswell Cove. This groundwater restriction zone is shown on Figure 1. Soil excavation restrictions must be considered in the Eastern Plume area due to potential exposure to contaminants as well as the treatment system located in the area.

Sites 1 & 3 (OU1) - Orion Street Landfill North and Hazardous Waste Burial Area (Figure 2)

These sites are inactive landfills co-located in the Weapons Storage Area, which has restricted access. The sites are bounded by the landfill perimeter road on the north and east and by Mare (Mere) Brook on the west and south. Soil excavation/disturbance is restricted anywhere on or adjacent to the landfill cap and slurry wall as well as within the landfill's supporting stormwater management ditches and retaining basin. This area is shown on Figures 1 and 2. No activity that could damage the remedial components (i.e., landfill cap, slurry wall, extraction wells and piping, and stormwater management system) is allowed except for those necessary for investigative, remedial, or maintenance purposes. Groundwater use is restricted at Sites 1 and 3, as it is located within the Eastern Plume restriction zone. This zone consists of the large area of the base that is bounded on the west by Orion Street, on the north by Huey Drive and the Picnic Pond, on the east by the base boundary, and on the south by Harpswell Cove. This Eastern Plume restriction zone is depicted in Figure 1. The monitoring wells with recent groundwater exceedances at this site are shown on Figure 2.

Site 2 (OU7) - Orion Street Landfill South (Figure 3)

This site is an inactive landfill located in the Weapons Storage Area, which has restricted access. The site is bounded by Orion Street on the west, by the New Gurnet Road on the south, and by

Mare (Mere) Brook on the north and east. Soil excavation/disturbance is restricted anywhere on or adjacent to the landfill cap and within the basin of the landfill area, as shown on Figures 1 and 3. No activity that could damage the remedial components (i.e., landfill cap) is allowed except for those necessary for investigative, remedial, or maintenance purposes. In addition, consideration must be given for soil excavation/disturbance in the area north of the known landfill area, as further investigation will be conducted in that area. Groundwater use is also restricted for Site 2 since the site is located within the Eastern Plume restriction zone, as shown on Figure 1. The monitoring wells with recent groundwater exceedances at this site are shown on Figure 3.

Site 4 (OU5) - Acid/Caustic Disposal Pit (Figure 4)

This site is a former acid/caustic pit located in the new Public Works complex on the corner of Huey Drive and Orion Street. The site is located under the eastern portion of the Building 584 foundation. Halocarbon soil gases were detected in the subsurface around Building 584 during the late 1980s. Soil excavation is restricted for soils that are located immediately beneath the eastern foundation of Building 584, as shown on Figure 4. Additional consideration and coordination will be required prior to any building demolition activities. Groundwater use is restricted in this area, as it is located within the Eastern Plume restriction zone shown on Figure 1.

Site 7 (OU7) - Old Acid/Caustic Disposal Pit (Figure 5)

This site is an old acid caustic pit located in a clearing located northeast of the former Old Fuel Farm, in the northeast corner of the base. The site is bounded by wooded areas on the west, north, and east sides and by a dirt access road and the northeast corner of the former Old Fuel Farm to the south. The radius of the site is 225 feet from the boundary marker located near the former monitoring well, MW-NASB-094. The contaminants of concern at this site include inorganics in groundwater and pesticides and PAHs in shallow soils. Soil excavation/disturbance and groundwater use are restricted within the central area shown on Figure 5. The monitoring wells with recent groundwater exceedances at this site are shown on Figure 5.

Site 9 (OU6) - Neptune Drive Disposal Area (Figure 6)

This site is an inactive ash landfill/dump area located in the community support area of the base. The ash landfill/dump was

located beneath the former Bachelor Enlisted Quarters (former Buildings 216-220), and a former solvent burning/disposal area was reportedly located in the area near the Galley (Building 201). The site is bounded by Orion Street on the west, by the former BEQ (former Buildings 212-215) on the north, by the Athletic Field House (Building 211) and Theater Sewage Lift Station (Building 538) on the west, and by the upper impoundment pond to the south. The primary contaminants of concern for groundwater are volatile organic compounds, particularly vinyl chloride. In 2006, an ash landfill/dump removal project commenced within the former BEQ area of Site 9. Further investigation will be conducted for southern landfill boundary delineation as well as for the area south of Building 201. Soil excavation/disturbance, ash landfill disturbance, and groundwater use are restricted, as depicted on Figure 6. The monitoring wells with recent groundwater exceedances at this site are shown on Figure 6. A portion of the site (located south of Neptune Drive) is located within the Eastern Plume restriction zone shown on Figure 1.

Site 11 (OU5) - Fire Training Area (Figure 7)

This site is a former Fire Training Area located across from the new Public Works complex on Huey Drive. The infiltration gallery associated with the Groundwater Extraction and Treatment System (Building 50) is currently located on this site. To protect the infiltration gallery and piping, soil excavation/disturbance is restricted in this area, as shown on Figure 7. Groundwater use is restricted for the Site 11/infiltration gallery area since the area is located within the Eastern Plume restriction zone shown on Figure 1.

Site 12 - Explosive Ordnance Disposal Area (Figure 8)

This site is a deactivated explosive ordnance disposal area located in the southeastern end of the base within 4,300 feet of Building 539 in the Weapons Storage Area, which has restricted access. The 14-acre area is bounded by wooded areas on the east at the base property line and by wooded areas to the north, south, and west. Low levels of inorganics associated with explosive material were detected in soil samples taken in the early 1990s. Additional investigation is required for this area. The area could have inherent explosive safety concerns, resulting in soil excavation/disturbance and groundwater use restrictions. Accordingly, soil excavation/disturbance and groundwater use are restricted for Site 12, as shown on Figure 8.

**Site 13 - Defense Reutilization and Marketing Office Area
(Figure 9)**

This site is a former Defense Reutilization and Marketing Office Area located in the new Public Works complex on the corner of Huey Drive and Orion Street. The site is located immediately south of Building 584 and Site 4. Pesticides and fuel-related contaminants were detected in the soils during the late 1980s at concentrations below remedial action levels. In preservation of pavement that limits any potential exposure, soil excavation is restricted in the paved parking lot located in this area, as depicted in Figure 9. Groundwater use is restricted for this area since it is located within the Eastern Plume restriction zone shown on Figure 1.

Site 17 - Former Pesticide Storage Facility (Figure 10)

This site is a former pest control shop area (former Building 95) located on the northeast corner of the base, one block north of Fitch Avenue. The site is located south of the new Military Dog Kennel (Building 103) and is bounded to the northeast by the former Old Fuel Farm, to the southeast by Avenue B, and to the southwest to northwest by Fifth Avenue. Pesticides are the primary contaminants of concern at this site. Additional investigation is required at this site. Soil excavation/disturbance is restricted within the area (which includes the tree stand area to the north), as depicted in Figure 10. Groundwater use restrictions should also be considered in this area due to past pesticide exceedances. No monitoring wells had recent groundwater exceedances at this site, as shown on Figure 10. This area also lies within the Old Navy Fuel Farm restriction zone.

Old Navy Fuel Farm (Figure 11)

