FINAL

ENVIRONMENTAL CONDITION OF PROPERTY REPORT

QUINTA-GAMELIN
U.S. ARMY RESERVE CENTER (RI001)
ASYLUM ROAD
BRISTOL, RI 02809-1221

Prepared For:

U.S. Army Corps of Engineers – Louisville District
Engineering Division – Environmental Engineering Branch
600 Dr. Martin Luther King, Jr. Place
Louisville, Kentucky 40202-2232

MARCH 2007

Certification

All information/documentation provided accurately reflects the environmental condition of the property. This ECP report is in general accordance with the U.S. Department of Defense (DoD) requirements for completion of an Environmental Condition of Property (ECP) report.

GARY PURYEAR **DATE**
Chief, Environmental Division
94th Regional Readiness Command

The undersigned certifies the contents of this report are in general accordance with DoD policies for the completion of an ECP.

03/08/07

LENARD GUNNELL, P.G. **DATE**
Project Geologist
U.S. Army Corps of Engineers

Executive Summary

CH2M HILL, under contract to the U.S. Army Corps of Engineers, Louisville District, has prepared this Environmental Condition of Property (ECP) report for the Quinta-Gamelin U.S. Army Reserve (USAR) Center (Facility ID RI001), hereafter referred to as the "Property" or "USAR Center." The Property is on the west side of the city of Bristol, Rhode Island and encompasses approximately 5 acres.

This ECP report was conducted in conformance with the Department of Defense's (DoD's) Base Redevelopment and Realignment Manual, DoD 4165.77-M (BRRM), Army Regulation 200-1, and the American Society for Testing and Materials (ASTM) Designation D6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*.

This ECP report details the history of the property, including the USAR and any prior tenant uses of the Property and the resulting environmental condition of the property.

In support of the ECP report, CH2M HILL inspected the Property and performed a reconnaissance of the surrounding area on August 1, 2006.

Two permanent structures are onsite - the current U-shaped building surrounding the drill hall, and a two-bay Organizational Maintenance Shop (OMS) building. Various units of USAR have occupied the USAR Center at different times; the 2nd Simulation Unit is currently occupying the Property. Since the U.S. Government acquired the property in 1956 from the Town of Bristol, the Property has served as a USAR Center.

Areas of potential environmental concern on the Property were reviewed and CH2M HILL found a release causing documented stressed vegetation on the north side of OMS building; the wash rack that was known to have received POL products and possibly hazardous substances, that has a failed drain that was replaced and a crack in the pad in the vicinity of the drain; lack of verified closure information for USTs; and possible impacts from an adjacent property undergoing remediation. Additional evaluations also may be needed regarding the alleged landfill that is on the northern part of the Property; and to verify there are no environmental issues associated with the septic system, which was connected to floor drains.

In accordance with DoD policy defining the classifications (see Sherri Goodman memorandum dated 21 October 1996), the Property has been classified as Type 7. This classification does not include categorizing the property based on de minimis conditions that generally do not present material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

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Abbreviations and Acronyms

The following is a comprehensive list of abbreviations and acronyms that are used throughout this report.

ACM	asbestos-containing material
AR	Army Regulation
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BRAC	Base Realignment and Closure
BRRM	Base Redevelopment and Realignment Manual
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act Information System
CFR	Code of Federal Regulations
CORRACTS	Resource Conservation and Recovery Act corrective action sites
DoD	Department of Defense
ECAS	environmental compliance assessment survey
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
ERNS	Emergency Response Notification System
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System/Facility Registry System
kg	kilogram
LBP	lead-based paint
LUST	leaking underground storage tank
MEC	munitions and explosives of concern
MEP	military equipment parking
msl	mean sea level
NBC	nuclear, biological, and/or chemical

NFA	no further action
NPL	National Priorities List
NRHP	National Register of Historic Places
OF	outfall
OMS	Organizational Maintenance Shop
OWS	oil/water separator
PAL	Public Archaeology Laboratory, Inc.
PCB	polychlorinated biphenyl
pCi/L	picoCuries per liter
POL	petroleum, oil, and lubricants
POV	privately owned vehicle
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Information System
RIDEM	Rhode Island Department of Environmental Management
RRC	Regional Readiness Command
SHWS	State Hazardous Waste Site
STATSGO	State Soil Geographic Database
TSD	treatment, storage, or disposal
USACE	United States Army Corps of Engineers
USAR	United States Army Reserve
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank

1 Introduction

CH2M HILL, under contract to the U.S. Army Corps of Engineers (USACE) Louisville District Engineering Division was authorized to conduct an Environmental Condition of Property (ECP) report for the Quinta-Gamelin U.S. Army Reserve (USAR) Center (RI001). The facility is located on Asylum Road, Bristol, Bristol County, Rhode Island, and is hereafter referred to as the Property or USAR Center. CH2M HILL prepared this ECP report under contract number W912QR-04-D-0020, Task Order No. 0018, with the Louisville District USACE.

A visual non-intrusive reconnaissance of the Property was conducted on August 1, 2006, in support of the ECP. The reconnaissance purpose was to visually obtain information indicating the likelihood of recognized environmental conditions associated with the Property or adjacent properties.

In preparing this ECP report, CH2M HILL gathered information from available records and previous work from others, interviews with individuals purporting to be familiar with the Property, and observations from a site reconnaissance. The accuracy of the information obtained from these sources was not verified by CH2M HILL. As such, CH2M HILL will make no warranty, expressed or implied, relative to the accuracy, completeness, or reliability of the information used to create the records and reports prepared by others.

1.1 Purpose of Environmental Condition of Property

The Military Department with real property accountability shall assess, determine and document the environmental condition of all transferable property in an ECP report. This ECP report is based on reasonably available information. Pursuant to the Department of Defense's (DoD's) policy, set forth in the Base Redevelopment and Realignment Manual (DoD 4165.66-M, March 1, 2006) Section C8.3 (BRRM), the primary purposes of the ECP report include the following:

- Provide the Army with information it may use to make disposal decisions
- Provide the public with information relative to the environmental condition of the property
- Assist in community planning for the reuse of Base Realignment and Closure (BRAC) property
- Assist federal agencies during the property screening process
- Provide information for prospective buyers
- Assist prospective new owners in meeting the requirements under U.S. Environmental Protection Agency's (USEPA's) "All Appropriate Inquiry" regulations
- Provide information about completed remedial and corrective actions at the property

- Assist in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction

The ECP report contains the information required to comply with the provisions of 40 Code of Federal Regulations (CFR) Part 373, which require that a notice accompany contracts for the sale of, and deeds entered into, for the transfer of federal property on which any hazardous substance was stored, released, or disposed of. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120(h) stipulates that a notice is required if certain quantities of designated hazardous substances have been stored on the property for 1 year or more—specifically, quantities exceeding 1,000 kilograms (kg) or the reportable quantity, whichever is greater, of the substances specified in 40 CFR 302.4 or 1 kg of acutely hazardous waste as defined in 40 CFR 261.30. A notice also is required if hazardous substances have been disposed of or released on the property in an amount greater than or equal to the reportable quantity. Army Regulation (AR) 200-1 requires that the ECP report address asbestos, lead-based paint (LBP), radon, and other substances potentially hazardous to human health.

This ECP report used the American Society for Testing and materials (ASTM) Designation D6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*, the BRRM, CERCLA §120, and AR 200-1.

1.2 Scope of Services

This ECP report covers the site survey and assessment of the environmental condition of the 5.3-acre Quinta-Gamelin USAR Center located on Asylum Road, Bristol, Rhode Island. All site maps, figures, and aerial photographs referenced herein are provided in Appendix A, while Appendix B contains the photographs taken during the August 1, 2006, site reconnaissance. Property warranty deeds and chain of title information, and lease or permit agreements if applicable are provided in Appendix C when they are available. Relevant historical environmental documents and reports are provided in Appendix D, while Appendix E contains the Environmental Data Resources, Inc. (EDR) radius search reports commissioned for this effort.

This ECP report classifies the property into one of seven DoD Environmental ECP categories as defined by the DoD policy issued in October 1996 on the categorization of property to be transferred using BRAC procedures (see Sherri Goodman memorandum dated 21 October 1996) and using for additional guidance the ASTM Designation D5746-98 (2002), *Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities.* The property classification categories are as follows:

- ECP Area Type 1—An area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).
- ECP Area Type 2—An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.

- ECP Area Type 3—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.
- ECP Area Type 4—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and all remedial actions necessary to protect human health and the environment have been taken.
- ECP Area Type 5—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and removal or remedial actions, or both, are underway, but all required actions have not yet been taken.
- ECP Area Type 6—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated.
- ECP Area Type 7—An area or parcel of real property that is unevaluated or requires additional evaluation.

2 Site Location and Physical Description

2.1 Site Location

The Quinta-Gamelin USAR Center is located in Bristol County, on the west side of the city of Bristol, Rhode Island, along Asylum Road (Figure 1, Appendix A). The 5.3-acre parcel is situated on the north side of Asylum Road and is surrounded on other property boundaries by unimproved land and a cemetery. Colt State Park and the East Bay Bike Path (former railroad bed) are west of the Property.

The Property is on a peninsula between Narragansett Bay and Bristol Harbor. It is approximately 0.4 mile east of Narragansett Bay and 0.3 mile north of Bristol Harbor.

2.2 Asset Information

Facility Name and Address:	Quinta-Gamelin U.S. Army Reserve Center Asylum Road Bristol, Rhode Island
Property Owner:	United States Government
Date of Ownership:	1956
Current Occupant:	2nd Simulation Unit
Zoning:	R-10, Residential
County, State:	Bristol, Rhode Island
USGS Quadrangle(s):	Bristol, Rhode Island
Latitude/Longitude:	41°41'15.1"N, 71°17'09.4"W
Legal Description:	The transfer authorization document containing the legal description is included in Appendix C.

2.3 Physical Description

The USAR Center contains two permanent structures and three parking lots (Figure 2, Appendix A). Construction of the main building was originally completed in 1957, but it was demolished, and a new 14,755-square-foot facility to serve the same purpose was constructed in 1988. Construction of the 2,688-square-foot, two-bay Organizational Maintenance Shop (OMS) building was completed in 1959. Both structures are on concrete foundations and consist of concrete block walls covered with a brick exterior.

The main building is a U-shaped one-level structure around a two-story drill hall. The building's interior consists of office space, classrooms, kitchen area (including grease trap),

storage, former indoor firing range, boiler room, and a drill hall. The north wall of the drill hall contains a roll-type garage door for vehicle access and a personnel door.

The OMS building, a 50-foot by 46-foot structure, is located about 50 feet north of the rear of the drill hall. There are two roll-type garage doors on the south side of the building that open into two bays previously used for light vehicle maintenance. One personnel door is located on the west side and one is on the east side of the building.

The vehicle wash rack area is located adjacent to the western wall of the OMS building. It consists of a concrete pad sloping from all sides toward the center (Photograph 2, Appendix B). At the center of the pad is a drain. There is no oil/water separator (OWS) associated with this drain. A 1996 floor drain survey (ENSR, 1996) could not identify the outfall for the drain.

A military equipment parking (MEP) area and a privately owned vehicle (POV) parking area also are contained within the Property. Chain-link security fencing topped with barbed wire encloses the MEP and POV areas to the west of the OMS building. The main building, OMS building, and POV area in front of the main building are open to Asylum Road through a paved driveway.

Impervious surface features such as asphalt parking areas, driveways, concrete walkways, and building footprints cover approximately half of the Property. The remaining land is grassed with a sparse population of evergreen trees clustered in the west and northwest of the Property.

2.4 Site Hydrology and Geology

The USAR Center and Bristol are located within the Atlantic Seabed Lowland Region of New England Physiographic Province. The geomorphic province of southern New England is known as the Atlantic Coastal Plain Province, and it is characterized by diverse surficial and bedrock geology (RI Project Facilities, date unknown). Surface elevations range from 100 feet above mean sea level (msl) to 40 feet above msl in the Bristol area. The topography at the Property is uneven, with a general decrease in elevation toward the southwestern corner of the parcel. The original topography was altered somewhat during building construction to create a terrace for the buildings, by cutting into the south side of a hill on the Property.

2.4.1 Surface Water Characteristics

The Property is located within the Narragansett Bay drainage basin. Figure 9 in Appendix A provides a portion of the 1970 Bristol, Rhode Island United States Geological State (USGS) topographic map, which includes the Property. As shown, the Property is situated at an elevation of approximately 47 feet above msl and is located on the south side of a hill adjacent to Colt State Park and the Poppasquash Farms National Historic District. The hill slopes gently toward Bristol Harbor in the southwest direction. The closest major surface water features to the Property are Narragansett Bay and Bristol Harbor, which are located approximately 0.4 mile due west and 0.3 mile due south, respectively.

The only surface water feature located in the immediate vicinity of the Property is a seasonal pond on the west side of the Property, as identified in historical records. At the time of the site reconnaissance, the pond to the west of the Property did not have water, and site personnel interviewed think the pond is on Colt State Park property and not part of the USAR Center (Photograph 9, Appendix B).

There are three outfalls (OF 1, OF 2, and OF 3) through which stormwater leaves the facility (Figure 2, Appendix A). Surface water runoff in the MEP area and POV parking areas flows to storm drains located in these areas. The storm drains are connected to OF 2, which discharges to the seasonal pond located to the west of the Property.

Surface water runoff from the grassy area located at the northern end of the Property beyond the POV area collects in a ditch that discharges to OF 1 in the northwestern corner of the Property. OF 1 also discharges to the seasonal pond. Surface water runoff from the grassy area to the east and northeast corner temporarily collects in a low-lying area in the northeast corner (Photograph 10, Appendix B) before flowing southward through a ditch in the eastern end of the Property to OF 3. OF 3 is a culvert pipe in the median between the westbound and eastbound lane of Asylum Road, and this outfall discharges to Narragansett Bay.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Community Panel 44001C0013F, the Property is not included in the 100-year floodplain elevation. Figure 4 in Appendix A provides a map depicting the extent of the nearest 100-year floodplain in relation to the Property.

2.4.2 Hydrogeological Characteristics

Bedrock under the facility is the Rhode Island Formation of Pennsylvanian age and consists of sedimentary sandstone, shale, conglomerate, and meta-anthracite coal beds. Glacial till plains from the Wisconsin Stage comprise the surficial geology. They consist of unconsolidated materials such as unsorted glacial till and well-sorted sand, gravel, and silt (RI Project Facilities, date unknown).

According to information acquired from the Soil Conservation Service's State Soil Geographic Database (STATSGO) and EDR data search for Bristol County, specific types of soil at the Property are from the Pittstown and Urban Land Series. The Pittstown and Urban Land Series are both listed as partially hydric soils.

The undisturbed surface soils are generally silty loams and were formed on glacial upland hills. These soil types have slow infiltration rates with layers impeding downward movement of water and are characterized as soils with fine textures. In a typical profile, the surface layer is approximately 8 inches thick and is a silty loam. The subsoil is approximately 20 inches thick and is silty loam. The lower horizon channey-silt loam (granular material of silty or clayey gravel and sand) is encountered at depths ranging from 28 to 60 feet.

The near-surface groundwater occurs under generally unconfined conditions at depths approximately 3 to 6 feet below the surface. From the topography and surface water body locations, groundwater flow direction is southwest toward Narragansett Bay and Bristol Harbor.

2.5 Site Utilities

Water Service—The City of Bristol provides potable water service to the Property.

Sanitary Sewer System—The Property has its own septic tank and leach field. The primary source of wastewater that is directed to the septic tank and leach field includes non-process wastewater (bathrooms, sinks, etc.), and water from the floor drains. Though not confirmed, the septic tank also may receive rinse water from the wash rack.

Gas and Electric—Facility Management buys propane gas from different independent suppliers to fill onsite propane tanks, while National Grid Electric Company provides electric service to the Property.

2.6 Water Supply Wells and Septic Systems

Based on a review of available historical site and agency records and interviews with site personnel, there are no water supply wells located currently or historically at the Property. Potable water is supplied by the City of Bristol.

Twelve floor drains were noted in the *Floor and Storm Drain Inventory and Natural Resource Inventory* (ESNR, 1996). With the exception of the floor drain in the arms vault, which had been removed, all floor drains were verified as still in use and discharged to the leach field.

All buildings on the Property are serviced by a septic tank system and leach field. The system is designed for a normal sewage load from the office and classroom restrooms, plus some cooking oil and grease from the kitchenette. All the floor drains are designed to connect to the leach field, according to plans reviewed during the 1994 floor drain inventory. A telephone conversation with the Superintendent of the City of Bristol Water Pollution Division on September 1, 2006, confirmed that there is no record indicating the USAR Center is connected to the city's sanitary system.

Conflicting information exists in the 1994 drain inventory (ESNR, 1994) for drains in the OMS building. Page 1 of the inventory indicates that no floor drains exist in the OMS building. Under Section 7.1.m., the same report states, "OMS work pits were inventoried as containing a floor drain based on information from facility personnel. The presence of a floor drain in the work pit could not be confirmed by visual observation because the work pits [Photograph 5, Appendix B] were either cemented in, covered by equipment, filled with water, or the sump of the work pit was covered by a grate which could not be removed." If the floor drain existed, oil, grease, and cleaning solvents may have been directed from the floor drain in the vehicle maintenance shop to the septic system. At the time of the 1994 drain survey, the facility was still connected to its own septic tank and leach field. ESNR confirmed this information with the local water and sewer board. A reference also was found that indicated a new septic system was installed in 1988 (ECAS, 1993).

Because of this conflicting information, RRC staff provided photographs of a typical work pit constructed for the 94th RRC. These work pits contained a sump without a floor drain. Although it cannot be confirmed if this work pit had only a sump, since it has been filled in, this work pit was most likely constructed in a similar manner to the other 94th RRC work pits, and therefore did not have a drain to the septic tank.

3 Site History

3.1 History of Ownership

Review of available historical records (chain of titles for the Property and deed of transfer dated September 4, 1956 [Appendix C]) indicated that the U.S. Government purchased the 5.3 acres of land from the Town of Bristol on September 4, 1956. The Town of Bristol acquired the Property from Lebaron B. Church and William B. Church on July 14, 1866. It has remained an asset of the Government to the present day without interruption.

3.2 Past Uses and Operations

A review of the 1951 aerial photograph and the 1955 topographic map (Figures 3 and 8, Appendix A) indicates that the land was used for farming before the USAR Center was constructed. Construction of the main building was completed in 1957, and the OMS building was completed in 1959. The Property has served as a reserve and mobilization center for USAR since the U.S. Government acquired the land.

The Property primarily functioned as an administrative, logistical, and educational facility, with limited maintenance of military vehicles occurring in the OMS building. The Property was historically used by reservists for drill activities on various weekends throughout the year. The 2nd Simulation Unit is the unit currently occupying the USAR Center. The mission of this unit is to provide tactical training to reservists. At the time of the site reconnaissance, the main building contained various items, including desks, office furniture, and folding tables.

Site records indicate vehicle maintenance was not being performed in the OMS building from 1995 to the present. Site interviews could not confirm the last time vehicle or military equipment maintenance was performed in the OMS building. According to the Rhode Island Historic Preservation and Heritage Commission Historic Property Data Collection Form (PAL, 1995), the OMS building was classified as a motor vehicle garage that was used to perform routine maintenance on assigned unit vehicles and to store the same vehicles. The same report stated that the "types of maintenance included oil changes, lubrication, battery filling, light running repairs, tire changing, light bulb replacement, and minor painting, tuning, and washing. More complicated repairs were sent to a regional facility." Photograph 5 in Appendix B shows a portion of a rectangular outline of a separate concrete pour in the floor of the OMS building (lower right corner of the photograph). The corner of the rectangle is below the ladder shown in the photograph. The outline identifies one corner of a former work pit that was filled in and sealed with a concrete top. By 1995, the OMS building also was used for unit equipment storage, so that most of the unit-assigned vehicles had to be stored outside.

At the time of the site reconnaissance, the OMS building contained dry non-vehicle maintenance supplies. Photographs 5 and 6 in Appendix B shows cages in the OMS building for storing 5-gallon containers of salt melt, electrical bulbs, office stationery, and

personal field equipment of reservists who just returned from active duty. The eastern section of the OMS building has been converted to and is now used as a classroom.

No military vehicles were observed at the time of the Property visit. The unit currently occupying the Property does not have military vehicles assigned to it.

Historical aerial photographs and topographic maps were the primary source of information on the past use and operations at the Property. Figures 3 and 5 through 10 in Appendix A provide USGS topographical maps from 1955, 1970, and 1975 and aerial photographs from 1951, 1976, 1981, and 1992 views of the Property and surrounding areas.

The 1955 USGS topographical map (Figure 8, Appendix A) shows the location of Property and areas to the north, east, west, and south as undeveloped. The only identifiable feature here at this time is the North Cemetery, established in 1822. The city of Bristol is established to the north and southeast. The 1970 and 1975 USGS topographical maps (Figures 9 and 10, Appendix A) show both the L-shaped main building and OMS building.