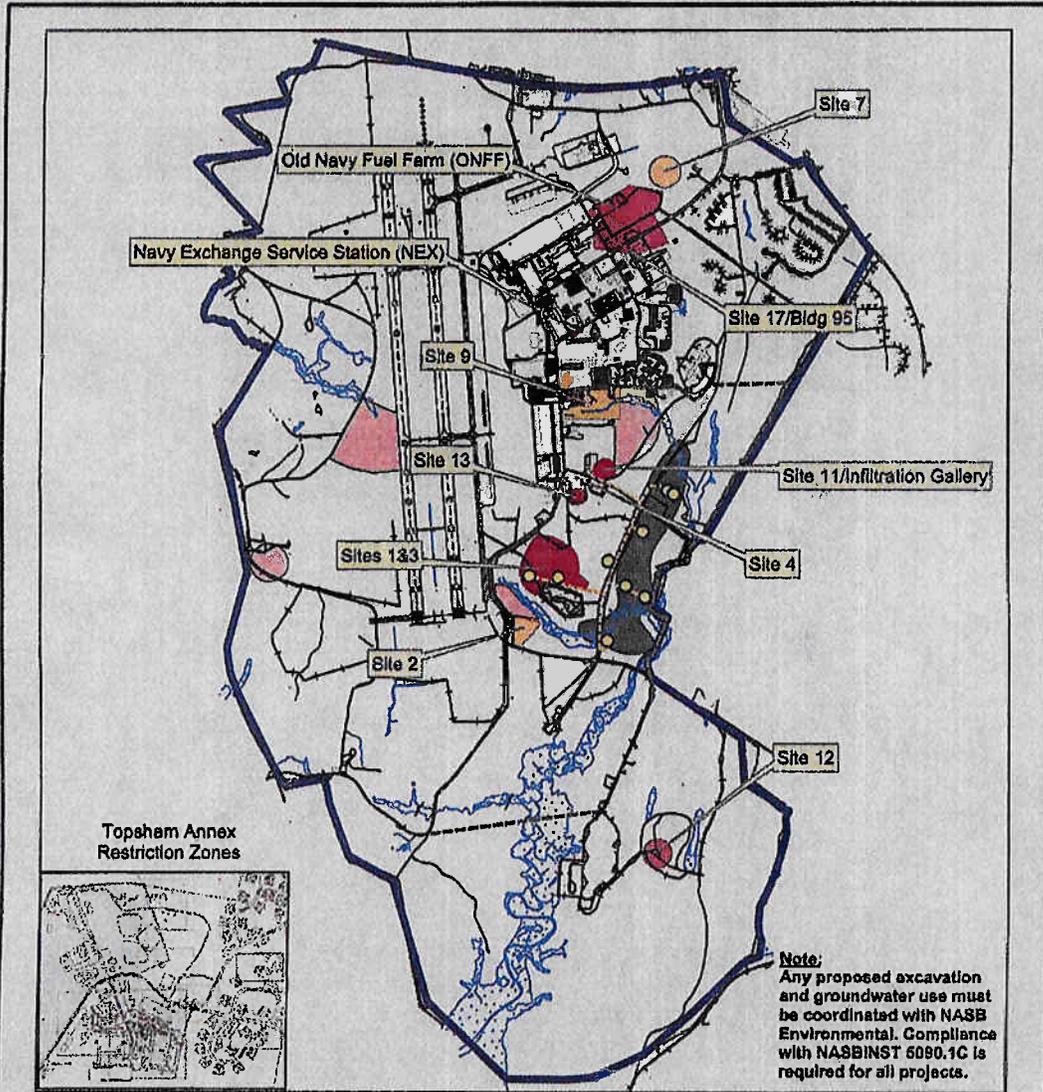
This site is a former fuel farm located in the northeast portion of the base. The site is bounded on the south by Fitch Avenue, on the west by Sixth Street, and by undeveloped land to the north and east. Approximately 15,000 tons of petroleum-contaminated soils were removed in 2000, and two new baseball fields were constructed on the site in 2002/2003. Alternate land use at this site will need to consider potential residual petroleum-related contamination. Groundwater use restrictions should also be considered in this area due to petroleum-related exceedances. The monitoring wells with recent groundwater exceedances at this site are shown on Figure 11.

Navy Exchange (NEX) Service Station, Building 538 (Figure 12)

This site is a gasoline station located north of Burbank Avenue and west of the Navy Exchange store (Building 11). Releases from former underground storage tank systems resulted in petroleum-contaminated soils and groundwater in the tank and dispenser areas and in the section of Burbank Avenue between the station and Fleet and Family Service Center (Building 27). Petroleum contamination may have migrated into the backfill soils of utility trenches and along utility lines. Accordingly, worker safety precautions are necessary for soil excavation work on utility lines in the area. A denitrification-based biodegradation project is currently being conducted at the site. Soil excavation/disturbance is restricted within the area depicted in Figure 12. Groundwater use restrictions should also be considered in this area due to petroleum-related exceedances. The area of known groundwater threshold exceedances is also shown on Figure 12.

Topsham Annex (Figure 13)

Several areas of soil and groundwater contamination at Topsham Annex have been and continue to be investigated. General areas of investigation are shown on Figure 13. In 2006, focused soil removal actions were completed for the Buildings 337 and 338 area (Area A) as well as for the Building 1108 and 1099/1114 housing areas (Areas D and E). Further investigation was completed for the Building 369 (Area B) and TOP-1 areas in 2006. Petroleum-related contaminants and inorganics are the primary contaminations of concern at most of these sites. Locations of soil and groundwater threshold exceedances at Topsham investigation areas are depicted in Figure 13. Soil excavation/disturbance and groundwater use restrictions should be considered in these areas.



Coordinate system	NAD 1983, UTM Zone 19N		
Notes:	Please note that restriction zones/institutional controls (IC) can be for groundwater and/or soils. Further investigation is required at Site 2, 7, 9, 12, 17 and Topsham Annex.		
Date	26-MAR-2007	Rev.	App. By
SD	C. Guido		
CD			
AB			



- Legend**
- Extraction Well
 - GWETS Piping (includes interim soil restriction zone)
 - Base Boundary
 - Eastern Plume IC per ROD
 - Eastern Plume (Sept 05)
 - Area of Further Investigation
 - Soil Restriction Zone (Interim)
 - IC Boundary per ROD
 - ~ Stream & Wetland

Figure A

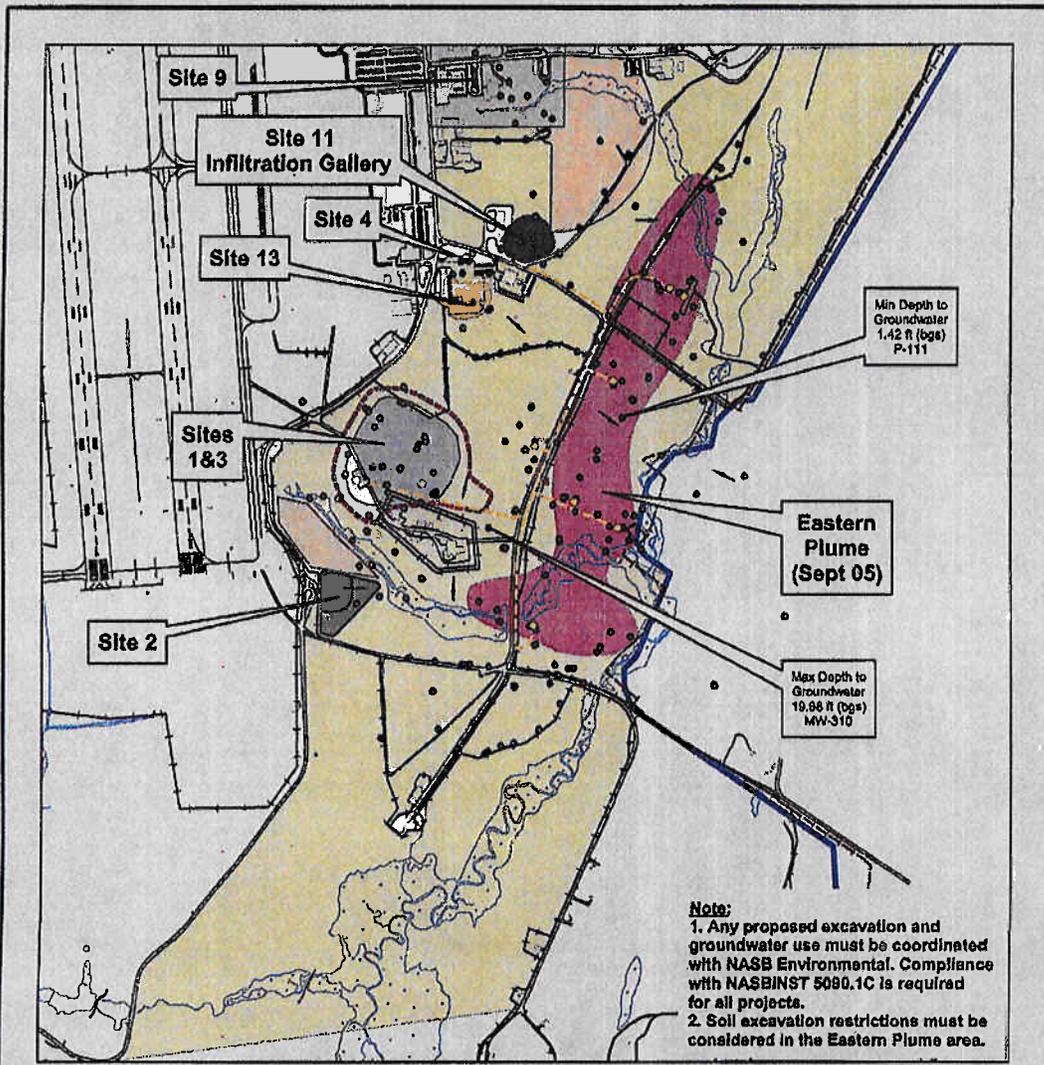
Overall Site

Naval Air Station
Brunswick, Maine

EGC Incorporated, Inc.
CADDY DR-107, Brunswick, ME
MacDrawings/RunDraw_IC Plot
1 700 1,100 2,500
Feet