The 1951 aerial photograph (Figure 3, Appendix A) shows the location of the Property and adjacent properties on all sides as what appears to be farmland. A 1962 aerial photograph shows the old L-shaped administrative building and the OMS building on the Property. Adjacent properties at this time appeared relatively unchanged from the 1951 aerial. The 1972 and beyond aerial photographs show the Property, but adjacent properties look like wooded areas instead of farmland.

The 1992 aerial photograph (Figure 7, Appendix A) shows the present U-shaped main building and the OMS building. The area north and west of the Property is vacant and appears undisturbed.

3.3 Past Use, Storage, Disposal, and Release of Hazardous Substances

3.3.1 Past Use and Storage of Hazardous Substances

Information related to the past use and storage of hazardous substances at the Property was compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. Common janitorial and building maintenance products (motor oil, heating oil, and paints) were observed during the site reconnaissance, and hazardous substances have historically been stored on the Property. These substances include batteries, paint, pesticides, corrosive materials (a chemical agent training set), and cleaning solvents.

3.3.2 Past Disposal and Release of Hazardous Substances

Information related to past disposal and potential release of hazardous substances at the Property was compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. According to Army Reserve personnel and site records, onsite storage and an accidental release of hazardous materials or wastes may have occurred at the Property. The basis for this statement is found in the draft environmental compliance assessment survey (ECAS) report (Fort Devens,

1993), which references an observation of stressed vegetation on the north side of the OMS building in December 1992. The problem existed at least since March 1989, when a site investigation was requested to assess the cause of the stressed vegetation. Facility personnel employed at the time indicated that drums of waste automotive products were once stored there.

The second possible release may be associated with the sump area of the wash rack. Apparently there is no OWS, and the outfall for the wash rack area cannot be located (ENSR, 1996). During the 1992 ECAS site visit, team personnel noted that "close examination of the sump area resulted in a pungent diesel odor." During the 2006 site reconnaissance, there was a crack in the concrete extending across the wash rack, adjacent to the drain (Photograph 2, Appendix B). The photograph also shows the area around the drain has been repaired, and based on the elevated level of the current drain, repairs or modifications to the sump are likely to have occurred.

The draft ECAS report (Fort Devens, 1993, Section 1.2.7) also made reference to a past landfill on the site. It states, "The facility has not been screened for past use of hazardous substances and the potential for contamination, especially since a portion of the site is suspected to have been used as a landfill in the past." No additional documentation or proof of the existence of the landfill was found. Available aerial photographs dating back to 1951 were reviewed. Conclusive evidence of whether or not a portion of the property was part of a landfill was not ascertainable from the photographs.

No stained soil or stressed vegetation was observed during the August 2006 site reconnaissance. Additionally, the MEP area and POV parking area did not show any signs of staining, and no noxious or foul odors were noted during the site reconnaissance.

3.4 Past Presence of Bulk Petroleum Storage Tanks

Based on a review of available site records, a search of federal and state environmental databases, and interviews with Army Reserve personnel, three heating oil underground storage tanks (USTs) were previously located at this facility. One of the USTs (a 3,000-gallon tank) was removed in 1988. A no further action (NFA) report was submitted to the Rhode Island Department of Environmental Management (RIDEM), and RIDEM approved the NFA and issued a closure certificate dated May 16, 1988.

In a letter dated September 29, 2000, RIDEM granted approval to the USAR Center to remove the remaining two tanks (3,000-gallon and 1,000-gallon) on October 5, 2000. A record search with the RIDEM UST Office revealed a Closure Inspection Checklist completed on October 5, 2000, for the tank removals. The inspection checklist requested a closure assessment be conducted at the tank removal locations. A follow-up telephone conversation with RIDEM UST program personnel confirmed there is no record to indicate that the request of closure assessment has been performed, and thus, the tanks are not considered closed by his office, as there is no closure certificate for the two tanks.

Three 1,000-gallon propane aboveground storage tanks (ASTs) are located at the Property. The date of installation of these tanks was not immediately available; however, an information plate on one of the tanks indicates the tank's manufacture date of 1998. The ASTs store propane gas for heating the buildings on the Property.

3.5 Review of Previous Environmental Reports

A review of site records produced several reports pertaining to the Property. The following subsections provide a brief summary of these reports. Copies of the reports, unless otherwise specified, are provided in Appendix D.

3.5.1 1992 Environmental Compliance Assessment Report

The Fort Devens 416th Engineer Command performed an internal survey for the USAR Center in 1992, listing and evaluating areas on the Property where environmental concerns were apparent. Several areas were noted as needing correction at the time of the assessment. Examples of concerns listed at the time include absence of tank registration, use of improper petrometer tank level meter, lack of meter calibration, absence of the observed wash rack on the blueprints, observation of asbestos, and stressed vegetation due to past drum storage. According to the report, none of the deficiencies observed posed an immediate risk to the environmental condition at the Property.

3.5.2 1994 Asbestos Survey Report and Operations and Maintenance Plan

Covino Environmental Consultant of Woburn (Covino, 1998), acting on behalf of ABB Environmental Services Inc. of Wakefield, Massachusetts, conducted a survey in late 1994 and prepared a report of asbestos-containing material (ACM) occurrence in the buildings on the Property. Potential types, quantities, locations, and conditions of asbestos were examined in the report.

3.5.3 Floor and Storm Drains Inventory and Natural Resources Inventory

A report entitled *Floor and Storm Drains Inventory and Natural Resources Inventory* was prepared for the 94th Regional Readiness Command (RRC; ENSR, 1996) in an effort to inventory and manage natural resources found at 94th RRC facilities in Rhode Island. The report noted that the Quinta-Gamelin USAR Center did not contain any key rare species, or any endangered or threatened plants and animals. Appendix D contains a copy of the *Floor and Storm Drains Inventory and Natural Resources Inventory.*

The report also identified 12 floor drains, all of which were still in use except for the drain in the arms vault that had been removed. Seven storm drains and a wash rack also were identified. Efforts were made to confirm the outfall and pre-treatment for the wash rack drain, and the outfalls for some of the stormwater drains, but the report authors were unsuccessful in these efforts. They did confirm that the Property has its own septic system. The survey concluded that all the drains were in use and discharged to the leach field. The survey is included in Appendix D.

3.5.4 Archaeological and Historical Survey

Public Archaeology Laboratory, Inc. (PAL, 1995) conducted archaeological and historical surveys for six Rhode Island 94th RRC project facilities, including the Quinta-Gamelin USAR Center. This survey divided the Property into two areas of archaeological sensitivity for intact cultural resources. Only the northeast corner of the Property, which contains undisturbed soil and ”original” topographic contour lines, is rated as “moderate to high archaeological sensitivity for containing prehistoric deposits.” This area is an estimated

22,600 square feet in size. The remainder of the Property has been too disturbed to be of any archaeological importance.

4 Adjacent Properties

Adjacent property land uses are significant to the ECP process, as these current or past uses may have an environmental impact on the USAR Center. Adjacent properties were included in the EDR report review for this reason. Typically, adjacent properties within 0.25 mile of the USAR Center property boundaries are reviewed and visually surveyed. For the purposes of this ECP, the adjacent property reconnaissance was performed from the USAR Center property boundaries and from public access points. Historical aerial photographs and topographic maps also were reviewed for conditions or activities that may have had an environmental impact on the Property.

4.1 Land Uses

Land use south of the USAR Center is Asylum Road that connects the city of Bristol to Narragansett Bay. The road is divided with a 50-foot grassy median beneath which is a culvert that carries runoff to the bay. A parking lot for Colt State Park visitors is directly south of the USAR Center on the south side of the Asylum Road.

The North Cemetery, established in 1822, is located due east and northeast of the USAR Center.

The property directly north and west of the USAR Center is Colt State Park. The 465-acre park was established in 1965. Within Colt State Park and immediately west and southwest of the Property is Bristol Town Beach and Sport Complex located approximately 0.25 mile west of the Property. The East Bay Bike Path, constructed on a former railroad bed, forms the eastern edge of the park and separates the park from the USAR Center.

4.2 Findings

The EDR database search results and visual survey from public points were used to look for evidence that adjacent properties may have past or present environmental issues that would impact the USAR Center.

According to an EDR report dated July 28, 2006, no activities in any of the adjacent properties have the potential to affect environmental conditions on the Property, with the exception of one leaking underground storage tank (LUST) site, discussed in Section 5. Groundwater in this area is believed to flow southwest from the North Cemetery toward the Property.

Water well databases at the federal and state level were reviewed to identify any water supply source near the Property. No water supply source is located within 1 mile of the Property.

Land uses at adjacent properties appear to have changed significantly over the years, based on a review of available aerial photographs. The Property and areas surrounding it (with the exception of the North Cemetery to the east and northeast) was open fields used for

agricultural purposes in 1951. The 1962 aerial photograph shows development on the Property, with adjacent area land uses remaining unchanged. The 1972 aerial photograph shows a significant difference from the 1962 photograph; trees and wooded areas have replaced farmlands seen in the 1962 photographs. A review of Colt State Park history (http://www.riparks.com/colthistory.htm) reveals the 465 acres of land for the park was purchased in 1965. The 1972, 1976, 1981, and 1992 aerial photographs indicated little change in the adjacent property land use. Based on a 1992 aerial photograph and the site survey, no changes from the 1993 aerial were noted.

5 Review of Regulatory Information

An essential component of an ECP is the review of records and databases containing information on the Property and adjacent properties. The review includes reasonably obtainable federal, state, and local government records, and is intended to identify a release or likely release of any hazardous substance or any petroleum product, which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product to the Property.

The majority of the regulatory information for this ECP was obtained from EDR on July 28, 2006. EDR provides a regulatory database summary that consolidates standard federal, state, local, and tribal environmental record sources based on ASTM-recommended minimum search distances from the Property.

All findings reported in Sections 5.1, 5.2, and 5.3 are from the EDR report unless otherwise noted. A copy of the complete EDR report is included in Appendix E.

5.1 Federal Environmental Records

5.1.1 Federal National Priorities List Sites within 1 Mile

USEPA maintains a record of the nation's worst uncontrolled or abandoned hazardous waste sites, known as the National Priorities List (NPL). Sites on the NPL undergo long-term remedial action under CERCLA. The USAR Center is not an NPL site, nor were any such sites located within 1 mile of the Property.

5.1.2 Federal Comprehensive Environmental Response, Compensation and Liability Act Information System Sites within 0.5 Mile

The CERCLA Information System (CERCLIS) contains data on potentially hazardous waste sites that have been reported to USEPA by state, municipalities, private companies, and private persons, pursuant to Section 103 of the Act. CERCLIS contains sites that either are proposed to be or are on the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL.

The USAR Center is not a CERCLIS site, and there are no CERCLIS sites located within 0.5 mile of the Property.

5.1.3 Resource Conservation and Recovery Act Corrective Action Sites within 1 Mile

Resource Conservation and Recovery Act (RCRA) corrective action sites (CORRACTS) represent facilities that have generated or managed hazardous wastes and require corrective action. The USAR Center is not a CORRACTS.

One CORRACTS was identified within 1 mile of the USAR Center. Albin Manufacturing Inc. is located within 1 mile of the USAR Center, approximately 3,742 feet northeast of the

Property. While there are violations associated with the hazardous waste satellite accumulation area for this site, there is no ongoing investigation or remediation that indicates offsite migration from this adjacent property that will affect the environmental condition of the Property.

5.1.4 RCRA Treatment, Storage, and/or Disposal Sites within 0.5 Mile

RCRA defines and regulates sites that generate, transport, store, treat, and/or dispose (TSD) of hazardous wastes. The RCRA Information System (RCRIS) includes selective information on these sites.

The USAR Center is not a RCRIS TSD site, and there are no such sites located with 0.5 mile of the Property.

5.1.5 Federal RCRA Small and Large Quantity Generators List within 0.25 Mile

Conditionally exempt small quantity generators are defined as facilities generating less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. RCRA small quantity generators are defined as facilities generating between 100 and 1,000 kg of hazardous waste per month. A facility generating more than 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste per month is defined as a large quantity generator.

The USAR Center is not listed as an RCRA-registered small or large quantity generator, and there are no such sites located within 0.25 mile of the Property.

5.1.6 Federal Emergency Response Notification System List

The Federal Emergency Response Notification System (ERNS) list maintains information on reported releases of oil and hazardous substances. The USAR Center is not on this notification list.

5.2 State and Local Environmental Records

Most of the information presented in this subsection was obtained from the EDR report. Additional information was obtained from online database searches of the Rhode Island's Web site. Occasionally, state and local agency personnel were interviewed via telephone to answer questions about any database issues.

5.2.1 State Lists of Hazardous Waste Sites within 1 Mile

The USAR Center is not on the state list of hazardous waste sites. Seven adjacent properties within 1 mile of the Property were listed as having a hazardous waste site. None of these sites has violations relating to hazardous waste against it and are thus believed not to pose an environmental threat to the Property.

5.2.2 State-Registered Landfills or Solid Waste Disposal Sites within 0.5 Mile

According to the database search, the USAR Center does not have an active or regulated solid waste landfill, incinerator, or transfer station within the Property boundaries. No adjacent properties within 0.5 mile of the USAR Center have a solid waste landfill, incinerator, or transfer station.

5.2.3 State-Registered Leaking UST Sites within 0.5 Mile

In addition to information obtained from the EDR report, the Rhode Island Division of USTs maintains a comprehensive database of LUST sites. The USAR Center is not listed in the state LUST database.

One LUST site is located within 0.5 mile of the Property. Bristol Express (formerly Sunoco) is located approximately 1,891 feet (0.36 mile) east of the Property on Hope Street and has an active LUST record that requires investigation and remediation. This site is upgradient of the Property, and therefore, any offsite migration from this site may potentially impact the USAR Center. Details of offsite migration, investigation, and remediation at this site were not available for preparation of this report.

5.2.4 State-Registered UST Sites within 0.5 Mile

Review of the EDR report and the state of Rhode Island's UST database indicates that there are no UST sites within 0.5 mile of the USAR Center.

5.2.5 State Spills Incidents

The USAR Center is not listed on the Rhode Island state petroleum spill list.

5.2.6 Records of Contaminated Public Wells within 0.5 Mile

The City of Bristol Water and Sewer Board does not own or operate any municipal water supply wells within 0.5 mile of the USAR Center.

5.2.7 Voluntary Remediation Program Sites within 0.5 Mile

The USAR Center is not listed in Rhode Island's Brownfield Program (the successor to the Voluntary Cleanup Program). No sites located within 0.5 mile of the Property are listed as being in the Brownfield Program, either.

5.2.8 State-Registered Bulk Fertilizer and Pesticide Storage Facilities within 0.25 Mile

The USAR Center is not registered with the state as a bulk fertilizer and pesticide storage facility. Additionally, no adjacent properties within 0.25 mile were registered as one of these facilities.

5.3 Unmapped Sites

Some sites within the databases EDR searches have the same zip code as the USAR Center, but no street address. These sites, known as unmapped or orphan sites, cannot be mapped from the EDR results alone. Additional efforts described herein were made to locate these sites and assess their environmental importance to the USAR Center.

Using the mapping utility provided at maps.google.com, the locations of the orphan sites were identified and mapped. One of the sites, Buttonwood Industrial Park, was found on the Rhode Island State Hazardous Waste Site (SHWS) list, but the site is located approximately 1.3 miles southeast of the Property. This distance is outside the 1-mile ASTM

search radius distance. None of the other orphan sites is listed on any other federal, state, or local environmental databases searched during the data gathering process.

5.4 Summary of Properties Evaluated to Determine Risk to the Property

To summarize Sections 5.1 through 5.3, two separate properties, near or adjacent to the USAR Center, were evaluated as potential risk properties to the Property. These adjacent properties evaluated were identified as a result of information obtained during area reconnaissance, interviews, and regulatory database searches, and are summarized below in Table 1.

Based on an evaluation of available site information and details concerning the properties listed in Table 1, one of the facilities evaluated (Bristol Express) exhibits significant environmental conditions that may affect the environmental conditions at the Property.

TABLE 1
Properties Evaluated for Potential Environmental Risks
Quinta-Gamelin USAR Center, Bristol, Rhode Island

Company/Site	Database	Elevation Relative to Property?	Potential Impact on the Property?	Comments
Bristol Express (formerly Sunoco)	LUST, UST	Higher	Yes	Active LUST investigation/ remediation. No violations associated with USTs.
Albin Manufacturing Inc.	RCRA SQG, FINDS, and CORRACTS	Higher	No	Although violations exist for this site, all violations have been brought into compliance.

CORRACTS—Resource Conservation and Recovery Act corrective action sites
FINDS—Facility Index System/Facility Registry System
LUST—leaking underground storage tank
NFA—no further action
RCRA SQG—Resource Conservation and Recovery Act small quantity generator
UST—underground storage tank

6 Site Investigation and Review of Hazards

Findings documented in the following subsections are based on the August 1, 2006, site reconnaissance, a review of available site records, and information obtained from USAR personnel.

6.1 USTs/ASTs

A heating oil UST associated with this facility was removed in 1988, and an NFA report was submitted to RIDEM. The agency approved the NFA and issued a closure certificate dated May 16, 1988.

Two other USTs were removed in 2000, but no closure record was located during this ECP survey. A record search with the RIDEM UST Office revealed a Closure Inspection Checklist completed on October 5, 2000, for the tanks removal. The inspection checklist requested a closure assessment be conducted at the tank removal locations. A follow-up telephone conversation with a Senior Inspector with the RIDEM UST program, confirmed there is no record to indicate that the request of closure assessment has been performed, and thus, the tanks are not considered closed by his office, as there is no closure certificate for the two tanks.

Three 1,000-gallon propane ASTs are located at the Property. The ASTs were installed around 1998 to store propane gas for heating the buildings on the Property. At the time of the reconnaissance survey, the exterior of the tanks were in good condition. Photograph 3 in Appendix B shows the placement of and current condition of these tanks.

6.2 Inventory of Chemicals/Hazardous Substances

Available records indicate that hazardous materials have been stored at this facility. These materials include batteries, old paint, pesticides, and corrosive materials (a chemical agent set). During the 2006 site reconnaissance, paint and common household janitorial supplies were observed stored in the storage cage in the OMS building.

The USAR Center uses a licensed commercial company for herbicide and pesticide management.

6.3 Waste Disposal Sites

The draft ECAS report (Fort Devens, 1993, Section 1.2.7) made a reference to a past landfill on the site. It states, “The facility has not been screened for past use of hazardous substances and the potential for contamination, especially since a portion of the site is suspected to have been used as a landfill in the past.” No additional documentation or proof of the existence of the landfill was found. Available aerial photographs dating back to 1951 were

reviewed. Conclusive evidence of whether or not a portion of the Property was part of a landfill was not ascertainable from the photographs.

6.4 Pits, Sumps, Drywells, and Catch Basins

During the site reconnaissance, many storm drains were observed in both the MEP and POV parking lots. Review of available records shows all these are connected to an outfall that discharges to a seasonal pond west of the Property (ENSR, 1996). The same report could not establish the outfall point for the drain and associated sump in the center of the wash rack area. During the 2006 site reconnaissance, there was a crack in the concrete extending across the wash rack, adjacent to the drain (Photograph 2, Appendix B). The photograph also shows the area around the drain has been repaired, and based on the elevated level of the current drain, repairs or modifications to the sump are likely to have occurred.

ENSR (1996) also identified a work pit inside the OMS building. According to this report, site personnel indicated there was a drain associated with the work pit. ENSR could not confirm the existence of the drain in the work pit. Photograph 5 in Appendix B shows the outline of one corner of the former work pit in an area currently used for the storage of dry goods. A photograph representing the inside of typical work pits found in facilities within the 94th RRC was made available for review for this report. The photograph indicated a sump at the bottom of the pit, and RRC personnel indicated the sump was sealed.

6.5 Asbestos-containing Material

A 1994 survey evaluation of ACM (Covino, 1998) at this facility found ACM in both the main building and the OMS building. The survey found non-friable ACM in the exterior window caulking of the main building. Non-friable ACM also was found in the asbestos cement board above the ceiling-mounted heater in the OMS building. The same survey also found two types of friable ACM in the OMS building—rolled paper-type pipe insulation and associated mud fittings, and white vibrations dampener cloth. The consultant (Covino Environmental) recommended asbestos removal from the OMS building.

Based on the onsite reconnaissance, the paper-type pipe insulation and associated mud fitting and the asbestos cement board above the ceiling-mounted heater in the OMS building appears to have been removed since the time of the ACM survey. There is, however, no record to support the removal of ACM from any part of the facility.

6.6 PCB-containing Equipment

One pad-mounted transformer is located on the Property, just east of the exterior west wall of the main building. No label indicating polychlorinated biphenyl (PCB) content was seen on the transformer unit. Personnel with National Grid Electric Company state that the transformer is not suspected of containing PCBs because of its year of manufacture. During the August 2006 site reconnaissance, the unit appeared to be in good condition, and no evidence of leakage was observed.

During the August 2006 site visit, older-style fluorescent light fixtures were observed in the main and OMS buildings. Older fixtures, especially those that are original to the Property, could potentially contain PCBs.

6.7 Lead-based Paint

No record exists to indicate an LBP survey has been conducted for this Property. Because the buildings on the Property were constructed before 1981 (except the main building that was demolished and rebuilt in 1988), the drill hall and OMS building are presumed to contain LBP. At the time of the site reconnaissance, the painted surfaces at this facility were in good condition, except for the wood fascia above the vehicle bay doors of the OMS building. Photograph 1 in Appendix B illustrates the condition of the paint.

6.8 Radon

Based on a review of available records, no site-specific radon survey has been conducted for the USAR Center. An EDR search indicated no heightened level of concern for radon gas in the area the USAR Center is located. The USEPA Map of Radon Zones for Bristol County, Rhode Island, confirms that the county lies within the low-priority zone, Zone 3, which has a predicted average indoor screening level lower than USEPA's recommended maximum allowable exposure level of 4.0 picoCuries per liter (pCi/L). The EDR report provides radon test results for the 02809 zip code area. The results concluded that the basements in the area had an average radon activity level of 2.760 pCi/L, while first floor living areas had an average level of 1.600 pCi/L.

6.9 Munitions and Explosives of Concern

Based on a review of available records, the site reconnaissance, and interviews with USAR Center personnel, there is no indication that munitions and explosives of concern (MEC) are or were present at the Property. The small arms and ammunition were properly stored in arms vaults, and do not constitute MEC. There also was an indoor firing range on the Property, but it appears to have been thoroughly cleaned up (Photograph 7, Appendix B). The space is now used as clean office space, containing desks, files, and computers. The range cleanup record was not available for this ECP report.

6.10 Radioactive Materials

Radiological material may have been used and stored onsite because there is a caged storage space designated as a nuclear, biological, and/or chemical (NBC) room in the OMS building (Photograph 6, Appendix B). Site personnel, however, stated that no radioactive material is currently stored on the Property and could not confirm if radioactive material has historically been stored on the Property. The cage space is now used to store office supplies such as stationary, copier paper, printer ink, and toner. In addition, items such as sights, compasses, and watches, which may have had radiological components, may have been stored here in the past.

A radiological survey has been conducted for this Property, but contacts with the 94th RRC Safety Office indicated that this information was not reasonably available.

7 Review of Special Resources

7.1 Land Use

The City of Bristol's Community Development and Zoning Department has designated this Property and surrounding properties as R-1, Residential. The site is located in a mixed-used area that includes recreational and residential land uses.

7.2 Coastal Zone Management

The Rhode Island Coastal Resources Management Committee is the lead agency for the Rhode Island Coastal Management Program. This Property is not included in the coastal zone management plan, nor is it in a coastal zone.

7.3 Wetlands

According to the 1988 U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory maps and the Rhode Island State Wetlands, the Property is part of the PF01B Bristol jurisdictional wetlands area described as freshwater forested/shrub wetland. The Natural Resources Survey (ESNR, 1996) also identified approximately 0.09 acre Temporary (E,F) Palustrine type wetlands on the Property. Figure 11 in Appendix A is an enlarged section of the National Wetlands Inventory map showing the PF01B Bristol jurisdictional wetland and location of the Property.

7.4 100-year Floodplain

A review of the FEMA digital Flood Hazard Area map indicates that the Property lies outside the 100-year floodplain. Figure 4 in Appendix A provides a map of the 100-year floodplain elevations located in the immediate vicinity of the Property.

7.5 Natural Resources

The *Floor and Storm Drains Inventory and Natural Resources Inventory* (ENSR, 1996) noted that this USAR Center did not contain any key rare species or any endangered or threatened plants and animals.

7.6 Cultural Resources

The Rhode Island Historical Preservation and Heritage Commission Historic Property Data Collection Form (Appendix D) provides information about a cultural resources survey that Public Archaeology Laboratory, Inc. (PAL) performed for this site in March 1995. The purpose of the survey was to review historical information, setting and landscape, cultural resources, architectural information, and structure descriptions for this Property. Each

structure also was assessed for its eligibility to the National Register of Historic Places (NRHP). Overall, neither building at the Property was found to meet the criteria for inclusion in the NRHP. Both buildings were classified as being non-contributing elements within the Poppasquash Farms National Historic District.

Chapter 7 of the Rhode Island Project Facilities reviewed previous archaeological studies and verified their conclusions that much of the Property had been significantly disturbed, and therefore had low sensitivity for archaeological resources. The northeast corner and possibly the southern fence line of the Property, however, are believed to have a moderate to high sensitivity for intact cultural resources, and therefore an archaeological survey of these areas was recommended in the report.

8 Conclusions

The following information was obtained after conducting an environmental record search, including records for adjacent properties, reviewing available historical information, conducting interviews with knowledgeable parties connected with the Property or with state and local agencies, and conducting a reconnaissance of the Property and adjacent properties.

8.1 Review of Findings

Hazardous Substances. Hazardous substances pursuant to CERCLA 101(14) (42 United States Code 9601(14)) were used and stored at the Property in amounts necessary to support unit-level vehicle and building maintenance activities.

Available records indicate that batteries, old paint, pesticides, and corrosive materials (a chemical agent set) were historically stored at the Property. During the 2006 site reconnaissance, paint and common household janitorial supplies were observed stored in the storage cage in the OMS building.

Available documentation also states that a portion of the site is suspected to have been used as a landfill in the past. The potential for contamination due to the suspected landfill activities has not been investigated.

USTs/ASTs. Three heating oil USTs were located at this Property, and all three have been removed. An NFA report and a closure certificate dated May 16, 1988, are available for one tank. Closure certifications for the other two tanks (1,000- and 3,000-gallon) have not been located, even after contacting RIDEM.

Three 1,000-gallon propane ASTs were installed in 1992 to store propane gas that is used to heat the buildings on the Property. The tanks' exteriors were in good condition at the time of the August 2006 site reconnaissance visit.

Non-UST/AST Petroleum Storage. Available records (ECAS Report, June 1994) indicate that petroleum, oil, and lubricants (POL) have been stored in drums at this facility. An area of stressed vegetation on the north side of the OMS building was noted in the 1992 ECAS report. Facility personnel indicated that drums of waste automotive products were once stored there. While a site investigation was requested to assess the cause of the stressed vegetation, it is unknown whether an investigation was performed.

A 1994 drain inventory (ESNR, 1994) noted a work pit within the OMS (Photograph 5, Appendix B, which shows one corner of the former pit). The report also indicated that facility personnel stated that the work pit contained a floor drain at the bottom. ESNR personnel conducting the inventory could not visually confirm the presence of the floor drain. Outfall for this floor drain was not verified during the drain inventory. With the exception of the floor drain in the arms vault, which had been removed, and the unconfirmed work pit floor drain, all other floor drains were verified as still in use and

discharged to the leach field. If the vehicle maintenance shop floor drains were connected to the leach field, oil, grease, and cleaning solvents may have been directed from the floor drain in the vehicle maintenance shop to the septic system.

As part of the ECAS during a 1992 inspection by the 416th Engineer Command, Fort Devens Facility Engineering Team, a pungent diesel odor was detected in the drain/sump area of the wash rack. During the August 2006 site reconnaissance, there was a crack in the concrete extending across the wash rack, adjacent to the drain (Photograph 2, Appendix B). The photograph also shows the area around the drain has been repaired, and based on the elevated level of the current drain, repairs or modifications to the sump likely occurred. In addition, during the 1996 inspection, the outfall of the wash rack drain could not be verified, and there is no indication that the wash rack drained to an OWS.

During the 2006 site reconnaissance, however, no petroleum storage other than in USTs or ASTs was observed on the Property.

PCBs. One pad-mounted transformer unit, in good condition, is located on the Property. National Grid Electric Company personnel state that the transformer is not suspected of containing PCB because of its year of manufacture.

ACM. A 1994 survey evaluation of ACM at this facility (Covino, 1998) found friable and non-friable ACM in the OMS and main buildings. The consultant (Covino Environmental) recommended asbestos removal from the OMS building.

Based on the 2006 site reconnaissance, the paper-type pipe insulation and associated mud fitting and the asbestos cement board above the ceiling-mounted heater in the OMS building appear to have been removed since the time of the ACM survey.

LBP. No record exists to indicate an LBP survey has been conducted for this Property. Because the buildings on the Property were constructed before 1981 (except the main building that was demolished and rebuilt in 1988), the drill hall and OMS building are presumed to contain LBP. At the time of the site reconnaissance, the painted surfaces at this facility were in good condition, except for the wood fascia above the vehicle bay doors of the OMS building. Photograph 1 in Appendix B illustrates the condition of the paint.

Radiological Materials. It is not clear if radiological materials have been used and stored onsite. A storage cage in the OMS building is designated "NBC Room." Site personnel confirmed that radiological materials are not currently stored in the cage. The storage cage is currently used to store office supplies such as stationary, copier paper, printer ink, and toner. In addition, according to interviewees, items such as sights, compasses, and watches, which may have had radiological components, may have been stored here in the past. A radiological survey has been conducted for this Property, but contacts with the 94th RRC Safety Office indicated that this information was not reasonably available.

Radon. Radon surveys have not been performed for the Property; however, the USEPA Map of Radon Zones for Bristol County, Rhode Island, confirms that the county lies within the low-priority zone, Zone 3, which has a predicted average indoor screening level lower than USEPA's recommended maximum allowable exposure level of 4.0 pCi/L.

MEC. Available records do not indicate any MEC formerly located at this Property. In addition to a small arms vault, there was an indoor firing range located at the northwest

corner of the main building. The range has been decommissioned and cleaned and is now used as office space. No evidence of MEC was observed during the 2006 site reconnaissance.

Surrounding Properties. Potential environmental sites of concern, located within the 1-mile ASTM search radius from the Property, were evaluated. There has been a petroleum product release from Bristol Express (formerly Sunoco) located approximately 0.4 mile east of the Property. There is active remediation of this upgradient LUST site; therefore, there is the potential for the release to impact the Property. Reasonably available information, however, did not define the extent of the POL plume and thus does not provide sufficient evidence that it has affected the Property.

Wetlands and Floodplain. According to the 1988 USFWS National Wetlands Inventory maps and the Rhode Island State Wetlands, the Property is part of the PF01B Bristol jurisdictional wetlands area described as freshwater forested/shrub wetland. Figure 11 in Appendix A is an enlarged section of the National Wetlands Inventory map showing the PF01B Bristol jurisdictional wetland and location of the Property. The Property is not located within a 100-year floodplain or within a coastal zone.

Threatened and Endangered Species. The USAR Center does not contain any key rare species, or any endangered or threatened plants and animals.

Archaeological and Historical Resources. Neither building at the Property was found to meet the criteria for inclusion in the NRHP. Both buildings were classified as being non-contributing elements within the Poppasquash Farms National Historic District.

8.2 Environmental Condition of Property

Findings of this ECP report were based on reasonably available environmental information; interviews with site, state, and local personnel; review of previous environmental studies; and federal and state database and file information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products. Results also were based on visual observations of the Property and adjacent properties.

In accordance with the DoD policy issued in October 1996 on the categorization of property to be transferred using BRAC procedures (see Sherri Goodman memorandum dated 21 October 1996) and using for additional guidance the ASTM Designation D5746-98 (2002*), Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities,* the Property has been classified as Type 7. The property type is based on the following major findings:

- Possible release causing documented stressed vegetation on the north side of the OMS building. Additional documentation or further evaluation is needed on the north side of the OMS building, where drums of waste automotive products were allegedly stored for up to 3 years before 1989, and where stressed vegetation has been documented.
- During a 1992 inspection as part of the ECAS, a pungent diesel odor was detected in the drain/sump area of the wash rack. During the 2006 site reconnaissance, there was a crack in the concrete extending across the wash rack, adjacent to the drain (Photograph 2, Appendix B). The photograph also shows the area around the drain has been repaired

and based on the elevated level of the current drain, repairs or modifications to the sump likely occurred. No documentation was reasonably available to confirm there has not been a release from the crack or repaired drain.

- Lack of verified closure documentation for USTs. During the 2000 removal of the two heating oil USTs, RIDEM required that a closure assessment be performed. RIDEM has no record of the assessment having been performed, and thus no closure certificate for these tanks has been located.
- Adjacent property may impact the USAR Center. Depending on the remediation status and investigative findings of the Bristol Express site investigation, more information is needed on this site's potential environmental impact on the Property.
- Additional evaluation may be needed regarding the alleged landfill that may have been on the Property. Available aerial photographs dating back to 1951 were reviewed. Conclusive evidence of whether or not a portion of the Property was part of a landfill was not ascertainable from the photographs.
- Property has its own verified septic tank and leach field.

9 References

Persons Contacted

- Gregory Yekhtikian, RIDEM, UST Inspector, 401-222-6800, August 17, 2006.
- Michael Cote, RIDEM, UST Inspector, 401-222-6800, August 17, 2006.
- Anthony Silva, Superintendent, Division of Water Pollution, City of Bristol, 401-253-8877, September 1, 2006.
- Edward Tanner, Principal Planner and Zoning Officer, City of Bristol Division of Zoning, 401-253-7000 ext. 128, September 1, 2006.
- Peter Harley, National Grid Electric Company, Lead Senior Environmental Engineer, 401-784-7490, August 16, 2006.

Resources Consulted

- Aerial photographs provided by Rhode Island University dated 1951, 1962, 1972, 1976, 1981 and 1992
- National Wild and Scenic Rivers, http://www.nps.gov/rivers/wildriverslist.html#ny.
- USEPA Map of Radon Zones, http://www.epa.gov/radon/zonemap.html.
- FEMA Flood Hazard Insurance Map, http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView.
- Federal regulatory databases
  - National Priorities List (NPL), April 20, 2006
  - Proposed NPL Sites, April 19, 2006
- State and local regulatory databases
  - Department of Environmental Management Underground Storage Tank Program File, June 2006
  - Rhode Island Brownfield Inventory
  - Rhode Island State Hazardous Waste Sites (http://yosemite.epa.gov/r1/npl_pad.nsf/SelectedByState?OpenForm&View=Rhode%20Island)
- City of Bristol, Rhode Island
- Rhode Island Department of Environmental Management (RIDEM) http://www.dem.ri.gov/programs/benviron/waste/index.htm

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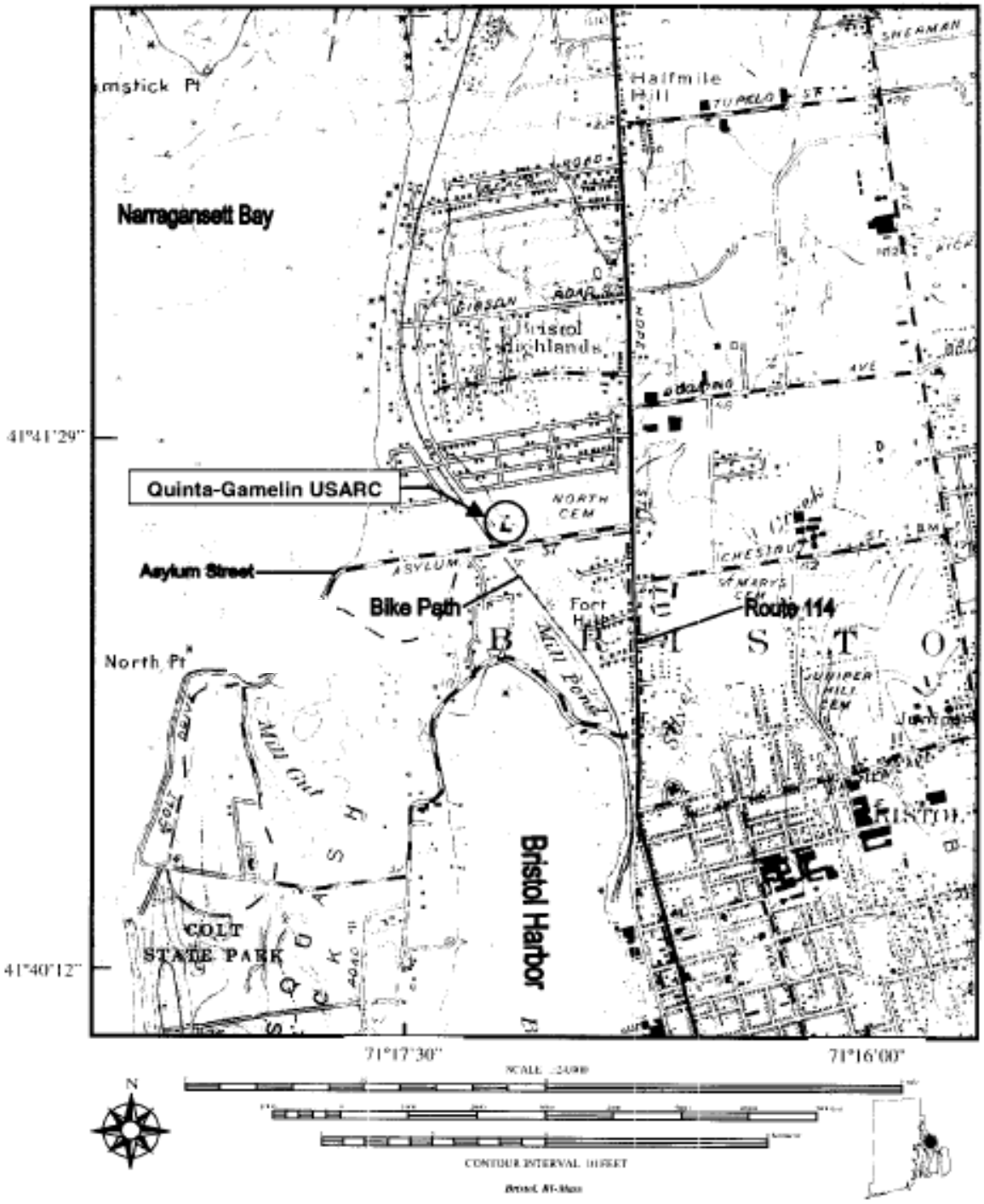
Public Archaeology Laboratory, Inc. (PAL). Date Unknown. Rhode Island Project Facilities.

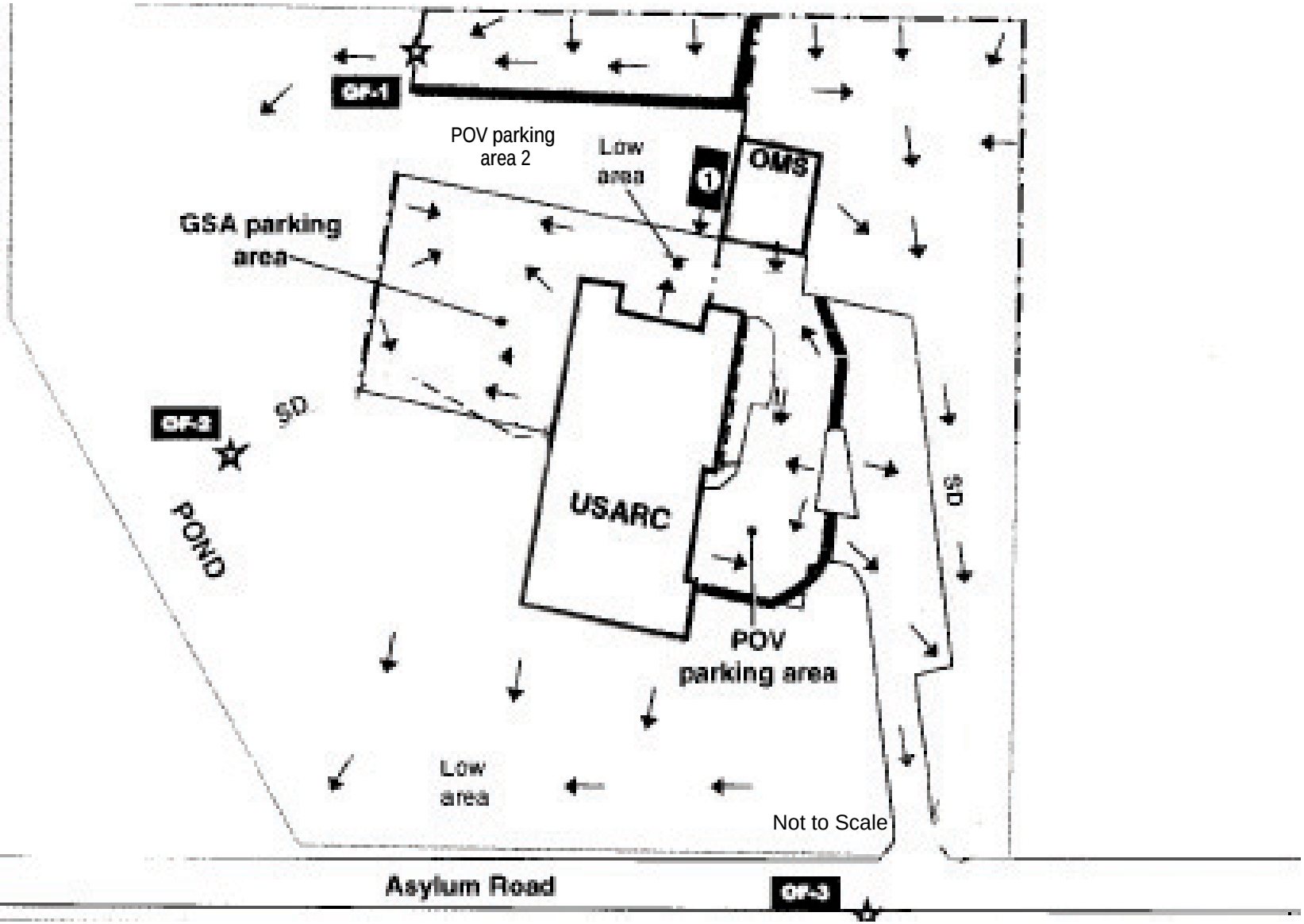
United States Geological Survey (USGS). 2000. Stormwater Pollution Prevention Plan, Quinta-Gamelin U.S. Army Reserve Center. June.