Figure A

Enclosure (2)



Coordinate system	NAO 1983, UTM, Zone 18N		
Notes	Sites represent approximate site boundaries. Extent of Eastern Plume based on accordance of Maine MEGMCL. Depth to groundwater in feet below ground surface (bgs). Groundwater depth calculated using Spring 2008 gauging data.		
Date	28-MAR-2007	Rev.	App. By
CR	C. Ouldo		
CB			
AR			



- Legend**
- Extraction Well
 - Sample Location
 - GWETS Piping (includes interim soil restriction zone)
 - Groundwater Flow Direction
 - Base Boundary
 - Stream & Wetland
 - ▭ Sites 1 & 3 Soil/Landfill Restriction Zone (Interim)
 - ▭ Area of Further Investigation
 - ▭ Eastern Plume Groundwater Restriction Zone (IC, per ROD)

Figure 1

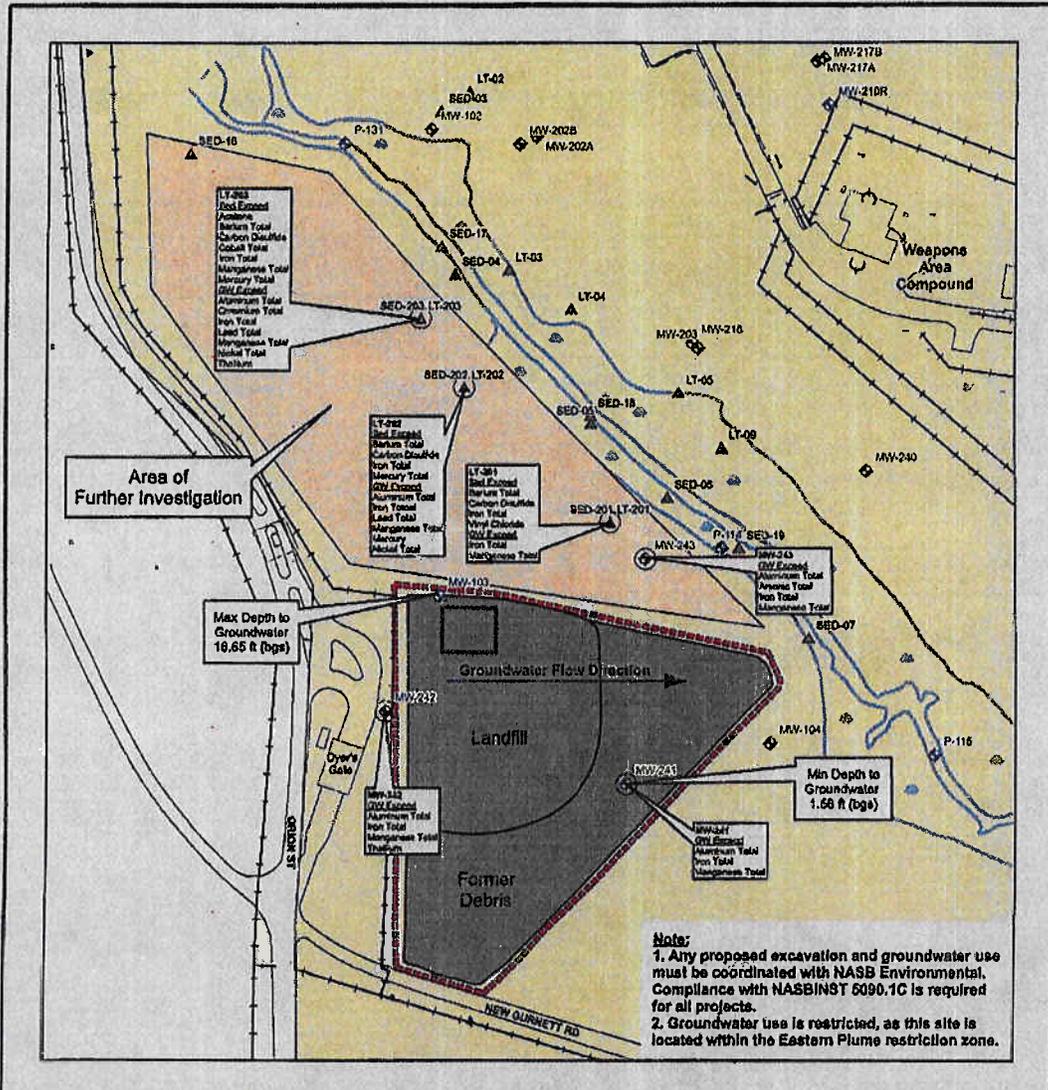
Eastern Plume

Naval Air Station
Brunswick, ME

0 300 600 1,200 Feet

Figure 1

Enclosure (2)



Coordinate system	NAD 1983, UTM Zone 18N			
Notes	<p>1) Numerical accuracy based on Airphoto, Coburn, Maguire, Potomac and Boston selected features analyzed in GIS and reclassified based on per DWRP (Jan 08) 31 Data from Dec 79. 2) Groundwater monitoring based on coordinates of Pot. Area only. 3) DWRP (Jan 08) 31. 4) Equipment specifications based on coordinates of pot. area. 5) Groundwater monitoring system for Surface Water. 6) Depth to groundwater calculated in this report based on data from 2004 water gauging data.</p>			
Date	26-MAR-2007	Rev.		App. By
DB	C. Guido			
CA				
AR				



Legend

- Sept 05 Sample Location
- ◆ Monitoring Well
- ▲ Sample Location
- Fenceline
- ▨ Soil/Landfill Restriction Zone (IC, per ROD)
- ▩ Approx. Location of Old Incinerator
- ▭ EP Groundwater Restriction Zone (IC)

Figure 3

Site 2

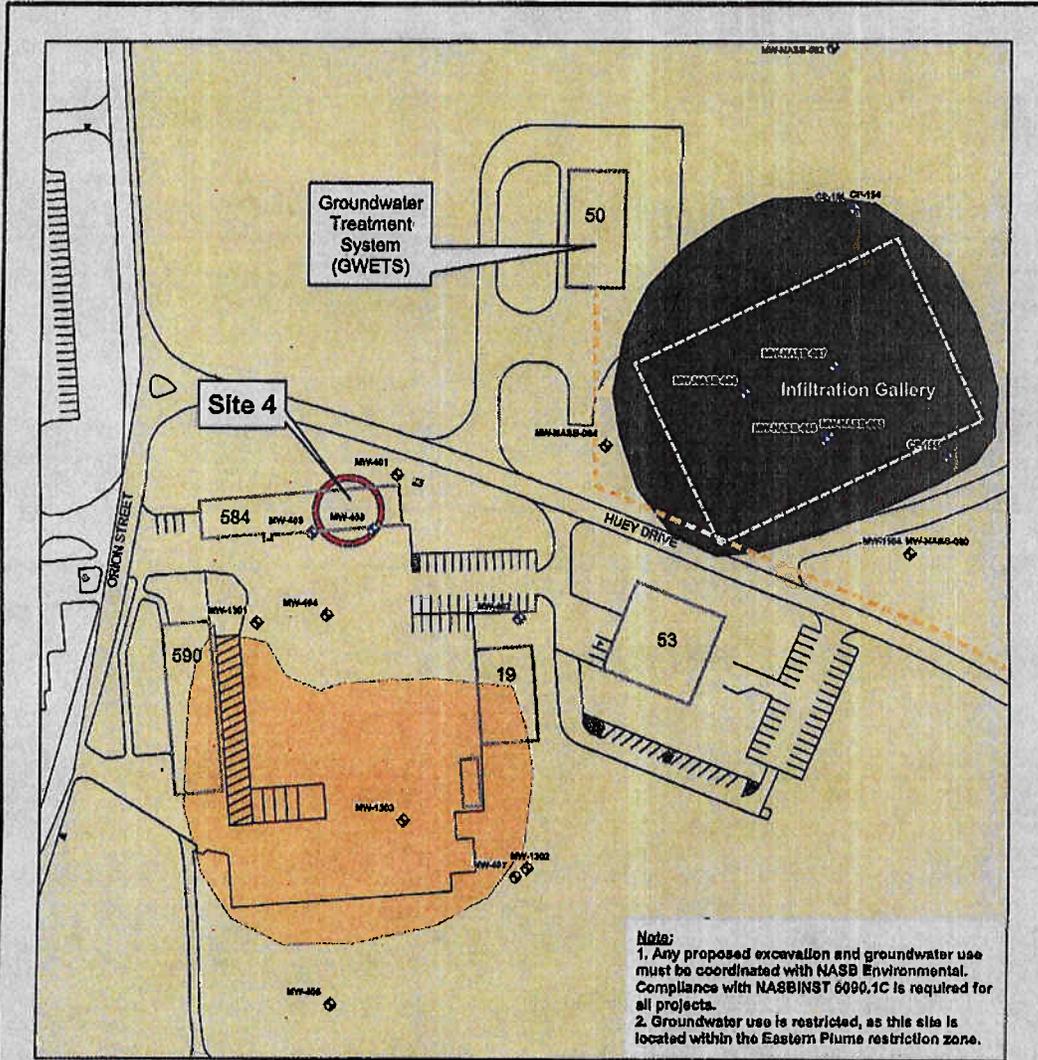
Naval Air Station
Brunswick, Maine

EGC, Brunswick, ME
G:\NAVY\50901077_Brunswick\50901077_50901077_01.dwg

0 50 100 200 Feet

Figure 3

Enclosure (2)