Appendix A
Figures



SOURCE: USGS

FIGURE 1
General Site Location Map
Phase I ECP Report



LEGEND

→ Storm Water Runoff

Not to Scale

Not to Scale

SOURCE: SWP3, 2005

FIGURE 2
Site Plan
Phase I ECP Report

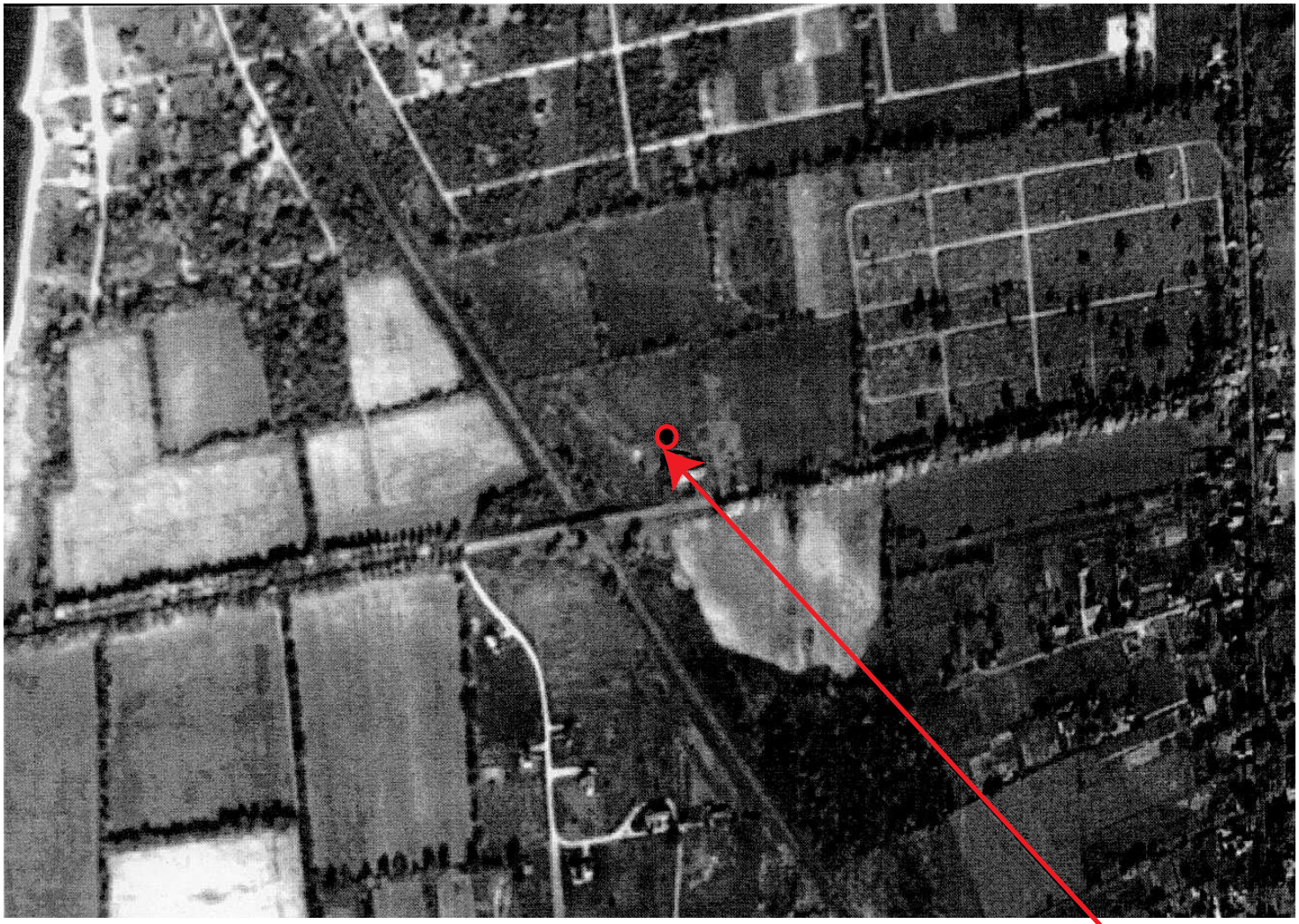


FIGURE 3
1951 Aerial
Phase I ECP Report

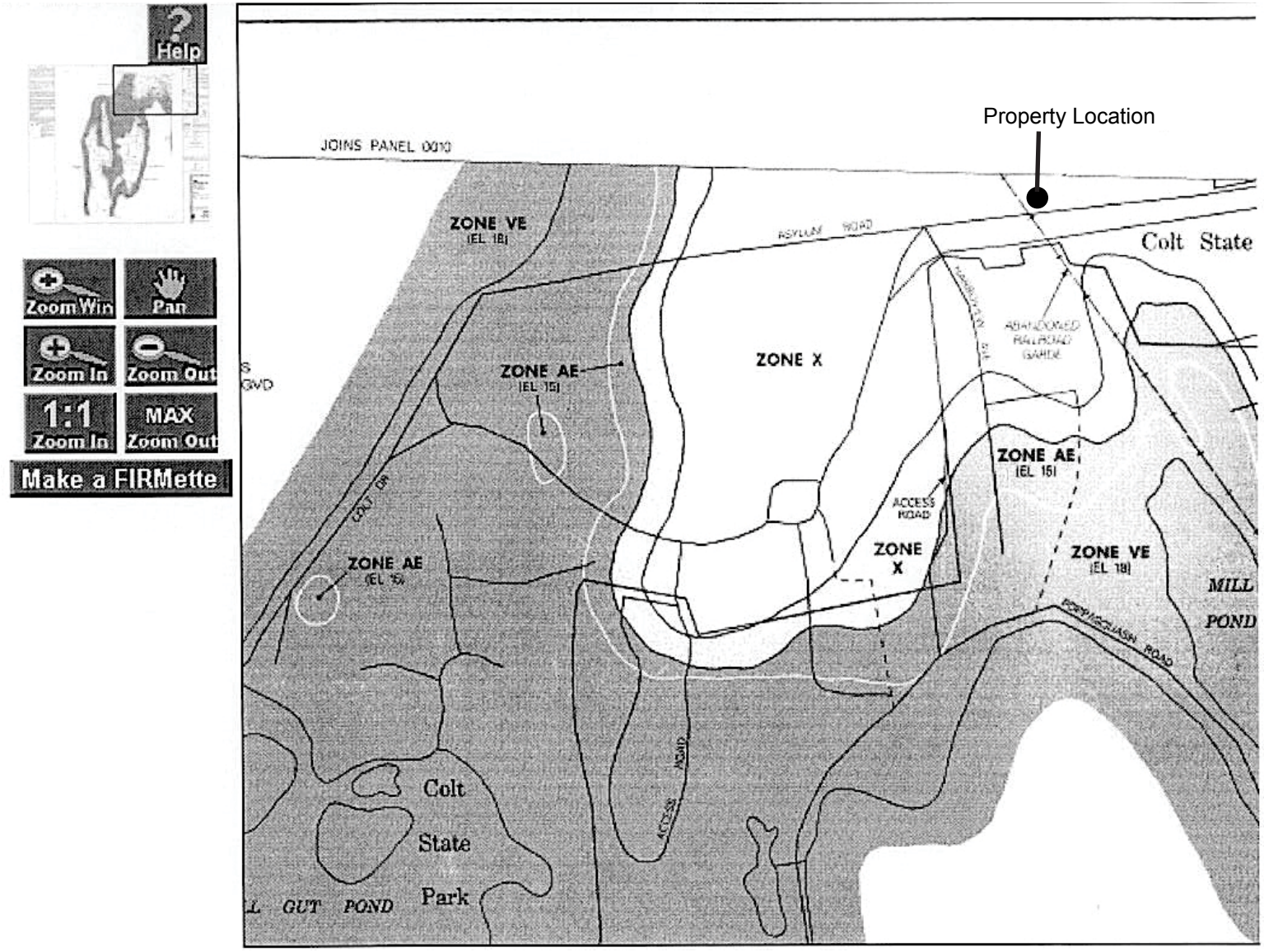


FIGURE 4
Flood Plain Map
Phase I ECP Report

FIGURE 5
1976 Aerial
Phase I ECP Report

FIGURE 6
1981 Aerial
Phase I ECP Report

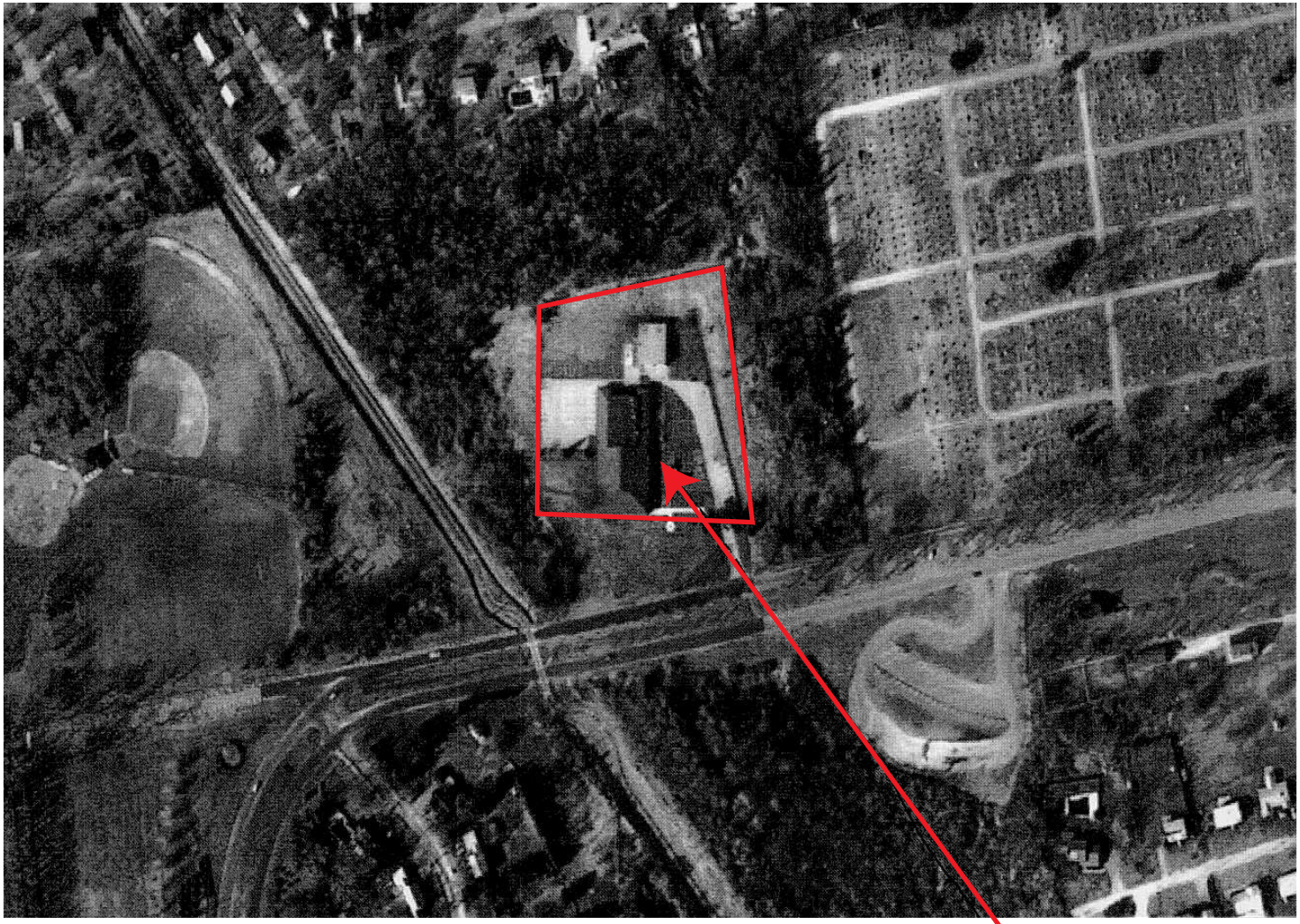


FIGURE 7
1992 Aerial
Phase I ECP Report

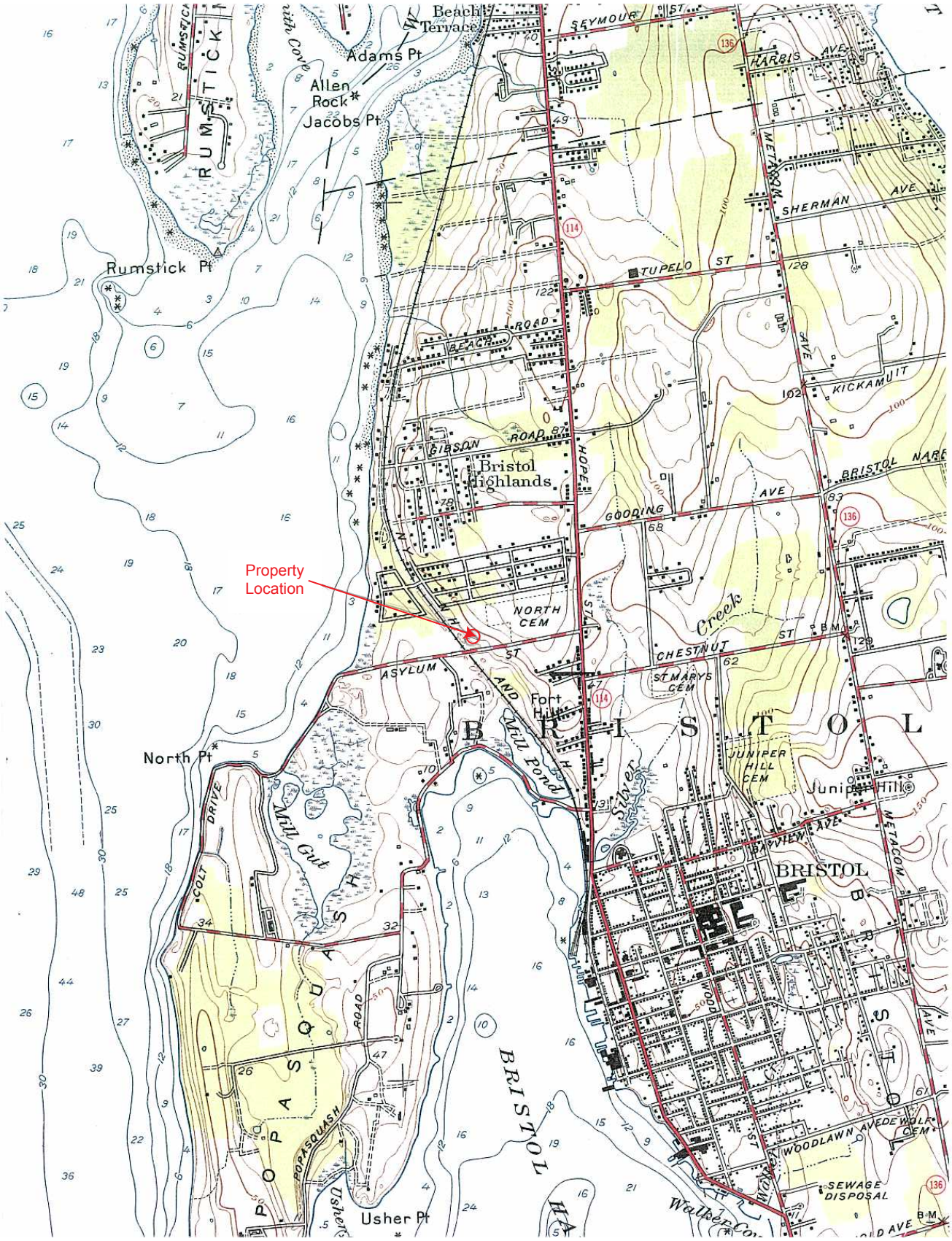


FIGURE 8
1955 Topographic Map
Phase I ECP Report

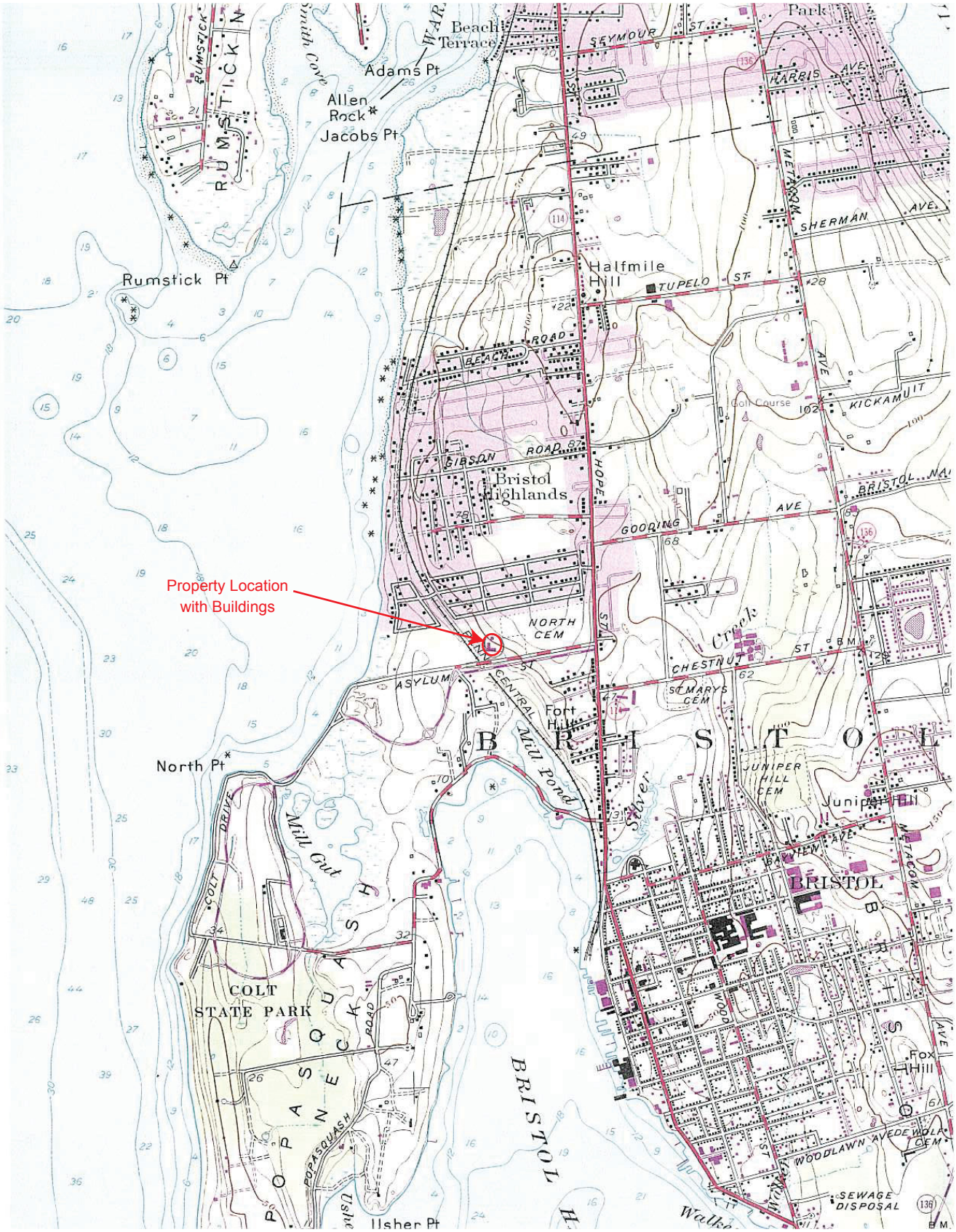


FIGURE 9
1970 Topographic Map
Phase I ECP Report

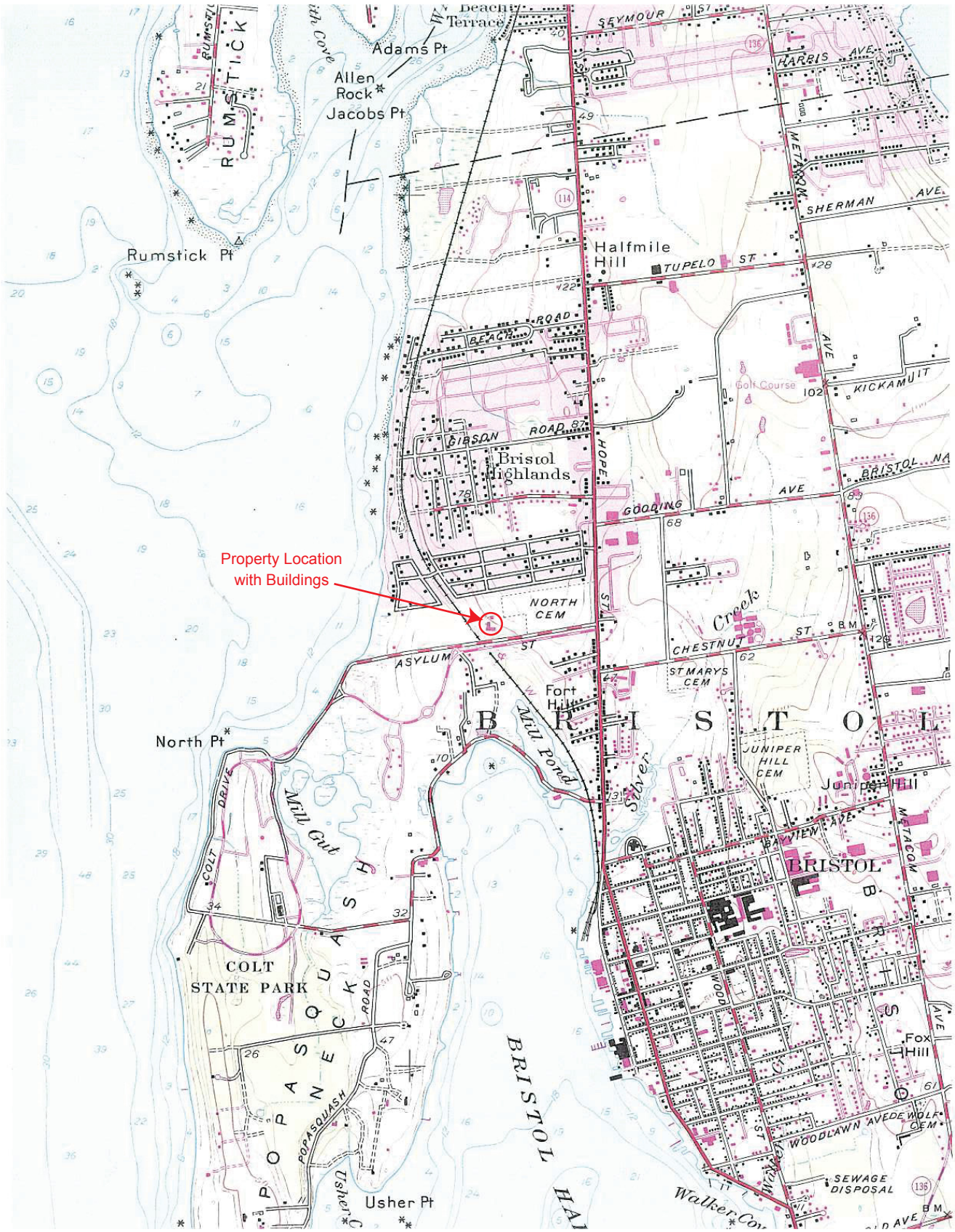


FIGURE 10
1975 Topographic Map
Phase I ECP Report

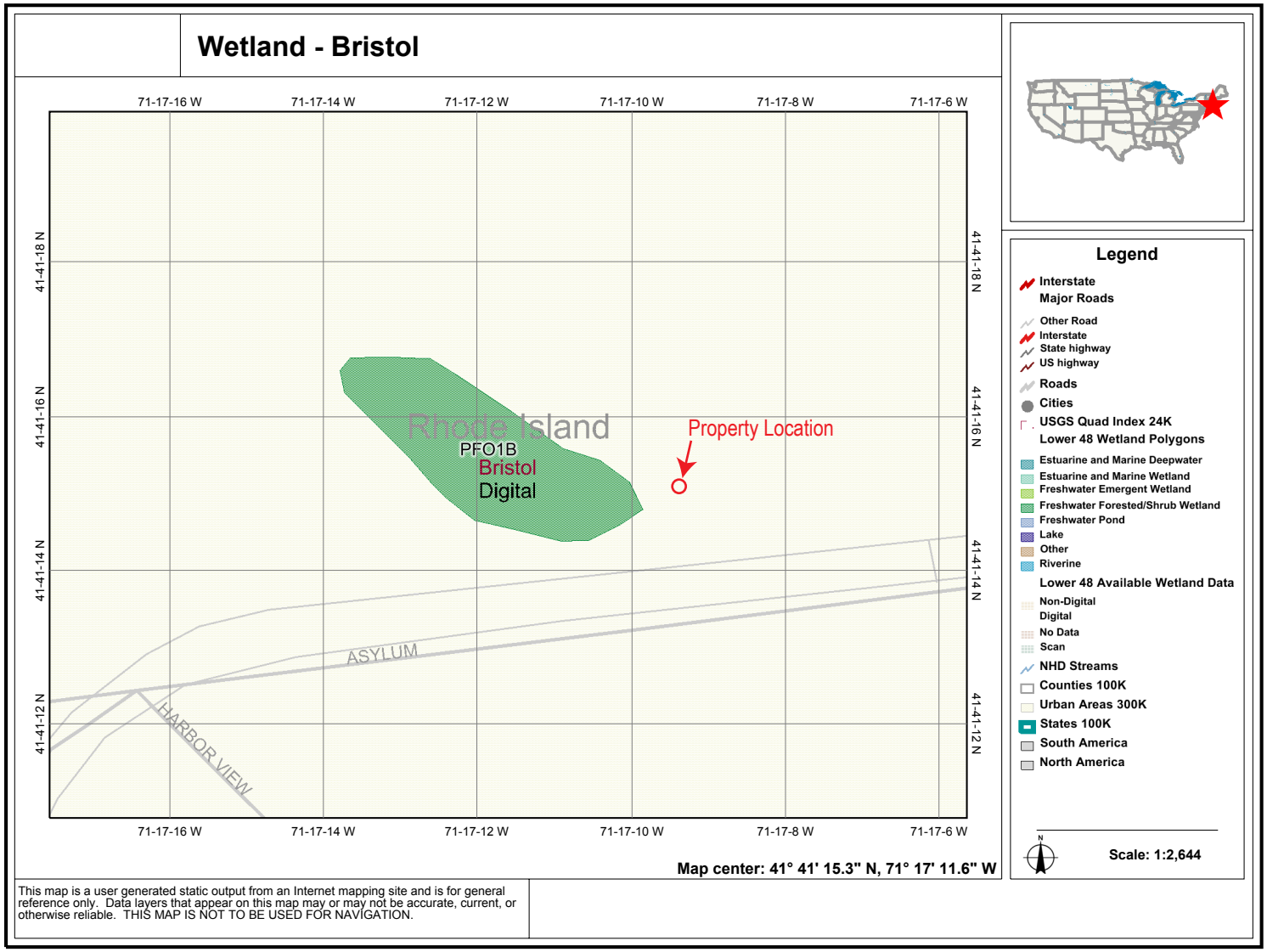


FIGURE 11
National Inventory Map
Phase I ECP Report

Appendix B
Site Reconnaissance Photographs

APPENDIX B

Site Reconnaissance Photographs

1. View facing north of current use of OMS building, showing roll-up doors and NBC Room.

2. View facing north looking at floor drain in the middle of vehicle wash rack.

3. View of 1,000-gallon propane ASTs on east side of the OMS building.

4. View facing east of the main building to the right side and the OMS building to left.

5. Current use of OMS building is for dry storage. Five-gallon buckets contain salt melt.

6. View of dry storage of Reservists' Equipment Upon Return from Active Duty. NBC (Nuclear, Biological, Chemical) Room is designated for but does not contain these items.

7. View looking north inside former indoor firing range now used as office space.

8. View of new main building looking north from Asylum Road.

9. View looking at seasonal pond located to the west of the property.

10. View looking south at low-lying area to the east of OMS building.

Appendix C

Property Acquisition Documents and Chain of Title Report

PROJECT: USAR Training Center (Bristol)

TRACT NO: A-100 (Fee)

OWNER: Town of Bristol

ACREAGE: 5.30

A certain parcel of land situated in the Town of Bristol, County of Bristol, State of Rhode Island, being more particularly bounded and described as follows:

Beginning at the intersection of the northerly side of Asylum Road and the northeasterly right of way line of the New York, New Haven & Hartford Railroad Company; thence easterly along the northerly side of Asylum Road 400 feet to a point; thence turning an interior angle of 90° and running through land of owner northerly 435.0 feet to a point; thence turning an interior angle of 90° and running westerly through land of owner 664.57 feet to the aforesaid right of way line of the New York, New Haven & Hartford Railroad Company; thence turning an interior angle of 58° 41' 30" and running southeasterly by said right of way line 509.14 feet, more or less, to the point of beginning.

Containing 5.3 acres, more or less. TRACT-A-100

TRANSFER OF CONSTRUCTION (USACE) PURCHASED PROPERTY

STATION	SERIAL NO.	JOB NO.	DATE
ARMY RESERVE TRAINING CENTER, Bristol, Rhode Island	RE-DC-204-50		January 15, 1960

TYPE OF BUILDING OR FEATURE (1)	NO. UNITS (2)	DRAWING NO. (3)	BASE DATA (Lin. Ft., Sq. Ft., Cals./Day, Etc.) UNIT (4)	BASE DATA TOTAL QUANTITY (5)	REMARKS (6)
Land Tracts		NED-PA-1285			Acquisition Authorization
Fee (1)			acres	5.30	Real Estate Directive RE-D-6553 dated 27 April 1950. Authorization P/L 738- 81st Congress Appropriation P/L 488- 82nd Congress
Tract A-100 5.30					Cost $7,700.
Attached hereto are the following:					
1. Real Property Record Form DA-5-50 with description attached.					
2. Project Map NED-PA-1285 (trip).					
3. DA Form 5-19.					

I certify that the property listed hereon has been posted to Real Property Records.

-The construction listed herein is in accordance with maps, drawings, specifications, and change orders approved by the authorized representative of the ----------
---------- Government and is being accepted on behalf of the United States of America. ----------
-It is understood that it is to be used in the ~~U.S. Army~~ service ~~of the U.S.~~ in accordance with SR 405-70-5 and Chapter IV, Orders and Regulations. ----------

ACCEPTED BY:

POST ENGINEER

COMMANDING OFFICER

Transferred by U. S. Army Engineer Division, New England, Corps of Engineers

M. L. DERRICKSON
Accountable Property Officer

ENG FORM 1 JUN 57 290 EDITION OF 1 APR 52 MAY BE USED (EM 735-345-1 & SR 735-7-3)

Banks Information Solutions, Inc.	Environmental Chain of Title
	March 5, 2007

CLIENT
Colleen Reilly **CH2M - Milwaukee** **135 S. 84th St. Ste. #325** **Phone: (414)202-5730** **Fax: (414)454-8884**

SITE
Quinta-Gamlin - Army Reserve Center **101 Asylum Rd.** **Bristol, RI** **Hardin County** **Client #: n/a** **Project #: ES11501C**

Banks Information Solutions, Inc.
P.O. Box 12851, Capitol Station/Austin, Texas 78711
1601 Rio Grande, Suite 500/Austin, TX 78703 512-478-0059 FAX 512-478-1433
E-Mail banks @ banksinfo.com www.banksinfo.com

Banks
Information
Solutions, Inc

HISTORICAL OWNERSHIP REPORT

PROPERTY DESCRIPTION

LEGAL DESCRIPTION: See attached deed.

SUBJECT PARCEL NUMBER: 617400-0000-0120

TABLE SUMMARY

DATE	DOCUMENT TYPE	GRANTOR (Seller/Lessor)	GRANTEE (Buyer/Lessee)	PARCEL or LOT #	BOOK/PAGE REFERENCE:
02/26/57	Warranty Deed	Town of Bristol	United Stated of America	Subject Parcel	129/565
07/14/1866	Warranty Deed	Lebaron B. Church & William B. Church	Town of Bristol	Subject Parcel	31/526

Banks
Information
Solutions, Inc

HISTORICAL OWNERSHIP REPORT

TITLE RESEARCH NOTES

Notes:

ASTM Notes: ASTM E 1527-05, Section 8.3 on Historical Use Information requires a review of *"Reasonably Ascertainable standard historical sources."*

"Reasonably Ascertainable means information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable."

This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful.

Banks Information Solutions, Inc. has determined that the ASTM E 1527-05, Section 8.3 requirements has been met for the subject property searched in this report. Land title records required to obtain additional information regarding the subject property were not "reasonably ascertainable" at the time of this report.

Environmental Liens: No environmental liens identified.

RESOURCES & LIMITATIONS

Banks Information Solutions, Inc. (Banks) has completed you request for an Environmental Chain of Title search for the above site. The information in this report has been produced from a limited search of the public land records and/or real property deed records of the county and state for a 50 year period up through the indicated date as shown on this report. This limited search includes only the recorded deeds and most easements and surface leases affecting the ownership history of the subject property. This report is being provided for use only as a limited part of an overall Phase I Environmental Site Assessment as performed by a qualified Environmental Engineer/Consultant as specified in the ASTM Standard E 1527-05 and as specified in the Comprehensive Environmental Response, Compensation and Liabilities Act of 1980, as amended, and may not be relied upon for any other purpose.

This report is not to be considered an Abstract, a Title Commitment, Title Opinion, Title Guaranty, or a representation of the legal status of the property. The information presented is simply a report of instruments filed of record pertaining to the above property and was obtained from the county public records. No guaranty as to the integrity or correctness of said records is implied.

Banks
Information
Solutions, Inc

HISTORICAL OWNERSHIP REPORT

GLOSSARY

There are certain terms used in Chain of Title searches, which may require clarification. This glossary is designed to provide definitions for some of the most common terms.

1. ENVIRONMENTAL LIEN:	The Environmental Lien is a record of a document/instrument filed by the City, County, State or Federal Government that prevents the conveyance of a property because of severe environmental problems existing on the premises.
2. BREAK IN CHAIN:	There may appear to be a break in the chain of title as indicated when the sequential tracing of ownership fails. An example of a break would be: *Smith to Jones. . .Jones to Wilson. . .White to Black*. The missing link is from Wilson to White. There are several possible reasons for this occurrence. • Due to the size or other physical characteristics of the property, there could be multiple owners at any time when tracing the history of the ownership of the property. • There could be an "easement title" over some portion of the property, allowing for use of that portion for a specific purpose. • There could be a "multi-percentage interest" in the property, with concurrent multiple owners making up 100% of the fee title. Then, a percentage owner deeds out his particular interest or a percentage of this interest to one or more parties. This causes a perceived break in the chain.
3. EASEMENT:	An easement is the right to enter and use another person's property: a non-possessor right to use another person's real property. Traditionally easements are granted to utility companies and other service organizations or as a right of access to another property.
4. MULTIPLE OWNERS:	When "others" or "et al" appears on the report in the owner category, it indicates multiple ownership of a single parcel, with too many names to record in summary. It is frequently used to denote more than a single owner. If the owners are a married couple, both names may appear on the report or may be denoted by "et ux". The term "owners' is usually used to indicate owners of multiple parcels, all recorded under a document that covers the multiple parcels.
5. MULTIPLE PARCELS:	Some properties are created by combining several adjoining parcels into one large parcel. When this occurs; there might be several different owners until the time of unification of the property. Sometimes the ownership appears to be cloudy until each owner conveys his/her interest to the single owner of the new larger parcel.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF ADMINISTRATION

DIVISION OF TAXATION

129/565

February 25, 1957

Estate of Domingos Garcia Pinheiro, alias

Anthony J. Dennis, Jr.

Town Hall

Bristol, Rhode Island

Under the provisions of the Inheritance Tax Law, you are hereby notified that the lien imposed under said Law upon the following described real property situate in the Town of Bristol, Rhode Island belonging to Domingos Garcia Pinheiro, alias late of Bristol, Rhode Island Date of death 12/2/56 deceased, taxed in the name of Domingos Garcia Penheiro and Mariana Jorge Penheiro as joint tenants has been discharged. Description returned upon inventory filed with the Division of Taxation:

Assessors' Plat #20, Lot #25, with buildings and improvements thereon, located in the Town of Bristol, Rhode Island.

Manner of discharge No Tax.

Fred M. Langton
Tax Administrator
(CORPORATE SEAL)

Recorded February 26, 1957

at 9:07 o'clock forenoon.

Anthony J. Dennis
Town Clerk. X

KNOW ALL MEN BY THESE PRESENTS

That the Town of Bristol, a municipal corporation of the State of Rhode Island and Providence Plantations, in the County of Bristol, in consideration of SEVEN THOUSAND SEVEN HUNDRED DOLLARS ($7,700.00), paid by the United States of America, the receipt and sufficiency of which are hereby acknowledged, grants to the said United States of America and its assigns with WARRANTY COVENANTS a certain parcel of land situated in the Town of Bristol, County of Bristol, State of Rhode Island, being more particularly bounded and described as follows:

Beginning at the intersection of the northerly side of Asylum Road and the northeasterly right of way line of the New York, New Haven & Hartford Railroad Company; thence easterly along the northerly side of Asylum Road 400 feet to a point; thence turning an interior angle of 90° and running through land of owner northerly 435.0 feet to a point; thence turning an interior angle of 90° and running westerly through land of owner 664.57 feet to the aforesaid right of way line of the New York, New Haven & Hartford Railroad Company; thence turning an interior angle of 58° 41' 30" and running southeasterly by said right of way line 509.14 feet, more or less, to the point of beginning.

Containing 5.3 acres, more or less.

IN WITNESS WHEREOF, the Town of Bristol has caused its seal to be affixed hereto and these presents to be executed on its behalf this 4th day of Sept. 1956.

DOCUMENTARY STAMPS
$8.80

TOWN OF BRISTOL

By Joseph F. Bruno
Pres.-Bristol Town Council
(TOWN SEAL)

STATE OF RHODE ISLAND

County of Bristol SS

Sept. 4, 1956

566

Then personally appeared Joseph F. Bruno an official of the Town of Bristol duly authorized by said Town to execute the within instrument and acknowledged the same to be the free act and deed of the Town of Bristol and his own free act and deed before me at the Town of Bristol, Rhode Island. Witness my hand and seal on the date above written.

Alfred N. Nunes
Notary Public
My commission expires June 30, 1961

Recorded February 26, 1957

at 12:55 o'clock afternoon.

Town Clerk.

I, FILOMENA DE PASQUALE, a widow, of the Town and County of Bristol in the State of Rhode Island for consideration paid, grant to FILOMENA DE PASQUALE, NANCY BELSITO and CARMELA DE PASQUALE, as joint tenants and not as tenants in common, of the aforesaid Town, County and State; said parties being a mother and two daughters, with QUIT-CLAIM COVENANTS

That certain lot of land with all the buildings and improvements thereon situated on the northerly side of Constitution Street in the Town of Bristol, County of Bristol and State of Rhode Island, and bounded and described as follows:

Bounded southerly on Constitution Street on which it measures forty-four (44) feet and four (4) inches, more or less; westerly on land now or formerly of Daniel W. Coggeshall on which it measures one hundred sixty-eight (168) feet and seven (7) inches, more or less; northerly on land now or formerly of Henry M. Meiggs and wife on which it measures forty-one (41) feet and six (6) inches, more or less; and easterly on land now or formerly of George W. Simmons on which it measures One Hundred and Sixty-Eight (168) feet and seven (7) inches, more or less, or however otherwise the same may be bounded and described.

Being the same premises conveyed to this grantor and Salvatore De Pasquale by deed from Percy J. McCarthy et ux dated July 11, 1950 and recorded in the Records of Land Evidence for the said Town of Bristol in Deed Book 114 at page 286.

The consideration for this conveyance is such that no documentary stamps are required.

I, Filomena De Pasquale, hereby covenant that I am a widow.

WITNESS my hand this 25th day of February 1957.

In presence of: Filomena De Pasquale

Joseph D. Accardi

STATE OF RHODE ISLAND, ETC.)
)
COUNTY OF Bristol)

In Bristol on the 25th day of February, 1957 before me personally appeared Filomena De Pasquale to me known and known by me to be the party executing the foregoing instrument, and she acknowledged said instrument, by her executed, to be her free act and deed.

Joseph D. Accardi
Notary Public.

Recorded February 26, 1957

at 3:05 o'clock afternoon.

Town Clerk.

STATION

ARMY RESERVE TRAINING [illegible]R, Bristol, Rhode Island

TRANSFER OR CONSTRUCTION ~~[illegible]~~ PURCHASED PROPERTY

SERIAL NO. RE-DC-204-60

JOB NO.

DATE January 15, 1960

TYPE OF BUILDING OR FEATURE (1)	DRAWING NO. (3)	BASE DATA (Lin. Ft., Sq. Ft., Gals./Day, Etc.) UNIT (4)	TOTAL QUANTITY (5)	REMARKS (6)
Land Tracts	NED-PA-1285			Acquisition Authorization
Fee (1)		acres	5.30	Real Estate Directive RE-D-6553 dated 27 April 1956.
				Authorization P/L 732- 81st Congress
				Appropriation P/L 488- 82nd Congress
Tract A-100 5.30				
Attached hereto are the fo[illegible]ing:				Cost $7,700.
1. Real Property Record[illegible]m DA-5-50 with description attached.				
2. Project Map NED-PA-[illegible] (trip).				
3. DA Form 5-19.				