Coordinate system	NAD 1983, UTM, Zone 18N		
Notes	Site 4 is approximate location of old subsurface pit in eastern building foundation. IC boundary is for further assessing the site if building is demolished. This is a site of No Further Action. IC boundary was not included in the selected remedy, per Site 4 ROD.		
Date	26-MAR-2007	Rev.	App. By
DD	C. Guide		
CB			
AB			



- Legend**
- ◆ Sample Location
 - GWETS Piping (includes interim soil restriction zone)
 - ▭ Building
 - ▬ Road
 - ▭ Soil Restriction Zone (interim)
 - ▭ Site 11/Infiltration Gallery (Approx. Location)
 - ▭ Site 13 (Approx. Location)
 - ▭ Eastern Plume Groundwater Restriction Zone (IC, per ROD)

Figure 4

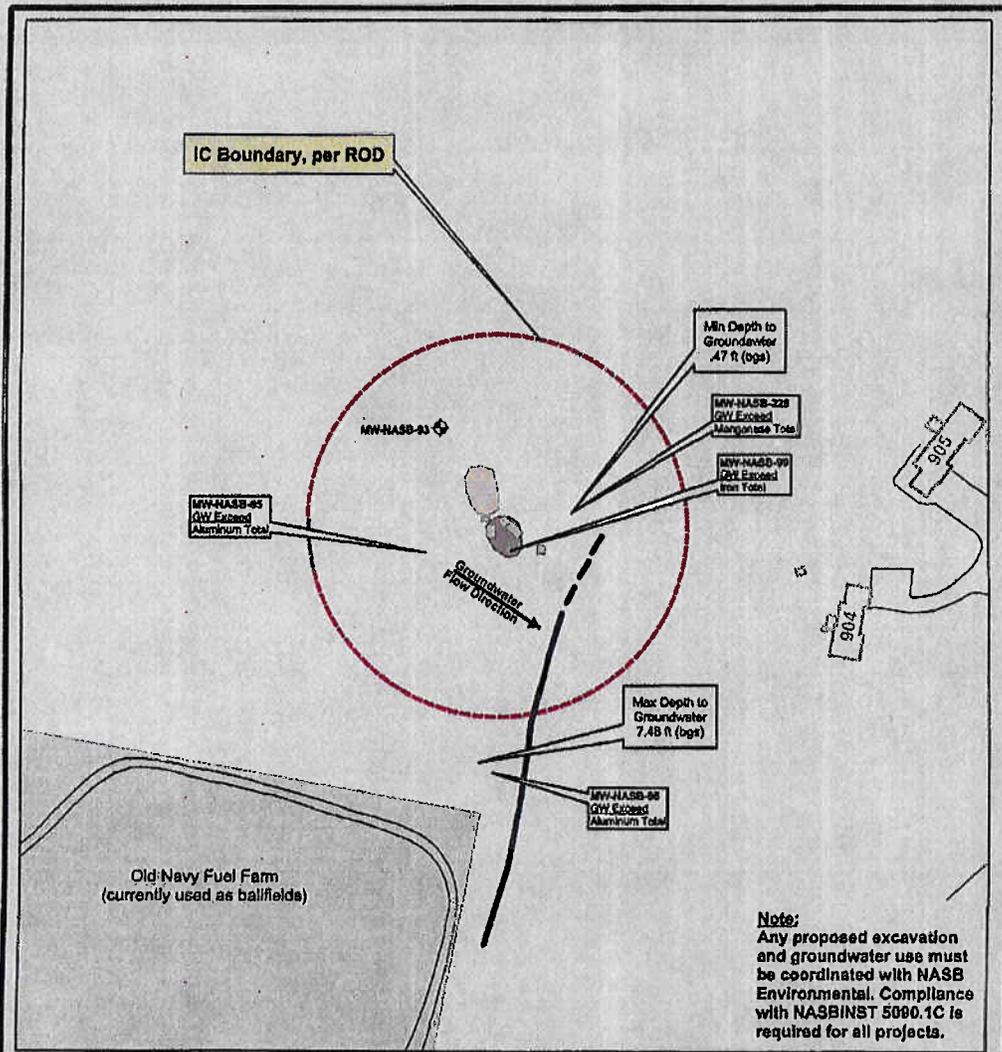
Site 4

Naval Air Station
Brunswick, Maine

100 Montross St
Brunswick, ME 04002
Tel: 207.739.1234
Fax: 207.739.1235

Figure 4

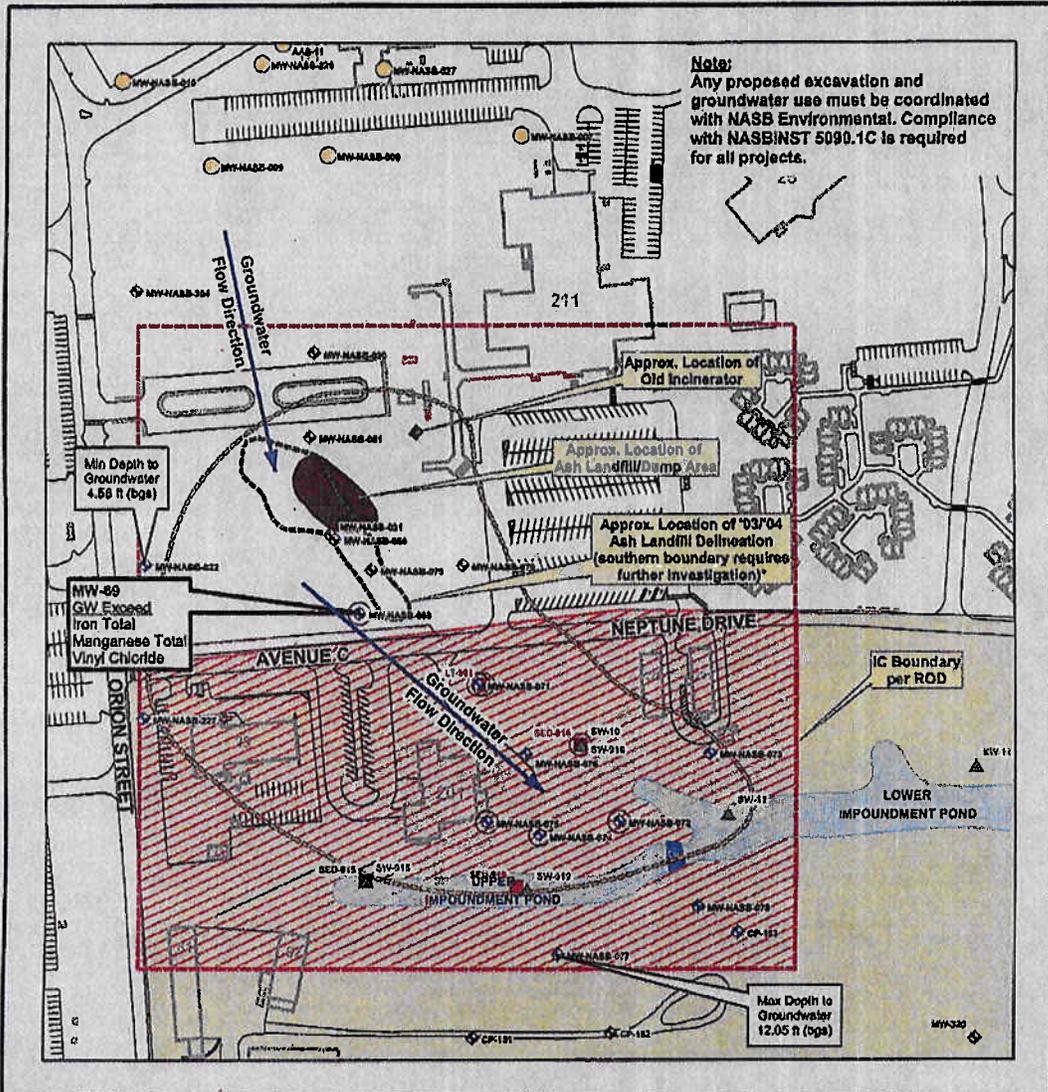
Enclosure (2)