I certify that the property listed hereon has been posted to Real Property Records.

~~The construction listed hereon is in accordance with maps, drawings, specifications, and change orders approved by the authorized representative of the [illegible] service with [illegible] in accordance with SR 735-7-3 and Chapter IVr Orders and Regulations.~~

~~Miscellaneous items to be delivered to the [illegible] (insert name of issuing agency) except for the deficiencies listed on the back of the sheet.~~

ACCEPTED BY:

POST ENGINEER

COMMANDING OFFICER

Transferred by U. S. Army Engineer Division, New England, Corps of Engineers

M. L. DERRICKSON
Accountable Property Officer

ENG FORM JUN 57 290 EDITION OF 1 APR 52 MAY BE USED

(EM 795-345-1 & SR 735-7-3)

NAB 3-1/60

Appendix D

Previous Environmental Site Assessment Reports

ASBESTOS SURVEY REPORT
AND OPERATIONS AND MAINTENANCE PLAN
QUINTA GAMELING ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

CONTRACT NO. DACA33-91-D-0006
DELIVERY ORDER NO. 42

JUNE 1998

ASBESTOS SURVEY REPORT

AND

OPERATIONS AND MAINTENANCE PLAN

QUINTA GAMELING ARMY RESERVE CENTER

ASYLUM ROAD

BRISTOL, RHODE ISLAND

JUNE 1998

CONTRACT NO. DACA33-91-D-0006

DELIVERY ORDER NO. 42

ASBESTOS SURVEY REPORT AND

OPERATIONS AND MAINTENANCE PLAN

QUINTA GAMELING ARMY RESERVE CENTER

ASYLUM ROAD

BRISTOL, RHODE ISLAND

Conducted for:

Harding Lawson Associates
(formerly ABB Environmental Services, Inc.)
Corporate Place 128
107 Audubon Road
Wakefield, Massachusetts 01880

Surveys Performed by:

Covino Environmental Consultants, Inc.
300 Wildwood Avenue
Woburn, Massachusetts 01801

CEC Project 94.01163.34

CONTENTS

PAGE

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers retained ABB Environmental Services, Inc. (ABB-ES) of Wakefield, Massachusetts to perform asbestos surveys of 41 Army Reserve Centers (ARCs) throughout New England during September, October, November, and December 1994. ABB-ES subcontracted with Covino Environmental Consultants, Inc. (CEC) to accomplish this task.

The objective of this task is twofold. First, the site-specific surveys will provide the Army with information concerning the extent of asbestos-containing building materials (ACBM) at each facility, a hazard assessment, and an operations and maintenance (O&M) plan to properly address potential concerns. Second, the summary reports prepared for each facility will provide the information necessary to plan future remediation efforts at the facilities on a worst-first basis.

The facility surveyed for this report was Quinta Gamelin ARC, Asylum Road, Bristol, Rhode Island. The facility consists of a Main Building and a Maintenance Building (OMS).

The Main Building at the site is used primarily for offices, classrooms, and a drill hall. The heating, ventilation, and air conditioning (HVAC) system includes a combination of radiators and air handlers supplied by oil-fired boiler. The Main Building, which was originally constructed 1957, was demolished and rebuilt in 1988, and contains 14,755 square feet of space.

The OMS is used for maintenance, and was constructed in 1957. The OMS contains 2,688 square feet of space. The only HVAC in the building are gas-fired, ceiling-mounted blower units.

Michael Hickey and Glenn Nelson of CEC conducted the survey on October 12, 1994 and returned to collect additional samples on December 13, 1994. The CEC inspectors performed visual inspections of all accessible interior areas, exterior areas, and rooftop areas. Observations were made for thermal system insulations, surfacing materials, and miscellaneous materials within mechanical spaces, office areas, classrooms, and maintenance areas. Whenever feasible, the spaces above suspended ceilings, within wall chases, high bay areas, etc., were also inspected. Because inspection was limited in such areas, assumptions about these areas were sometimes based on information contained in as-built drawings. No destructive sampling was conducted as part of this survey.

Representative bulk samples of each type of suspect ACBM observed were collected for laboratory analysis. To determine asbestos content, the samples were analyzed using Polarized Light Microscopy with Dispersion Staining (PLM/DS) in accordance with EPA protocol. Suspect materials were classified as ACBM if the analytical results indicated an asbestos content of greater than one percent.

EXECUTIVE SUMMARY (cont.)

Both friable ACM (materials that, when dry, may be reduced to powder by hand pressure) and nonfriable ACBM were identified at the site. Friable ACBM identified was white vibration dampener cloth, and rolled paper-type pipe insulation and associated mud fittings in the OMS Building. Nonfriable ACBM included exterior window caulking in the Main Building and asbestos-cement (transite) board above ceiling-mounted heaters in the OMS Building.

CEC's assessment of the Quinta Gamelin site indicated that the condition of ACBM located in the OMS building presents a potential hazard. Friable thermal system paper-type pipe insulation in the OMS building is in relatively poor condition, and is potentially susceptible to disturbance and fiber release. Based on the results of the assessment, remedial action is recommended at this time. To minimize potential hazards, an O&M plan (Appendix F) should be implemented to maintain ACBM remaining in place.

In addition, CEC returned to the site to perform a quality control visual inspection on July 10, 1996. A sample of suspect exterior window caulking was collected and analyzed using the PLM method. PLM analytical results indicated that the caulking contained 3% Chrysotile asbestos.

For informational purposes only, cost estimates have been provided for removing and replacing ACBM (Table 3). The total estimated cost for removing and replacing friable ACBM is $2,690. The total estimated cost for removing and replacing nonfriable ACBM is $585.

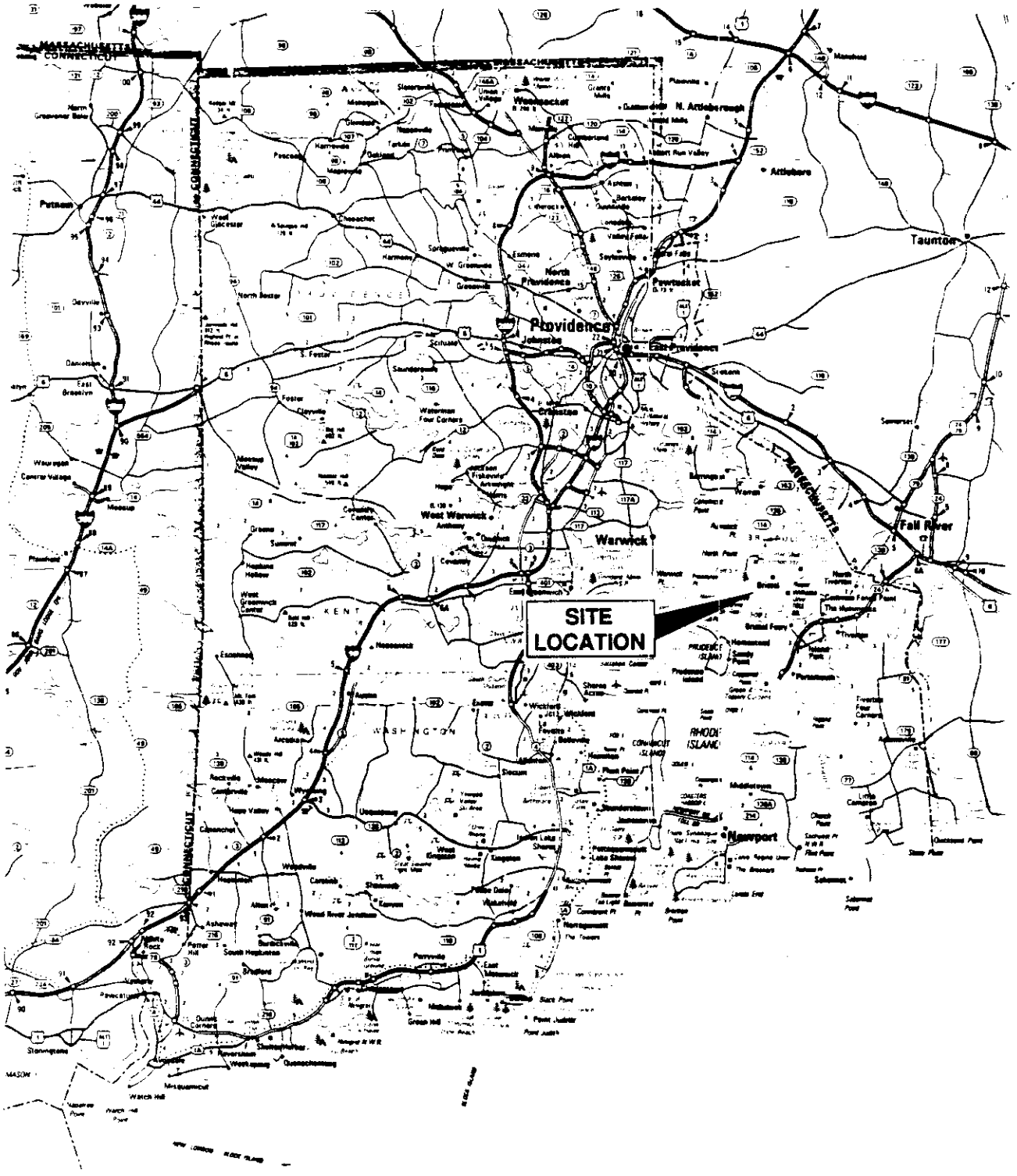
LIMITATIONS

Due to several limitations further survey work will be required if future renovation or maintenance activities occur which result in demolition of any part of the existing building structure. These limitations include:

A. Since no core samples of roofing material were collected, only exposed surfaces of the roof were inspected;

B. Potentially hidden areas, such as wall cavities, the space between fixed ceilings and the ceiling deck, internal equipment and parts, etc. may contain ACBM that was not accessible during the survey; and,

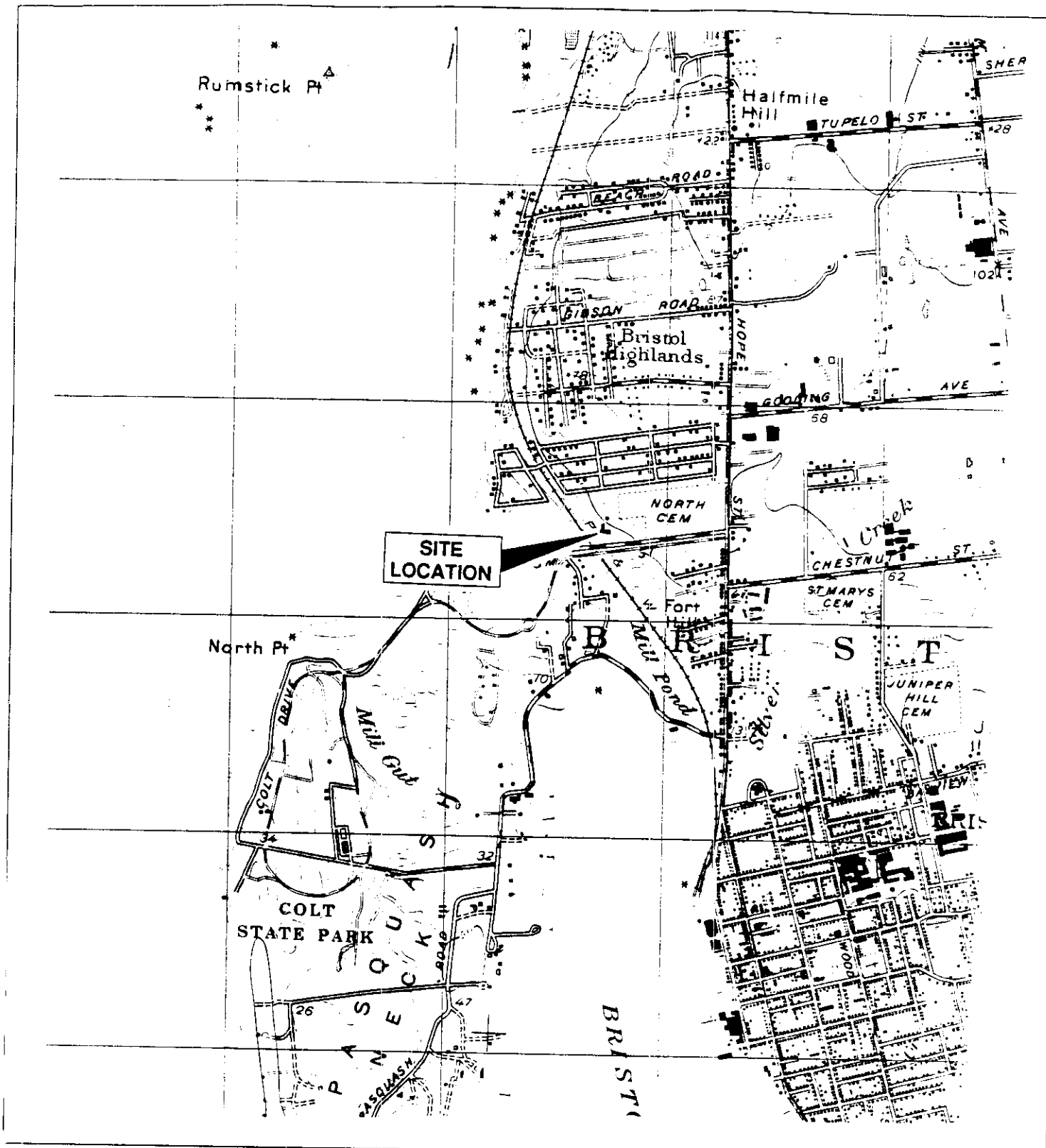
C. The inner cavity of fire doors, which sometimes contains ACBM insulation, were not inspected.



MAP DERIVED FROM RAND McNALLY.

ABB Environmental Services, Inc.

FIGURE 1
VICINITY MAP
ASBESTOS SURVEY REPORT
QUINTA- GAMELIN USARC
BRISTOL, RI



SOURCE: U.S.G.S. TOPOGRAPHIC 7.5 MINUTE SERIES: BRISTOL, R.I.-MASS. 1955 PHOTOREVISED 1970 & 1975

SCALE IN MILES 0 .5 1

SCALE IN FEET 0 1,000 2,000

QUADRANGLE LOCATION

ABB Environmental Services, Inc.

FIGURE 2
SITE LOCATION MAP
ASBESTOS SURVEY REPORT
QUINTA- GAMELIN USARC
BRISTOL, RI

GLOSSARY

1. Asbestos - Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these materials that have been chemically treated and/or altered.

2. Asbestos-Containing Material (ACM) - material composed of asbestos of any type and in any amount greater than 1% by area, either alone or mixed with other fibrous or nonfibrous materials.

3. Asbestos-Containing Building Material (ACBM) - Surfacing ACM, thermal system insulation ACM or miscellaneous ACM that is observed in or on interior structural members or other parts of a building.

4. Asbestos-Contaminated Area - Any surface/area where visibly damaged friable asbestos material is present.

5. Bulk Sample - A small portion of suspect ACM collected and placed into an airtight container for microscopic analysis.

6. Cellulose - Vegetative, plant fibers; paper, cotton, etc.

7. Fibrous Glass - Man made; spun or extruded from a resin.

8. Friable Asbestos Material - Any ACM that can be crumbled, pulverized or reduced to powder when dry, by hand pressure, and which releases asbestos particles to the environment.

9. Homogenous Area - A material that is uniform in texture and appearance, was installed at one time, and is unlikely to consist of more than one type or formulation of material.

10. Miscellaneous ACM - Any ACM which is not categorized as thermal system insulation or surfacing insulation.

11. Nonfriable Asbestos Material - Any ACM that cannot be crumbled, pulverized or reduced to powder when dry, by hand pressure.

12. Point Counting - A microscopic method of bulk sample analysis using a systematic, statistical approach to determine the percentage concentration of asbestos in a friable suspect ACM.

13. Polarized Light Microscopy - An optical microscopic technique used to distinguish between different types of asbestos fibers by their shape and unique optical properties.

GLOSSARY (cont.)

14. Resinously Bound Material - A material which is held together in a resinous matrix (eg., mastic adhesive, roof flashing, etc.).

15. Surfacing ACM - An ACM which is spray or trowel-applied to a surface for acoustical, decorative or fireproofing purposes

16. Transmission Electron Microscopy (TEM) - A method of microscopic analysis which utilizes an electron beam that is focused onto a thin sample. As the beam penetrates (transmits) through the sample, the difference in densities produces an image on a fluorescent screen from which asbestos structures can be identified and quantified.

17. Thermal System Insulation ACM (TSI) - Any ACM which is applied to heating or mechanical equipment for the purpose of retaining heat or condensation.

18. Transite - An asbestos-cement board product. Typically applied in cooling towers, above heating elements, beneath wood floors, as wall board, etc.

INTRODUCTION

The U.S. Army Corps of Engineers retained ABB Environmental Services, Inc. (ABB-ES) of Wakefield, Massachusetts to perform asbestos surveys of 41 Army Reserve Centers (ARCs) throughout New England during September, October, November, and December 1994. ABB-ES subcontracted with Covino Environmental Consultants, Inc. (CEC) to accomplish this task.

The purpose of these surveys is to identify, quantify, and assess materials at each site that are suspected of containing asbestos fibers and, when asbestos-containing building materials (ACBM) are identified, to prioritize their need for removal.

On October 12, 1994, two inspectors representing CEC performed an asbestos survey of the Quinta Gamelin ARC located at Asylum Road, Bristol, Rhode Island.

Michael Hickey (Rhode Island Health and Safety Department Certification #AAC-275IS) performed the survey assisted by Glenn Nelson (AAC-468IS). This certification of these CEC representatives as Asbestos Inspectors is required and regulated in accordance with Chapter 24.5 of Title 23 General Laws entitled Health and Safety. In addition, each inspector is appropriately accredited to perform building inspections through having successfully completed an EPA-approved asbestos inspection training course.

On the day of the inspection, the survey team met with the facility manager, George Douglas, who provided information regarding the site as well as access to the buildings.

This report contains a description of the site (section 1), a discussion of the sampling methods (section 2), a description of the laboratory analytical methods and results (section 3) and conclusions and recommendation (section 4).

The results of the survey are summarized in tabular form (section 3). Table 1, the Inventory of Suspect ACBM, provides a list of all suspect ACBM encountered by the CEC inspectors during the survey, the locations in which the materials were observed, their sample number(s), the materials' friability, and the analytical results for each type of suspect material. A suspect material was classified as ACBM if PLM/DS analysis of one or more samples indicated the presence of asbestos in quantities greater than one percent.

Table 2, the Inventory of ACBM, presents the list of positively identified ACBM, including material location, condition, and accessibility. The assessment rating for exposure for each type of ACBM is based on the United States Army Environmental Center (USAEC) prioritization criteria.

INTRODUCTION (cont.)

CEC's conclusions and recommendations are stated in section 4. Table 3 presents CEC's cost estimates for totally removing and replacing ACBM identified during the survey.

Appendices A through G present bulk sample analytical results, drawings depicting locations of samples and of ACBM, photographic documentation, asbestos prioritizations forms, personnel and laboratory certifications, the operations and maintenance plan, and the U.S. Army Corps of Engineers Asbestos Abatement Survey.

1. SITE DESCRIPTION

The Quinta Gamelin Army Reserve Center in Bristol, Rhode Island consists of a Main Building and a Maintenance Building (OMS). According to the facility manager, the Main Building was originally constructed in 1957, and demolished and rebuilt in 1988. The OMS building is of the original 1957 construction.

The Main Building has two floors. The first floor is used primarily for offices, (excluding drill hall) storage rooms, and classrooms, and it also contains an assembly hall. The building is a masonry block structure of 14,755 square feet, with a brick exterior. The building is constructed on a concrete slab. Building finishes include masonry block walls, sheetrock ceilings and suspended ceiling tiles. Floor finishes are vinyl and ceramic tile.

Heating is supplied in the Main Building by oil-fired boilers distributing forced hot air through a duct system. Air conditioning is supplied by a new "Carrier" system. No suspect ACBM associated with the heating or air conditioning system was noted. The only ACBM identified in the Main Building was nonfriable exterior window caulking.

The OMS is a one-story structure used for maintenance work. The building is a wood-frame structure of 2,688 square feet, with concrete block walls and concrete floors. The building is heated by two ceiling mounted blower units.

Both friable and nonfriable ACBM were identified in the OMS building. Friable thermal system pipe insulation and associated mud fittings were located on the plumbing lines, nonfriable transite board on the ceiling above the heater units, and friable white vibration dampener cloth on the ceiling-mounted heater units.

2. SAMPLING METHODS

The purpose of the survey was to identify both friable and nonfriable ACBM at the site.

In the course of collecting random bulk samples for laboratory analysis, every effort was made to identify all locations and types of suspect ACBM. All building materials other than wood, plastic, metal, rubber, glass, and most masonry products were considered to be suspect ACBM. Sampling often included multiple samples of the same type of material because inconsistencies in manufacturing processes and installation practices may have resulted in materials of similar construction having varied asbestos content.

Both the interior and exterior of each building were inspected. The survey included observations for the following types of suspect ACBM:

- thermal system insulation on pipes, tanks, boilers, and similar items;
- surfacing materials such as acoustical and decorative plasters, fireproofing on beams, columns, and ceiling decks, and other coatings applied by spray or trowel;
- miscellaneous friable materials such as ceiling tiles, gypsum wallboards, joint compounds, cloth gaskets, blown-in insulations, etc.; and
- miscellaneous nonfriable materials such as floor tiles, adhesives, cementitious wallboards, asphaltic roofing materials, etc.

To prevent the potential for future water leaks, bulk samples of asphaltic roofing materials were collected in such a manner that the integrity of the roofing system was not compromised. This was conducted by only collecting samples of flashings, shingles or the surface layer. Core sampling through the entire thickness of roofing systems was not performed. Asphaltic roofing materials that were not sampled should be assumed to contain asbestos, unless bulk sampling and analysis indicate otherwise.

Some friable building materials, such as fireproofing and most thermal insulations installed in 1980 or later, were also not considered to be suspect ACBM. Stored materials (gaskets, brake pads, gloves, etc.) that may contain asbestos but are not building materials were not included in the survey.

Since asbestos content of building materials was to be determined by the laboratory analysis of random bulk samples (RBS), CEC used a sampling protocol based on the following requirements of the Asbestos Hazard Emergency Response Act (AHERA):

2. SAMPLING METHODS (cont.)

Bulk sampling of suspect building materials was performed by collecting a small but representative portion of material into plastic vials with tightly fitting caps that were sealed immediately after sample collection. Insulation and other friable samples were collected using a knife with a lockable blade or a single-use hollow metal coring device. After sample collection, sampling devices were immediately cleaned to prevent cross-contamination of samples. Each sample was assigned a unique number that was recorded on the sample container. The sample number and location were also recorded on field data sheets. The locations from which bulk samples were collected were sealed with duct tape, caulking compound, or other suitable materials. Sample locations were labeled with the date and unique sample number using indelible markers. Sample locations were labeled with the date and unique sample number using indelible markers. Samples were then transported and submitted to the CEC laboratory in Woburn, Massachusetts for microscopic analysis.

3. LABORATORY ANALYTIC METHODS AND RESULTS

Laboratory analyses were conducted on October 18, 1994 and December 14, 1994.

In order to identify asbestos content, samples were analyzed using Polarized Light Microscopy with Dispersion Staining (PLM/DS) in accordance with the United States Environmental Protection Agency's (EPA) Interim Method for the Determination of Asbestos in Bulk Insulation Samples (EPA 600/M4-82-020). A building material was classified as an ACBM if one or more samples indicated a result of greater than one percent (> 1%) asbestos.

In instances where multiple bulk samples were collected from the same homogenous area, if the analytical result of the initial sample indicated the presence of asbestos at a concentration greater than one percent, subsequent bulk samples were not analyzed.

The EPA method is considered sensitive to the presence of asbestos at less than one percent of the overall sample composition for materials (a) that do not contain resinous matrices, and (b) that have asbestos fibers greater than one micrometer in diameter (> 1 μm).

For resinously bound materials, or for materials that may have very thin asbestos fibers (< 1 μm), PLM/DS analysis may yield false negative results due to difficulties in separating suspect fibers from the resins that bind them. False negative results may also occur when the analyst is unable to detect very fine fibers due to the limits of resolution of the microscope used for PLM/DS analysis. Samples of floor tiles and floor tile adhesives are particularly difficult to analyze using PLM/DS. These materials contain resinous matrices, and they also typically contain very thin fibers due to grinding and other shearing processes conducted during manufacture. To positively identify the asbestos content of these types of materials, Transmission Electron Microscopy (TEM) is the preferred method. TEM provides greater resolution along with an elemental analysis of suspect fibers to identify asbestos.

Because of the aforementioned limitations of PLM/DS, samples of floor tiles and floor tile mastics were analyzed by TEM if the initial analytical results indicated an asbestos content of one percent or less. Briggs Associates, Inc. of Atlanta, Georgia conducted the TEM analysis using a semi-quantitative analysis. Results are reported as no asbestos detected, or as a light, moderate or heavy concentration of asbestos. If any asbestos is detected using this method, the material in all probability contains greater than one percent asbestos and is therefore, classified as an ACBM.

TABLE 1

INVENTORY OF SUSPECT ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

October 12, 1994

Description of Suspect Material MAIN BUILDING	Material Location	Material Classification	Friability	Sample Number(s)	Asbestos Content and Type
Gray/olive 12" x 12" floor tile	Throughout	M	Nonfriable	34-02-01	None detected, TEM none detected
Black mastic adhesive, under-lying sample #02-01	Throughout	M	Nonfriable	34-03-01	None detected, TEM none detected
White 2' X 4' ceiling tile	Throughout	M	Moderately friable	34-04-01	None detected
Gray exterior[1] window caulking	Throughout	M	Low friability	B-01	3% Chrysotile

T = Thermal System Insulation
S = Surfacing Material
M = Miscellaneous Material

Note [1]: This material was collected and analyzed during the quality control visual inspection on July 10, 1996.

TABLE 1

INVENTORY OF SUSPECT ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

October 12, 1994

Description of Suspect Material OMS	Material Location	Material Classification	Friability	Sample Number(s)	Asbestos Content and Type
Rolled paper-type pipe insulation and associated mud fittings	Across ceiling and down walls	T	Friable	34-01-01	10% Chrysotile
White vibration dampener cloth	On ceiling-mounted heater units	M	Friable	Not Sampled	Assumed ACBM
Transite (cement) board panels	Above ceiling-mounted heaters	M	Nonfriable	Not Sampled	Assumed ACBM

T = Thermal System Insulation
S = Surfacing Material
M = Miscellaneous Material

TABLE 2

INVENTORY OF ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

October 12, 1994

Description of ACBM MAIN BUILDING	ACBM Location	Material Classification	Approximate Quantity	Condition	Accessibility	Material Exposure Assessment Rating
Gray exterior window caulking	Throughout	M	20 ft^2	Fair	Low	F

T = Thermal System Insulation
S = Surfacing Material
M = Miscellaneous Material

* Assessment Index. Materials assigned an alphabetical exposure assessment rating from A to F based on damage and fiber release factors, with A representing a material with the highest priority for remedial action and F representing a material with the lowest priority for remedial action (See Appendix D for additional details).

TABLE 2

INVENTORY OF ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

October 12, 1994

Description of ACBM OMS	ACBM Location	Material Classification	Approximate Quantity	Condition	Accessibility	Material Exposure Assessment Rating
Rolled paper-type pipe insulation and associated mud fittings	Across ceiling and down walls	T	90 lf	Fair	Low	D
Asbestos-cement transite board	Above heaters at ceiling level	M	65 ft^2	Good	Low	F
White vibration dampener cloth	On ceiling-mounted heater units	M	10 ft^2	Good	Low	E

T = Thermal System Insulation
S = Surfacing Material
M = Miscellaneous Material

* Assessment Index: Materials assigned an alphabetical exposure assessment rating from A to F based on damage and fiber release factors, with A representing a material with the highest priority for remedial action and F representing a material with the lowest priority for remedial action (See Appendix D for additional details).

4. CONCLUSIONS AND RECOMMENDATIONS

On the basis of CEC's inspection of the Main Building and the Maintenance Building of the Quinta Gamelin Army Reserve Center in Bristol, Rhode Island, and of CEC's collection of random bulk samples of friable and nonfriable suspect asbestos-containing building materials and their analyses by CEC's laboratory, CEC concludes that:

(1) The exterior window caulking associated with the Main Building is in fair condition, and should not be disturbed in any manner that may cause a fiber release.

(2) The thermal system pipe insulation and associated mud fittings in the OMS building is damaged and should be removed.

(3) The transite boards in the OMS building, above the ceiling-mounted blower units is in good condition and not very accessible. However, this material should not be cut, ground, sawed or otherwise disturbed in such a manner that may cause fiber release.

(4) The vibration dampener cloth in the OMS Building is in good condition and shall not be disturbed in any manner that may cause fiber release.

Therefore, CEC recommends that the exterior window caulking be maintained in fair condition, the thermal system pipe insulation and associated mud fittings should be removed, and the transite board may remain in place and be monitored under the O&M Program.

At the client's request, we have prepared cost estimates (Table 3) for the total removal and replacement of ACBM identified during the survey. These estimates are for informational purposes only and are not intended to be compared to actual prices an abatement contractor might estimate for a specific project.

The estimated cost to remove all the ACBM is approximately $2,255. The estimated cost to replace the friable ACBM with materials that do not contain asbestos is $1,020. The estimated cost for total removal and replacement of ACBM is $3,275.

Unit prices have been estimated based on typical 1994 costs for specific types of ACBM. These prices account for the labor, material, engineering controls, and expected transportation and disposal costs that would be incurred to remove and dispose of the ACBM.

TABLE 3. COST ESTIMATES FOR REMOVAL AND REPLACEMENT OF ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

Type of ACBM Main Building	Total Quantity	Unit Cost For Removal	Removal Cost	Unit Cost For Replacement	Replacement Cost
Gray exterior window caulking	20 ft^2	$30/$ft^2$	$ 600	$3/$ft^2$	$ 60

TABLE 3. COST ESTIMATES FOR REMOVAL AND REPLACEMENT OF ACBM

QUINTA GAMELIN U.S. ARMY RESERVE CENTER
ASYLUM ROAD
BRISTOL, RHODE ISLAND

Type of ACBM OMS	Total Quantity	Unit Cost For Removal	Removal Cost	Unit Cost For Replacement	Replacement Cost
Rolled paper-type pipe insulation and associated mud fittings	90 lf	$10/lf	$900	$7/lf	$630
Transite board	65 ft^2	$7/$ft^2$	$455	$2/$ft^2$	$130
White vibration dampener cloth on ceiling-mounted heater units	10 ft^2	$30/$ft^2$	$300	$20/$ft^2$	$200
		TOTAL	**$2,255**	**TOTAL**	**$1,020**
		TOTAL REMOVAL AND REPLACEMENT COST		**$3,275**	

LOCATION: **OMS**
ASYLUM ROAD
BRISTOL, RI

PROJECT : 94.01163.34
PAGE : A-1

ANALYTICAL RESULTS OF BULK SAMPLES

SAMPLE DESCRIPTION	ANALYTICAL RESULTS		
34-01-01 BROWN PIPE INSULATION	ASBESTOS-CHRYSOTILE	:	10%
	CELLULOSE	:	80%
	NON-FIBROUS MATERIAL	:	10%

ALL SAMPLES ARE STORED AT THE CEC LABORATORY FOR A PERIOD OF THREE MONTHS. FURTHER ANALYSIS OR RETURN OF SAMPLES MUST BE REQUESTED WITHIN THIS THREE MONTH PERIOD TO GUARANTEE THEIR AVAILABILITY.

LABORATORY CERTIFICATION #[illegible]

LABORATORY SUPERVISOR

LOCATION: **MAIN BUILDING**
ASYLUM ROAD
BRISTOL, RHODE ISLAND

PROJECT : 94.01163.34
PAGE : A-2

ANALYTICAL RESULTS OF BULK SAMPLES

SAMPLE DESCRIPTION	ANALYTICAL RESULTS	
34-02-01 GRAY/OLIVE 12" X 12" FLOOR TILE (MAIN OFFICE)	NO ASBESTOS DETECTED CELLULOSE NON-FIBROUS MATERIAL	: : < 01% : 100%
34-03-01 BLACK MASTIC ADHESIVE UNDERLYING SAMPLE #02-01	NO ASBESTOS DETECTED CELLULOSE NON-FIBROUS MATERIAL	: : 02% : 98%
34-04-01 WHITE 2' X 4' CEILING TILE, LIBRARY ROOM	NO ASBESTOS DETECTED CELLULOSE OTHER FIBROUS MATERIAL - MINERAL WOOL NON-FIBROUS MATERIAL	: : 60% : 30% : 10%

ALL SAMPLES ARE STORED AT THE CEC LABORATORY FOR A PERIOD OF THREE MONTHS. FURTHER ANALYSIS OR RETURN OF SAMPLES MUST BE REQUESTED WITHIN THIS THREE MONTH PERIOD TO GUARANTEE THEIR AVAILABILITY.

LABORATORY CERTIFICATION # MA #AA000006

LABORATORY SUPERVISOR

CLIENT : MR. HERB COLBY
ABB ENVIRONMENTAL SERVICES
CORPORATE PLACE 128
107 AUDUBON ROAD
WAKEFIELD, MA 01880

PROJECT : 51542
BATCH : 9607.083
DATE RECEIVED : 07/22/96
DATE ANALYZED : 07/24/96

LOCATION: QUSIUTO GAMELIN ARC
BRISTOL, RI

ANALYTICAL RESULTS OF BULK SAMPLES

SAMPLE DESCRIPTION	ANALYTICAL RESULTS		
001B B-01, GRAY WINDOW CAULKING, ENTRANCE TO MAIN [illegible]	ASBESTOS-CHRYSOTILE	:	03%
	OTHER FIBROUS MATERIAL	:	02%
	NON-FIBROUS MATERIAL	:	95%

ANALYSIS METHOD: POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING (PLM/DS) BY EPA-600/M4-82-020

PLEASE SEE ATTACHMENT FOR FURTHER INTERPRETATION OF RESULTS.

LABORATORY CERTIFICATION # MA #AA000006

LABORATORY SUPERVISOR

THESE SAMPLES WERE ANALYZED BY POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING (PLM/DS) ACCORDING TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (US EPA) "INTERIM METHOD FOR THE DETERMINATION OF ASBESTOS IN BULK INSULATION SAMPLES" (EPA-600/M4-82-020). THIS METHOD IS GENERALLY CONSIDERED SENSITIVE TO THE PRESENCE OF ASBESTOS AT LESS THAN ONE PERCENT. THIS REPORT RELATES ONLY TO THOSE SAMPLES ANALYZED, AND MAY NOT BE INDICATIVE OF OTHER SIMILAR APPEARING MATERIALS EXISTING AT THIS, OR OTHER SITES.

FLOOR TILES AND RESINOUSLY BOUND MATERIALS ANALYZED BY EPA METHOD 600/M4-82-020, INTERIM METHOD FOR THE DETERMINATION OF ASBESTOS IN BULK INSULATION SAMPLES, MAY YIELD FALSE NEGATIVE RESULTS DUE TO DIFFICULTIES IN ISOLATING SUSPECT FIBERS AND SUBSEQUENTLY IDENTIFYING THEM BENEATH THE MATRIX MATERIAL WHICH ENCAPSULATES THEM. SHEARING DURING THE MANUFACTURE OF VINYL TILE DECREASES THE FIBER SIZE OF THE ASBESTOS CONSTITUENT; THEREFORE, THE FIBERS MAY NOT BE READILY DETECTABLE USING POLARIZED LIGHT MICROSCOPY. AS A RESULT, LABORATORY ANALYSIS CANNOT ALWAYS BE ACCOMPLISHED USING STANDARD TECHNIQUES. WHEN THE EPA METHOD YIELDS A "NO ASBESTOS DETECTED" RESULT FOR FLOOR TILES AND RESINOUSLY BOUND MATERIALS, TUNDRA AIR CONSULTANTS RECOMMENDS FURTHER ANALYSIS USING SEM OR TEM TECHNIQUES FOR THE IDENTIFICATION OF ASBESTOS.

THE AMOUNT OF ASBESTOS PRESENT AT OR BELOW THE QUANTITATION LIMIT IS DETERMINED USING POINT COUNTED SLIDES OF KNOWN WEIGHT PERCENTS AS CALIBRATION STANDARDS.

THE EPA METHOD REQUIRES THAT FRIABLE SAMPLES WITH ASBESTOS CONTENTS OF LESS THAN 10%, DETERMINED BY VISUAL ESTIMATION, BE VERIFIED USING THE POINT COUNTING TECHNIQUE OR OTHERWISE ASSUMED TO CONTAIN GREATER THAN 1% ASBESTOS BY THE BUILDING OWNER OR OPERATOR. IF ANALYTICAL RESULTS INDICATE THE PRESENCE OF 1% OR LESS ASBESTOS IN A FRIABLE SAMPLE, THAT MATERIAL MUST BE TREATED AS ASBESTOS-CONTAINING MATERIAL UNLESS THESE QUANTITIES ARE VERIFIED USING THE POINT COUNTING TECHNIQUE. POINT COUNTING IS A STATISTICAL TECHNIQUE FOR ESTIMATING CONCENTRATION, ALSO USING PLM. IF YOU WISH TO HAVE ANY OF YOUR FRIABLE SAMPLES WITH ASBESTOS CONTENTS OF LESS THAN 10% TO BE POINT COUNTED, PLEASE CALL OUR OFFICE. POINT COUNTING IS NOT REQUIRED FOR THOSE SAMPLES IN WHICH NO ASBESTOS IS DETECTED DURING ANALYSIS BY PLM.

ALL SAMPLES WILL BE STORED AT THE TUNDRA LABORATORY FOR A PERIOD OF THREE MONTHS. FURTHER STORAGE OR RETURN OF SAMPLES MUST BE REQUESTED WITHIN THIS THREE MONTH PERIOD TO INSURE THEIR AVAILABILITY.

Briggs Associates, Inc.

ASBESTOS ANALYSIS BY TRANSMISSION ELECTRON MICROSCOPY (TEM), SELECTED AREA ELECTRON DIFFRACTION (SAED), AND ENERGY DISPERSIVE X-RAY MICROANALYSIS (EDXA)

SAMPLE DATA

CLIENT PROJECT: CEC Job 94.01163

Sample Location: #34, Bristol, RI

CLIENT: Covino Environmental Consultants, Inc.

DATE RECEIVED: 1/12/95

ANALYSIS: Floor Tile Asbestos Analysis by Modified Chatfield Method (Qualitative)

ANALYTICAL RESULTS

Lab ID No.	Client ID No.	Approximate Asbestos Content	Asbestos Type
1.17840	34-02-01	NAD	
2.17841	34-03-01	NAD	

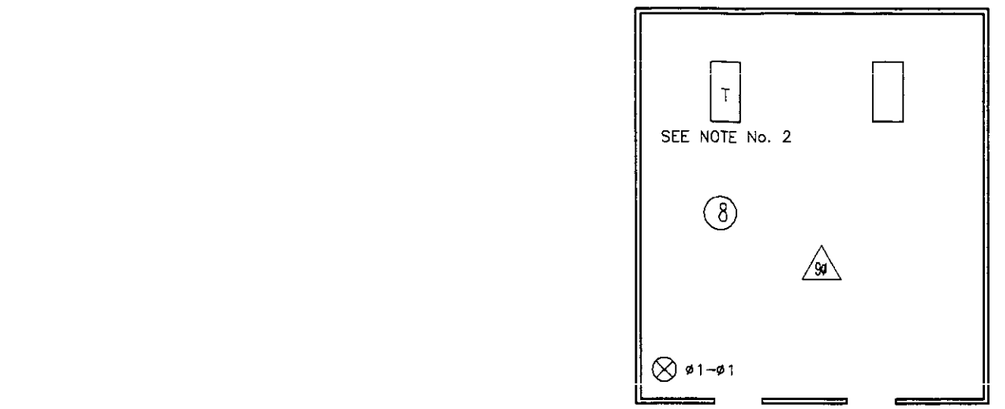
Notes: CHR=Chrysotile, AMP=Amphibole
NAD=No Asbestos Detected
SA=Slight Amount of Asbestos, MA=Moderate Amount of Asbestos, HA=High Amount of Asbestos

Analytical Method: The floor tile samples and their underlying mastic are analyzed in accordance with recommended protocol (modified Chatfield). The TEM analysis was performed using JEOL 100CX II with KEVEX energy dispersive X-ray spectrometer at a magnification of 19,000.