Coordinate system NAD 1983, UTM, Zone 18N		Area of Detail 	Legend <ul style="list-style-type: none"> ○ IC Boundary Marker ⊕ Monitoring Well ▲ Piezometers ● Stream Gauge — Drainage Ditch □ Approximate Area of Old Caustic Pit ■ Soil Removal Area ■ Area of Cadmium Groundwater Exceedence (2001) ■ Soil/Groundwater Restriction Zone (IC, per ROD) 	Figure 5	
Notes Refer to IC Boundary Marker in former location of monitoring well MW-NASB-83 & MW-NASB-228. Monthly sampling interval is during October, when observed. Data from Sept 05. All wells were surveyed. Further investigations will be conducted as the site. Maine MDEP&L, letters were used to determine circumstances. Depth to groundwater measured in feet below ground surface (bgs). Groundwater depth calculated using Spring 2006 water gauging data.				Site 7 Naval Air Station Brunswick, Maine	
Date: 20-MAR-2007 DB: C. Guddo CB: AB:	Rev: Date: App. By:	C:\NAVY_GIS\GIS001_Brunswick_Site7\MapDocuments\Site7_IC.mxd 			

Figure 5

Enclosure (2)



Coordinate system	NAD 1983, UTM Zone 19N		
Notes	<p>Ash landfill removal project is in the process of being completed. Any areas of ash that are not removed by the end of 2008 will be removed by the end of 2009. Remediation of ash areas is being completed by the end of 2008. Remediation of ash areas is being completed by the end of 2008. Remediation of ash areas is being completed by the end of 2008.</p>		
Date	26-MAR-2007	Rev.	App. By
DB	C. Oulda		
CB			
AB			



- Legend**
- NEX Sample Location
 - Sept 06 Sample Location
 - ◇ Monitoring Well
 - ▲ Surface Water Sample Location
 - Sediment/Leachate Sample Location
 - Approx. Site Boundary
 - ▨ Soil/Landfill/Groundwater Restriction Zone (IC, per ROD)
 - ▩ Eastern Plume Groundwater Restriction Zone (IC, per ROD)

Figure 6

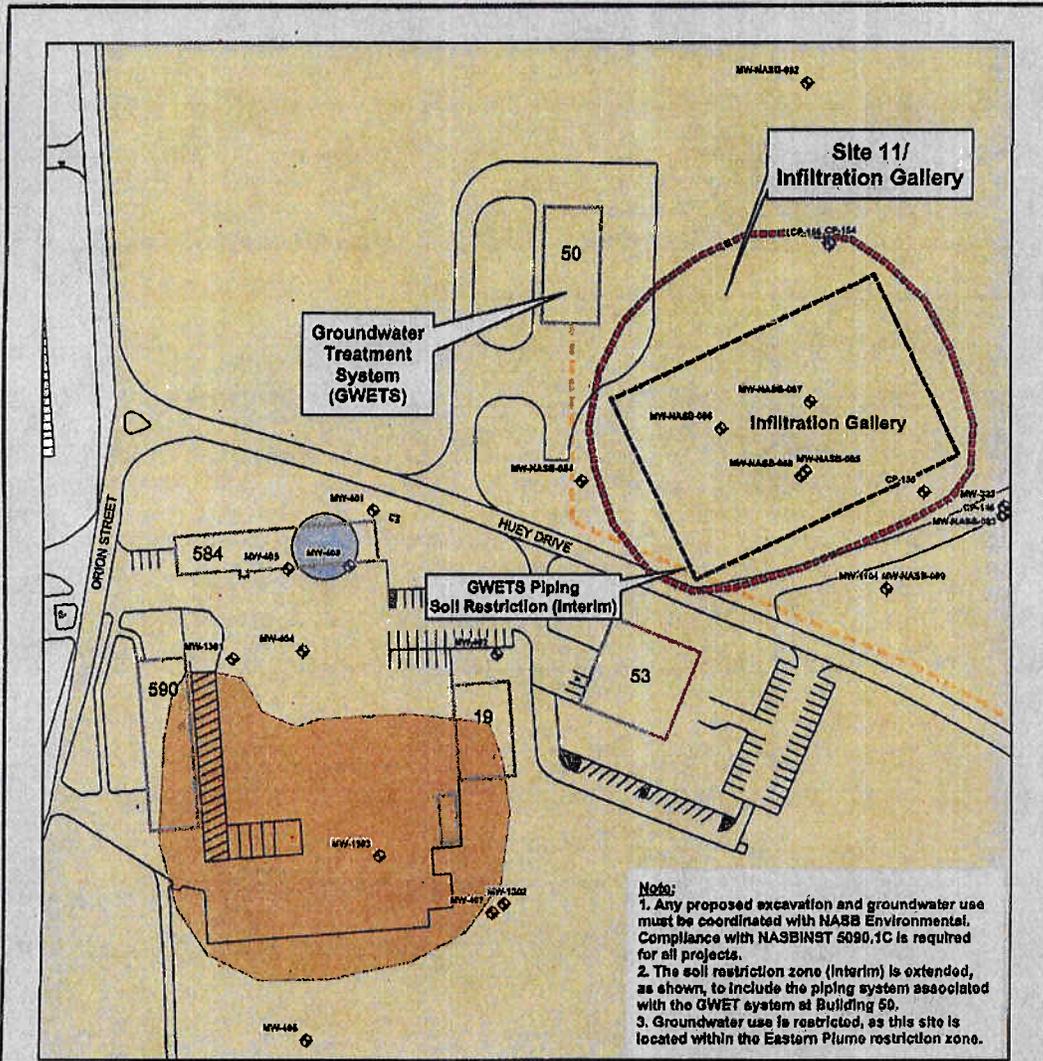
Site 9

Naval Air Station
Brunswick, Maine

Scale: 0 50 100 200 feet

Figure 6

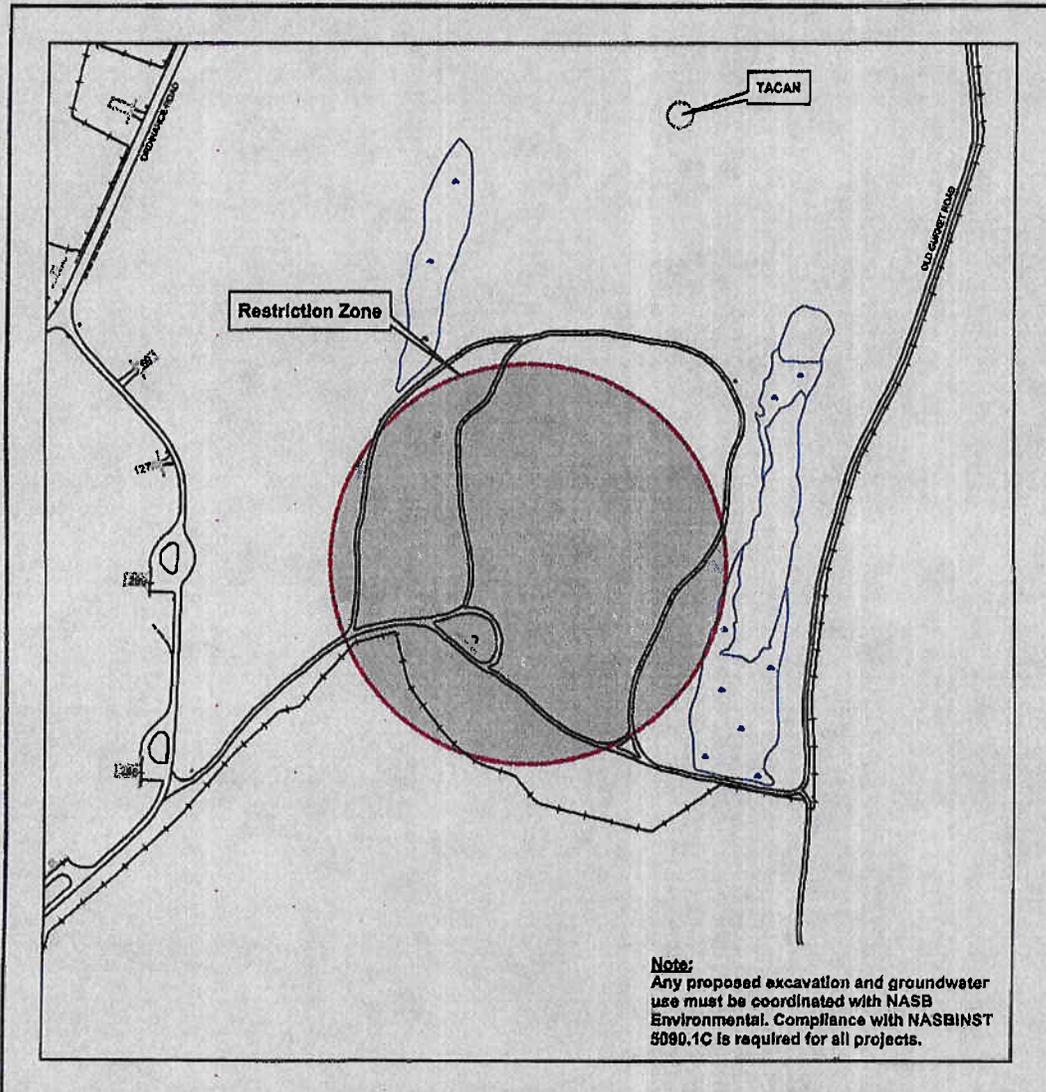
Enclosure (2)



Note:
 1. Any proposed excavation and groundwater use must be coordinated with NABB Environmental. Compliance with NASBINST 5090.1C is required for all projects.
 2. The soil restriction zone (interim) is extended, as shown, to include the piping system associated with the GWET system at Building 50.
 3. Groundwater use is restricted, as this site is located within the Eastern Plume restriction zone.

Coordinate system HAD 1983, UTM, Zone 18N		Area of Detail 	Legend <ul style="list-style-type: none"> ◆ Sample Location GWETS Piping (includes interim soil restriction zone) Soil Restriction Zone (Interim) Approx. Area of Infiltration Gallery Site 4 (Approx. Location) Site 13 (Approx. Location) Eastern Plume Groundwater Restriction Zone (IC, per ROD) 	Figure 7 Site 11/ Infiltration Gallery	
Notes Restriction zone based on approximate location of former Plume Training Area (PTA) and Infiltration Gallery. Restriction zone is to ensure protection of the Infiltration Gallery. This is a Site of No Further Action. IC boundary was not in this selected remedy, per Site 11 ROD.				Naval Air Station Brunswick, Maine	
Date: 28-MAR-2007 Rev: C. Qualls App. By:	Rev: Date: App. By:	EDC: 11/03/07, 11/03/07, 11/03/07, 11/03/07, 11/03/07 0 40 80 160 Foot			

Figure 7 Enclosure (2)



Coordinate system		NAD 1983 UTM Zone 18N	
Notes		Restriction zone is pending further evaluation. Site is located in Weapons Area.	
Date	26-MAR-2007	Rev.	
DD	C. Guido		
CS			
AD			

Area of Detail

Legend

- Fence
- Building
- Road
- Stream & Wetland
- Soil/Groundwater Restriction Zone (Interim)
- Approx. Location of 14-Acre Site (pending further investigation)

Figure 8

Site 12

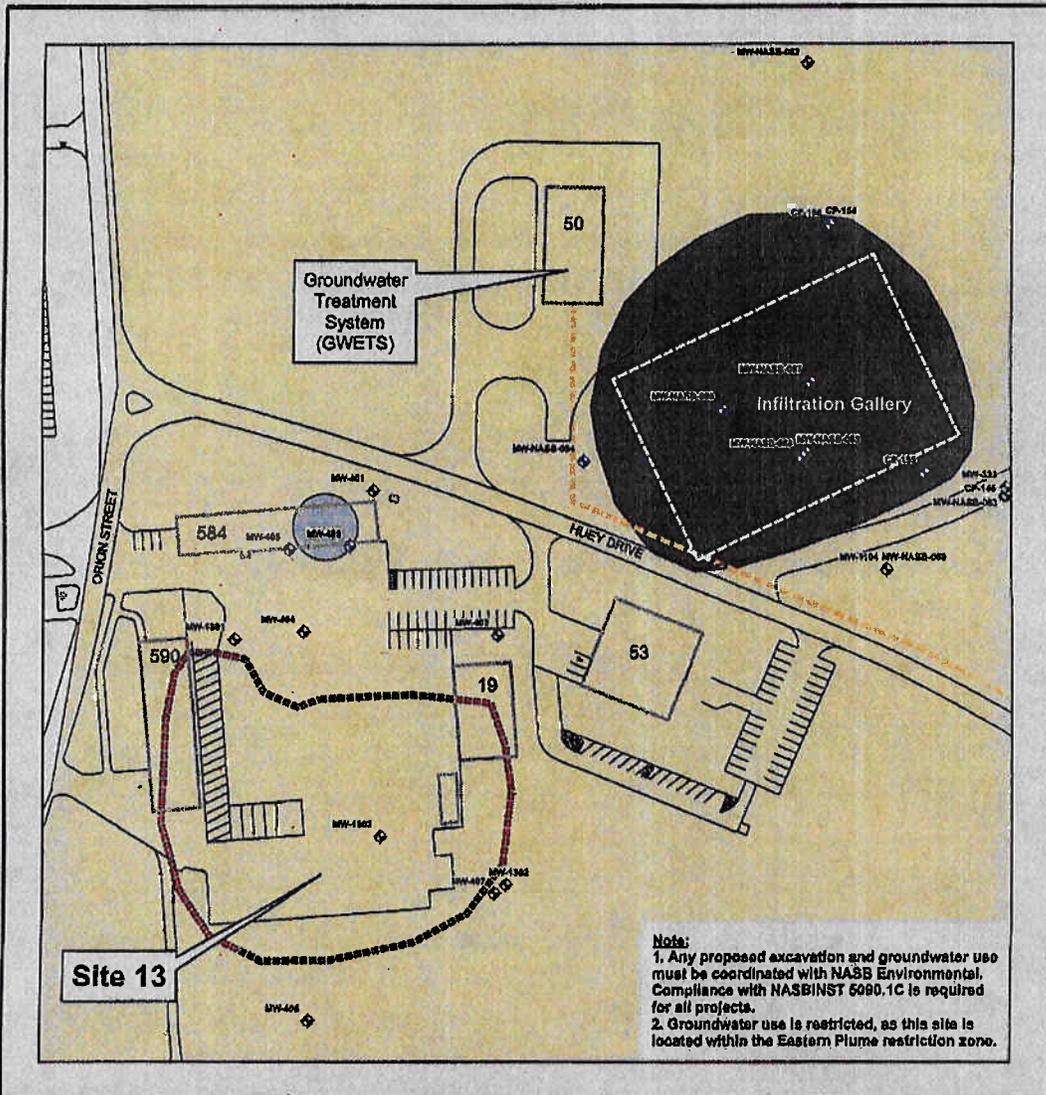
Naval Air Station
Brunswick, Maine

EGG Environmental, LLC
100 West Street, Brunswick, ME 04017
Tel: 207.739.1200
Fax: 207.739.1201

0 50 100 325 Feet

Figure 8

Enclosure (2)



Coordinate system	NAD 1983, UTM, Zone 18N		
Notes	Site 13 is located in the former Defense Reutilization and Marketing Office (DRMO) area where 3 underground storage tanks were removed. Restriction zone is to maintain the pavement in this area. This is a site of No Further Action. IC boundary was not included in the selected remedy, per Site 13 ROD.		
Date	26-MAR-2007	Rev.	App. By
DB	C. Q. Rice		
CE			
AB			



Legend	
	Sample Location
	Building
	Road
	GWETS Piping (includes Interim soil restriction zone)
	Soil Restriction Zone (Interim)
	Site 11 Infiltration Gallery (Approx. Location)
	Site 4 (Approx. Location)
	Eastern Plume Groundwater Restriction Zone (IC, per ROD)

Figure 9

Site 13

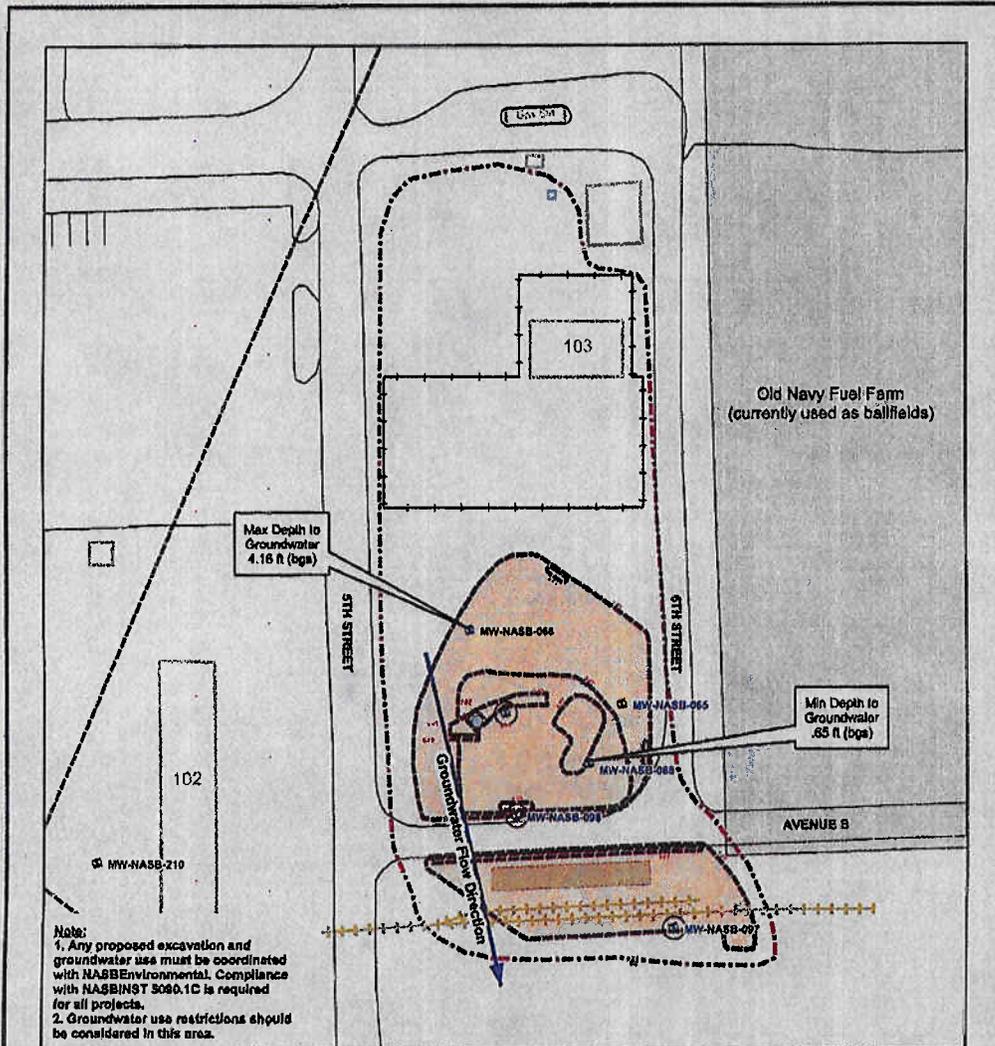
Naval Air Station
Brunswick, Maine

SCE, Northrup, W3
C:\NAVY_SCE\7077_Draws\161\DrawSheet
MapDocument\Site 13.dwg

0 45 90 180
Foot

Figure 9

Enclosure (2)



Note:
1. Any proposed excavation and groundwater use must be coordinated with NASB Environmental. Compliance with NASBINST 5090.1C is required for all projects.
2. Groundwater use restrictions should be considered in this area.

Coordinate system	NAD 1983, UTM, Zone 19 N		
Notes	Restriction zone is pending further investigation. Soil excavation depths shown in feet below ground surface (bgs). Depth to groundwater calculated in feet below ground surface (bgs). Groundwater depth calculated using Spring 2006 water gauging data.		
Date	75-MARS-2217	Rev.	App. By
DB	E. Sudo		
CD			
AD			



- Legend**
- Sept 05 Sample Location
 - ⊙ Former Location of Septic Tank
 - ◇ Monitoring Well
 - ⚡ Fenceline
 - ⚡ Rail Road Track (Abandoned)
 - ▭ Soil Restriction Zone (Interim)
 - ▭ Approx. Area of Soil Relocation
 - ▭ Excavation Boundary (Approx)
 - ▭ ONFF Restriction Zone (Interim)

Figure 10

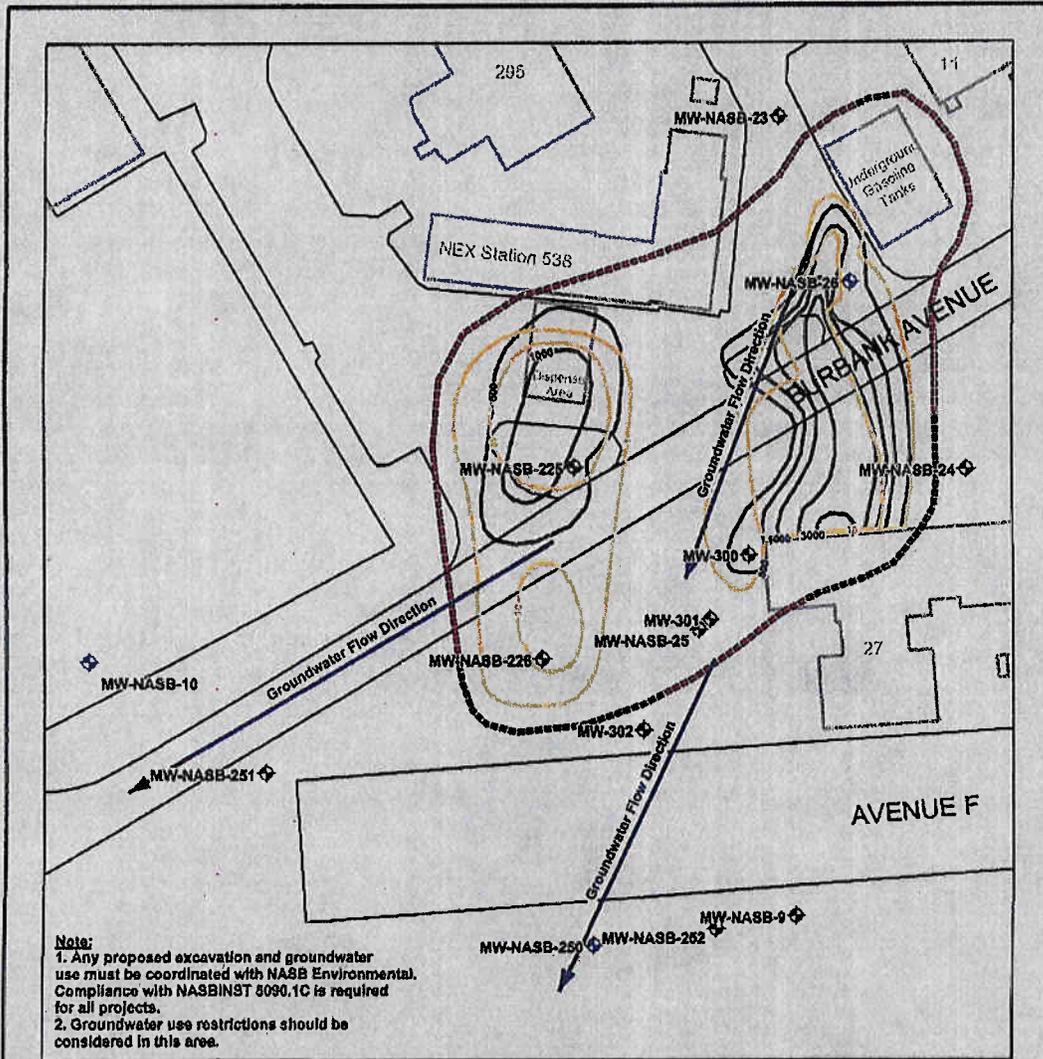
**Site 17/
Bldg 95**

Naval Air Station
Brunswick, Maine

Scale: 0 20 40 60 Feet

Figure 10

Enclosure (2)

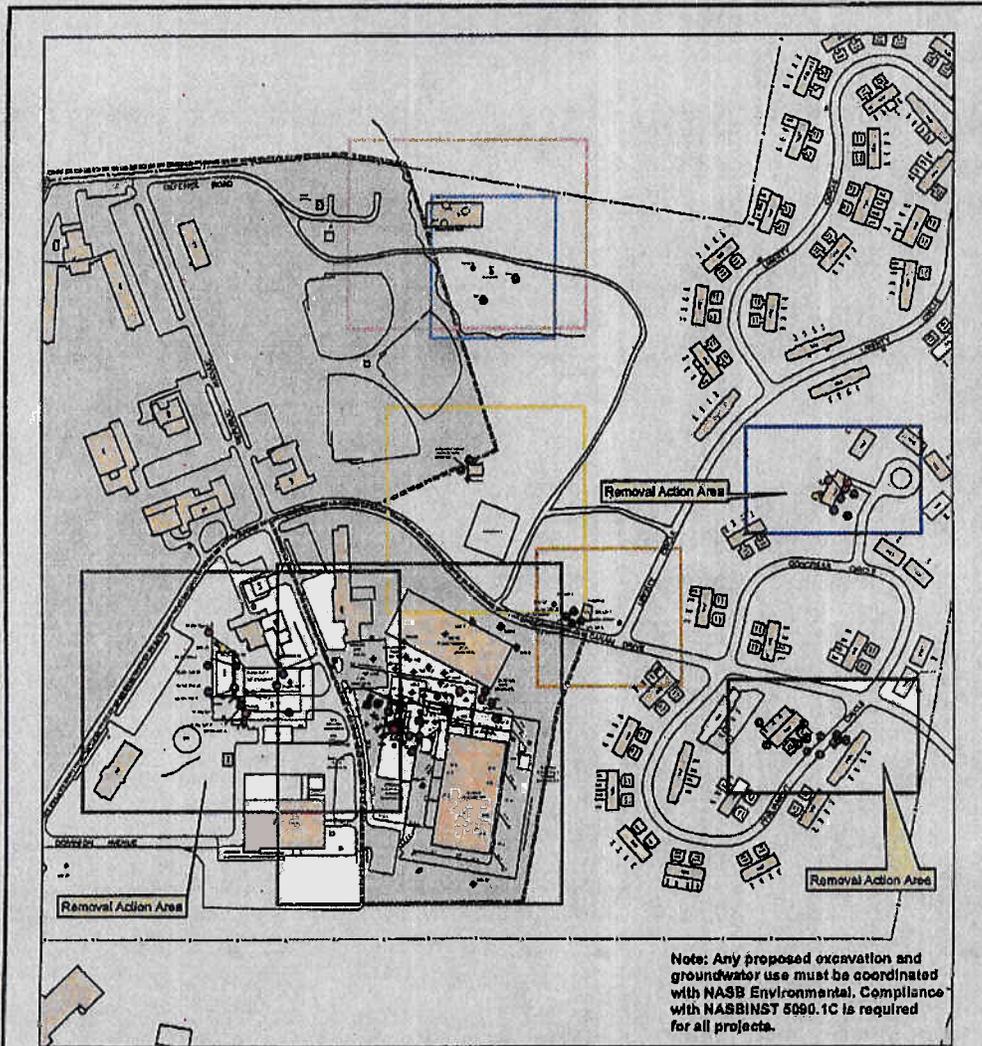


Note:
1. Any proposed excavation and groundwater use must be coordinated with NASB Environmental. Compliance with NASBINST 5090.1C is required for all projects.
2. Groundwater use restrictions should be considered in this area.

Coordinate system NAD 1983, UTM, Zone 18N		Area of Detail 	Legend ◆ Monitoring Well — GRO in Water (mg/l) — GRO in Soil (mg/kg) [] Soil Restriction Zone (interim) GRO = Gasoline Range Organics	Figure 12 Navy Exchange Service Station (NEX), Bldg 538	
Notes Any contamination under buildings 538 and 27 has not been assessed. Remediation is on-going. VED for 2000 to 00. Data from Round 2 Summary Report for Detection-Only Remediation Field Test (NEX, Oct 05). No ROD at this site to designate IC boundaries. Remediation still pending further investigation.				Naval Air Station Brunswick, Maine	
Date: 28-MAR-2007 DB: C. Quate CD: Alt:	Rev.: Date: App. by:	5000 Meters 0 15 30 60 Feet		5000 Meters 0 15 30 60 Feet	

Figure 12

Enclosure (2)



Coordinate system NAD 1983, UTM Zone 18N		Area of Detail 	Legend		Figure 13 Topsham Annex Naval Air Station Brunswick, Maine
Notes Data from aerial photography is not guaranteed to be accurate. The user should verify the accuracy of the data before use. The user should also verify the accuracy of the data before use. The user should also verify the accuracy of the data before use.			Location of Exceedance ○ Soil ● Water ● Water & Soil ■ Transferred Parcel	Area of Investigation □ Area A □ Area B □ Area C □ Area D □ Area E □ Former Street Range Area □ Top. 1 Area □ Top. 2 Area	
Date: 26-MAR-2007 DD: C. Ozido CS: AS:	Rev: Date: App. By:	1) Parcel boundaries are approximate. 2) Location of exceedance denotes exceedance of MEG, MCL, ME PFD, or ME RAQS.			

Figure 13

Enclosure (2)

5 March 2008

Naval Air Station Brunswick, Maine
EXCAVATION CLEARANCE PERMIT

Office use only:

DIG PERMIT #

Updated 26 Dec 2007

1. CLEARANCE IS REQUESTED TO PROCEED WITH WORK AT SERVICE CALL, WORK REQUEST OR CONTRACT NUMBER INVOLVING EXCAVATION OR UTILITY DISTURBANCE.

2. INSTRUCTION:

THE EXCAVATION CLEARANCE REQUEST IS USED FOR ANY WORK THAT MAY DISRUPT BASE UTILITY SERVICES AND PROTECTION PROVIDED BY FIRE OR INFUSION ALARM SYSTEM. THE EXCAVATION CLEARANCE IS PROCESSED PRIOR TO THE START OF WORK. IF DELAYS ARE ENCOUNTERED OR THE JOB SITE CONSTRUCTION CHANGES, THIS CLEARANCE MUST BE REPROCESSED.

NOTE: ANY DISCREPANCY BETWEEN ATTACHED DRAWING AND THE ACTUAL CONDITIONS MUST BE NOTED ON THE ATTACHED DRAWING AND RETURNED WITH THIS FORM TO PUBLIC WORKS FMED. CONTACT PW ENGINEERING at 921-1705 WITHIN 24 HOURS OF EXCAVATION COMPLETION TO REPORT ALL CONDITIONS NORMAL OR ANY DISCREPANCIES.

3. ADDITIONAL INFORMATION & REQUIREMENTS:

- A: ALL KNOWN UTILITIES ARE SHOWN ON ATTACHED DRAWING
- B: HAND DIG WITHIN FIVE FEET OF ESTIMATED POSITION
- C: REQUESTING PERSON(S) MUST CONTACT MECHANICAL SHOP (SHOP 42) AND ELECTRICAL SHOP (SHOP 41) TO SCHEDULE VISITS BY SHOP SUPERVISORS
- D: REQUESTING PERSON(S) MUST CONTACT STAN NOCK (921-2467) OF MECHANICAL SHOP 24 HOURS PRIOR TO EXCAVATION
- E: REQUESTING PERSON(S) MUST CONTACT DIG SAFE TO LOCATE PHONE LINES
- F: WORK INVOLVING SOIL DISTURBANCE OR GROUNDWATER USE REQUIRES COORDINATION WITH ENVIRONMENT PRIOR TO WORK COMMENCING. ANY CONTACT WITH GROUNDWATER MUST BE REPORTED TO ENVIRONMENTAL.
- G: Excavation MUST start within 30 days of Issue of this Dig Permit. Good for life of project or until 30 days of inactivity on project.

4. DATE WORK SCHEDULED

5. REQUESTING SHOP/CONTRACTOR

6. PROJECT SUPERVISOR

7. PW FMED REP: 921-1701

BRUCE WYMAN

8. FACILITIES MAINTENANCE MECHANICAL / ELECTRICAL SUPERVISOR

BILL BABBIN 921-2626

9. ASBESTOS PROGRAM MANAGER

CARLA SANDERS 921-1708

10. NATURAL RESOURCE MANAGER (Environmental)

VACANT 921-2772 (LISA JOY)

11. INSTALLATION RESTORATION COORDINATOR (Environmental)

MICHAEL FAGAN 921-1717

12. GROUND ELECTRONICS MAINTENANCE DIVISION

DUTY ET 921-2594

13. Others:

14. DIG SAFE (1-888-344-7233) CALLED? YES OR NO (CIRCLE ONE)

CLEARANCE DATE:

CLEARANCE NUMBER:

THE AREA BELOW IS FOR ANY OTHER SIGNATURES THAT MAY BE NEEDED DUE TO LOCATION OR NATURE OF WORK TO BE PERFORMED.