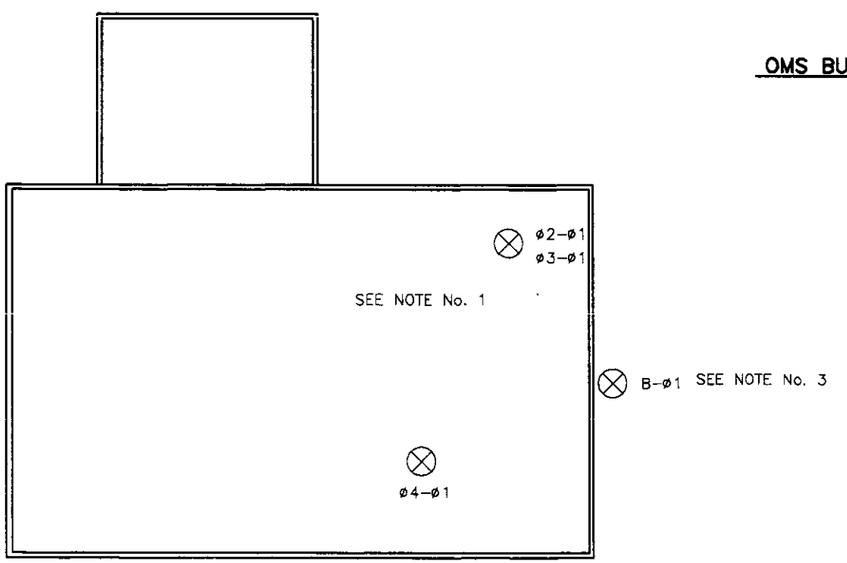
2001 Marietta Road, Atlanta, Georgia 30318
Tel (404) 355-4429 • Fax (404) 355-2339
Markham, ONT • Rockland, MA • Newton Upper Falls, MA • Pawtucket, RI • Columbia, MD • Nashville, TN • Orlando, FL

APPENDIX B

DRAWINGS DEPICTING SAMPLE AND ACBM LOCATIONS



OMS BUILDING



MAIN BUILDING

LEGEND

⊗	BULK SAMPLE LOCATION
NA	NOT ACCESSIBLE
T	TRANSITE
AA–BB	SAMPLE DESCRIPTION: HOMOGENEOUS MATERIAL – SPECIFIC SAMPLE NUMBER
ACBM	ASBESTOS–CONTAINING BUILDING MATERIAL
(X)	NUMBER OF ACBM FITTINGS ON NON–ACBM INSULATED PIPE
X	LINEAR FEET OF ACBM PIPE INSULATION
XX	NUMBER OF MUDDED PIPE FITTINGS, INCLUDES FIBERGLASS AND PAPER INSULATED PIPE RUNS.
	VERTICAL ACBM INSULATED PIPE RISER
	ACBM FLOOR TILE
	ACBM FLOOR TILE & MASTIC
	ACBM MASTIC

DRAWING NOTES

1.– THE ENTIRE MAIN BUILDING WAS TORN DOWN AND RECONSTRUCTED IN 1988.

2.– APPROXIMATELY 65 SQ. FT. OF TRANSITE BOARD AND 10 SQ. FT. OF FRIABLE WHITE VIBRATION CLOTH (BOTH ASSUMED TO BE ACBM)

3.– GRAY EXTERIOR WINDOW CAULKING, 3% CHRYSOTILE, 20 SQ. FT.

Revisions			
Symbol	Descriptions	Date	Approved

COVINO ENVIROMENTAL CONSULTANTS, INC.
3ø WILDWOOD AVENUE
WOBURN, MASSACHUSETTS ø18ø1

ARMY RESERVE CENTER
BRISTOL, R.I.

Designed by:
Drawn by:
Checked by:
Reviewed by:
Approved by:

ASBESTOS SURVEY PLAN
SAMPLE GROUP 34
QUINTA GAMELIN
UNITED STATES ARMY RESERVE TRAINING CENTER
ASYLUM ROAD
BRISTOL, R.I. ø28ø9

Scale: NONE
Date: OCT. 1995
Drawing Code:
Sheet reference number:
Sheet ____ of ____

Plot Date:

Photo 34-01. Thermal system fiberglass insulation in boiler room, main building.

Photo 34-02. HVAC duct, located in the drill hall.

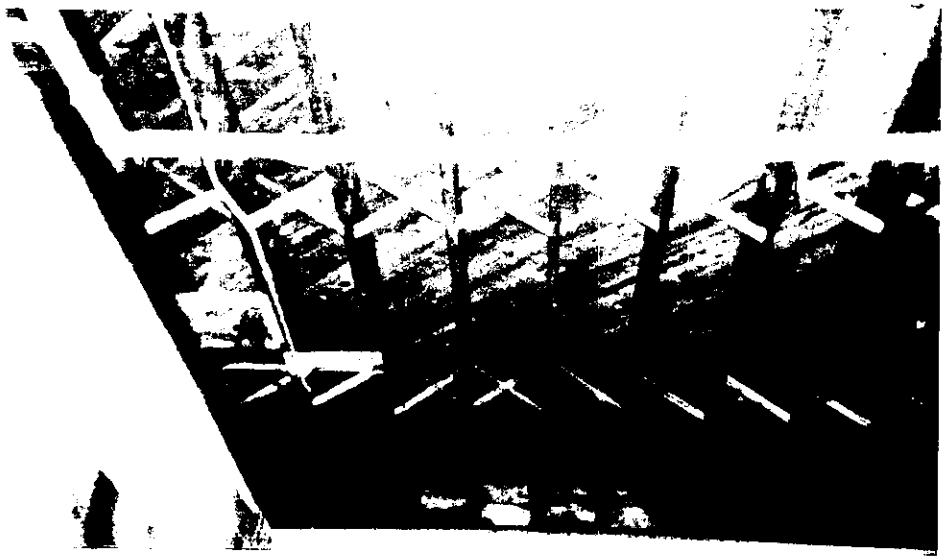


Photo 34-03. Thermal system pipe insulation, located in OMS building.

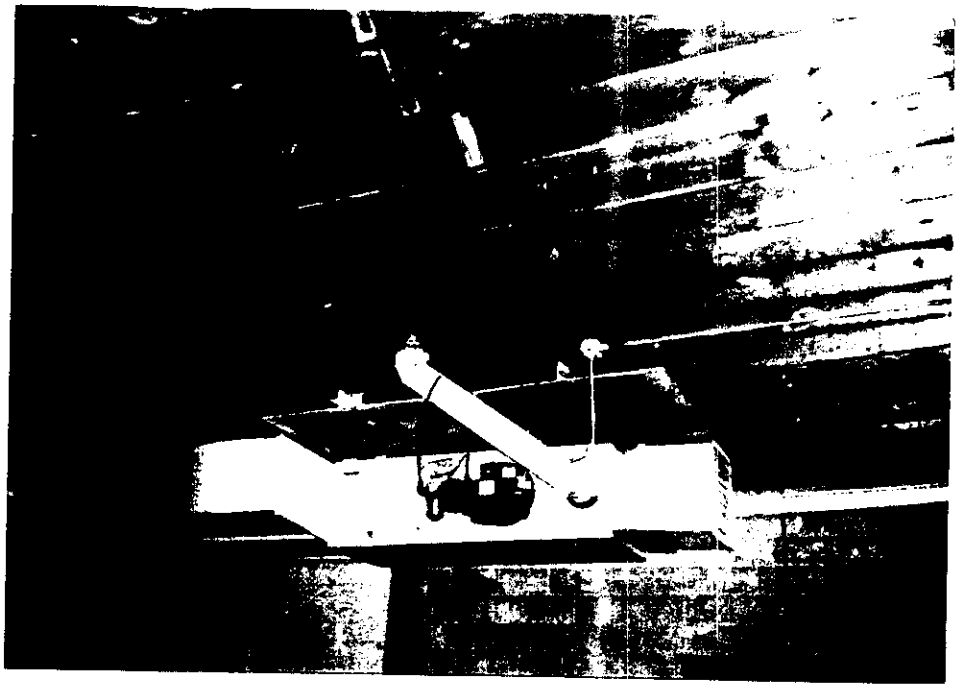


Photo 34-04. Transite board located above heater, OMS building.

INSTRUCTIONS FOR COMPLETING USAEL ACBM ASSESSMENT CHECKLIST

1. Complete a separate form for each suspect asbestos-containing building material (SACBM) in a building. If a building has no SACBM, insert "No SACBM Found" in the space labeled "SACBM I.D. No."

2. Complete all remaining items at the top of the form. If a SACBM exists essentially throughout a building, insert "Throughout Building" under "Room(s) or Area(s) Where Found." Otherwise, clearly list the rooms or areas where it was found (e.g., Entire Basement, Rooms 101-120, Attic Only, etc.)

3. To complete Parts I and II, circle the ratings which are appropriate for the particular SACBM. Use the largest circled ratings to calculate the Damage(D) Total and Exposure(E) Total when multiple ratings are circled. These totals represent the sum of the factor ratings for Parts I and II.

4. Note any other relevant observations in the space labeled at the bottom of the form, then determine the "Assessment Index" from the chart shown below.

5. The following provides further descriptions of the different possible scores for certain items. Refer to USAEC Figures 1a and 1b for further information about these items.

PART I: Damage Assessment Factors

A. Physical Damage: Use "0" for non-ACBM, nonfriable ACBM, or ACBM with <1%. Use "1" for less than 10% DAMAGE, or controlled space accessed by maintenance personnel only, or uncontrolled/unoccupied space. "2" = 10-50% damage. "3" = >50-75% damage. "5" = >75% damage.

B. Water Damage: Minor means <10%; major means >10%.

C. Potential Damage due to Routine Maintenance Activities: For sprayed or trowelled-on materials, this means whether the friable ACBM could be damaged by routine maintenance activities occurring at the indicated distances from the ACBM. Assign "3" also when access is required above a lay-in ceiling where surfacing ACBM is located.

D. Type of ACBM: Choose from list over.

E. Percent asbestos.

F. Damage(D) Total: Must be 0 if asbestos content is <1% or the material is nonfriable ACBM in good/fair condition; maximum score is 17.

PART II: Exposure Assessment Factors

A. Material Friability: Defined by USEPA as crumbled, pulverized, or reduced to powder when dry under hand pressure.

B. Occupant Accessibility to ACBM Fibers: Low: Isolated by barriers seldom breached; Moderate: barrier breached by routine maintenance activity; High: routinely accessible to other occupants.

C. Activity/Use: Low = Infrequent maintenance activities only; Moderate = Frequent maintenance activities only; High = Normal occupant activities.

D. Air Stream/Plenum: None means no perceptible air flow in the room or area; use 1 if an air flow is perceived but ACBM is not likely affected; use 2 if ACBM is exposed to perceptible or occasional air streams; use 3 if ACBM present in supply ducts/plenums or recirculated air, subjected to routine turbulence, or abrupt air movement.

E. Area of visible surface or damaged ACBM.

F. Population: Use the following formula to calculate for occupied building rooms/areas:

$$\text{Average Occupancy} = \text{Outside Visitors} \times \frac{\text{Ave. Hours Spent}}{8 \text{ Hrs.}} + \text{No. Full-time 8-Hr. Building Occupants}$$

Unoccupied facilities capable of being used are given a worst-case scenario value of "5," plus additional value per the table over. Other unoccupied facilities (bunkers, sheds) will receive "Zero" population value.

G. Exposure(E) Total: Sum maximum scores for about Part II items; maximum score is 26.

H. Assessment Index: Enter the letter code determined from the following matrix:

Damage(D) Score	Exposure(E) Score 26-24	23-15	14-8	7-4	Zero
17-13	A	A	B	C	F
12-9	A	B	C	D	F
8-5	B	C	D	E	F
4-1	C	D	E	F	F
Zero	F	F	F	F	F

I. Other Relevant Observations.

ASBESTOS PRIORITIZATION FORM

SITE CODE: 34
AREA/ROOM: Garage
EVALUATORS:
MATERIAL QUANTITY: 90 LF
MATERIAL DESCRIPTION: 1 Ø Pipe pipe insul

BUILDING NAME:
SAMPLE NO(S).: 34-01-01
DATE: 10-12-94
THICKNESS/SIZE & COLOR:

RELEASE ASSESSMENT

MATERIAL TYPE	COMMENTS
A 3 Friable: H=3, M=2, L=1 Non-friable=0	8 PFs (mud) Ref ACOE 4/90 report
B 1 Occupants Accessibility to ACBM Fibers Low = 0, Moderate = 1, High = 4	
C 3 Activity - None - 0, Low = 1, Moderate = 2, High = 3	
D 1 Air Movement/Plenum - None - 0, Low = 1, Moderate = 2, High = 3	
E 0 Amount of Visible Surface Area (ft^2): <10=0: 10 to <100=1: 100 to ≤1,000=2: >1,000=3	
F 2 Population: 1 to 9 or hall = 1: 10 to 200 = 2: 201 to 500 = 3: 501 to 1,000 = 4: > 1,000 = 5	
G 5 No ACBM or < 1% ACBM = 0, Non-friable ACBM in good to fair condition = 1, Non-friable ACBM in poor condition = 2, Friable ACBM in good condition = 3, Friable ACBM with damage = 5	
H 15 Release Factor Total (R) Max = 26: Min = 1 TOTAL R FACTOR = 15	

DAMAGE ASSESSMENT

A 1 Physical: None = 0, Minimal = 1, Low = 2, Moderate = 3, High = 5	
B 0 Water: None = 0, Minor = 1, Major = 2	
C 1 Potential for Contact by Maintenance Activity Low = 0, Moderate = 2, High = 3	
D 2 Type of Material: Surfacing Material = 4, HVAC = 3, Pipe or Boiler = 2, Ceilings/Walls = 1, Other = 0 to 1	
E 1 Asbestos Content (%): < 1% = 0, > 1 to < 30 =1, > 30 to < 50 = 2, > 50 = 3	
F 9 Damage Factor Total (D) Max = 17, Min = 0 TOTAL D FACTOR = 9	G ASSESSMENT INDEX (Priority Ranking Value) = B

ASBESTOS PRIORITIZATION FORM

SITE CODE: 241
AREA/ROOM: [illegible]
EVALUATORS: [illegible]
MATERIAL QUANTITY: 6 5 5 [illegible]
MATERIAL DESCRIPTION: [illegible]

BUILDING NAME: [illegible]
SAMPLE NO(S).:
DATE:
THICKNESS/SIZE & COLOR: [illegible]

RELEASE ASSESSMENT

MATERIAL TYPE	COMMENTS
A 2 Friable: H=3, M=2, L=1 Non-friable=0	
B 1 Occupants Accessibility to ACBM Fibers Low = 0, Moderate = 1, High = 4	
C 1 Activity - None - 0, Low = 1, Moderate = 2, High = 3	
D ___ Air Movement/Plenum - None - 0, Low = 1, Moderate = 2, High = 3	
E 1 Amount of Visible Surface Area (ft^2): <10=0: 10 to <100=1: 100 to ≤1,000=2: >1,000=3	
F ___ Population: 1 to 9 or hall = 1: 10 to 200 = 2: 201 to 500 = 3: 501 to 1,000 = 4: > 1,000 = 5	
G 1 No ACBM or < 1% ACBM = 0, Non-friable ACBM in good to fair condition = 1, Non-friable ACBM in poor condition = 2, Friable ACBM in good condition = 3, Friable ACBM with damage = 5	
H 5 Release Factor Total (R) Max = 26: Min = 1 TOTAL R FACTOR = 5	

DAMAGE ASSESSMENT

A 1 Physical: None = 0, Minimal = 1, Low = 2, Moderate = 3, High = 5	
B ___ Water: None = 0, Minor = 1, Major = 2	
C 1 Potential for Contact by Maintenance Activity Low = 0, Moderate = 2, High = 3	
D 1 Type of Material: Surfacing Material = 4, HVAC = 3, Pipe or Boiler = 2, Ceilings/Walls = 1, Other = 0 to 1	
E 1 Asbestos Content (%): < 1% = 0, > 1 to < 30 = 1, > 30 to < 50 = 2, > 50 = 3	
F 2 Damage Factor Total (D) Max = 17, Min = 0 TOTAL D FACTOR = 2	G ASSESSMENT INDEX (Priority Ranking Value) = 7

ASBESTOS PRIORITIZATION FORM

SITE CODE: 34
AREA/ROOM: Exterior
EVALUATORS: G. Nelson
MATERIAL QUANTITY: 1
MATERIAL DESCRIPTION: Window caulking

BUILDING NAME: Main
SAMPLE NO(S).: B-01
DATE:
THICKNESS/SIZE & COLOR:

MATERIAL TYPE	COMMENTS
A 1 Friable: H=3, M=2, L=1 Non-friable=0	
B 0 Occupants Accessibility to ACBM Fibers Low = 0, Moderate = 1, High = 4	
C 6 Activity - None - 0, Low = 1, Moderate = 2, High = 3	
D 3 Air Movement/Plenum - None - 0, Low = 1, Moderate = 2, High = 3	
E 1 Amount of Visible Surface Area (ft^2): <10=0: 10 to <100=1: 100 to ≤1,000=2: >1,000=3	
F 1 Population: 1 to 9 or hall = 1: 10 to 200 = 2: 201 to 500 = 3: 501 to 1,000 = 4: > 1,000 = 5	
G 2 No ACBM or < 1% ACBM = 0, Non-friable ACBM in good to fair condition = 1, Non-friable ACBM in poor condition = 2, Friable ACBM in good condition = 3, Friable ACBM with damage = 5	
H 1 Release Factor Total (R) Max = 26: Min = 1 **TOTAL R FACTOR** = 9	

A 1 Physical: None = 0, Minimal = 1, Low = 2, Moderate = 3, High = 5	
B 1 Water: None = 0, Minor = 1, Major = 2	
C 0 Potential for Contact by Maintenance Activity Low = 0, Moderate = 2, High = 3	
D 0 Type of Material: Surfacing Material = 4, HVAC = 3, Pipe or Boiler = 2, Ceilings/Walls = 1, Other = 0 to 1	
E 1 Asbestos Content (%): < 1% = 0, > 1 to < 30 =1, > 30 to < 50 = 2, > 50 = 3	
F Damage Factor Total (D) Max = 17, Min = 0 **TOTAL D FACTOR** = 3	G **ASSESSMENT INDEX (Priority Ranking Value)** = F

Tundra Air Consultants 300 Wildwood Avenue, Woburn, MA 01801 (617) 933-2555 Fax (617) 932-9402
A Tundra Corporation Company

ASBESTOS PRIORITIZATION FORM

SITE CODE: 34 | BUILDING NAME: OMS
AREA/ROOM: Oms | SAMPLE NO(S).: Assumed
EVALUATORS: GN | DATE: July 10, 1996
MATERIAL QUANTITY: 10 Ft² | THICKNESS/SIZE & COLOR: 1/4"
MATERIAL DESCRIPTION: Window Glazing Putty

MATERIAL TYPE	COMMENTS
A 1 Friable: H=3, M=2, L=1 Non-friable=0	
B 0 Occupants Accessibility to ACBM Fibers Low = 0, Moderate = 1, High = 4	
C 1 Activity - None - 0, Low = 1, Moderate = 2, High = 3	
D 1 Air Movement/Plenum - None - 0, Low = 1, Moderate = 2, High = 3	
E 0 Amount of Visible Surface Area (ft^2): <10=0: 10 to <100=1: 100 to ≤1,000=2: >1,000=3	
F 1 Population: 1 to 9 or hall = 1: 10 to 200 = 2: 201 to 500 = 3: 501 to 1,000 = 4: > 1,000 = 5	
G 1 No ACBM or < 1% ACBM = 0, Non-friable ACBM in good to fair condition = 1, Non-friable ACBM in poor condition = 2, Friable ACBM in good condition = 3, Friable ACBM with damage = 5	
H 5 Release Factor Total (R) Max = 26: Min = 1 **TOTAL R FACTOR** = 5	

A 2 Physical: None = 0, Minimal = 1, Low = 2, Moderate = 3, High = 5	
B 0 Water: None = 0, Minor = 1, Major = 2	
C 2 Potential for Contact by Maintenance Activity Low = 0, Moderate = 2, High = 3	
D 3 Type of Material: Surfacing Material = 4, HVAC = 3, Pipe or Boiler = 2, Ceilings/Walls = 1, Other = 0 to 1	
E 1 Asbestos Content (%): < 1% = 0, > 1 to < 30 =1, > 30 to < 50 = 2, > 50 = 3	
F 6 Damage Factor Total (D) Max = 17, Min = 0 **TOTAL D FACTOR** = 6	G **ASSESSMENT INDEX (Priority Ranking Value)** = E

CERTIFICATION

Rhode Island Department of Health

Division of Occupational and Radiological Health

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder

1. Michael J. Hickey

2. 300 Wildwood Street
Woburn, MA 01801

3. Certificate No.: AAC-275IS
Amendment No.: 01-Reactivation

4. Expiration Date: 31 August 1995

5. Type of Certification: Asbestos Consultant Service

---

6. Services/Conditions:

A. Inspection Services.

B. Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

1) Application dated 11 August 1994.

Date: 8/22/94

For the Rhode Island Department of Health

by Roger P. Marinelli

FORM ASB-8 (10/88)

REPLACES FORM ASB-8 (3/86) WHICH IS OBSOLETE

IEE

INSTITUTE FOR ENVIRONMENTAL EDUCATION, INC.
52B Cummings Park, Suite 315, Woburn, MA 01801
(617) 935-7370

Michael Hickey

has successfully completed the 8 hour course

Asbestos Inspector/Management Planner Annual Refresher

March 24, 1994
Course Date

94-212-136-106
Certificate Number

004-62-5622
Social Security Number

March 24, 1994
Examination Date

March 24, 1995
Expiration Date

President / Director of Training

CERTIFICATION

Rhode Island Department of Health

Division of Occupational and Radiological Health

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder

1. Glenn D. Nelson

2. 300 Wildwood Avenue
   Woburn, MA 01801

3. Certificate No.: AAC-468IS
   Amendment No.: Original

4. Expiration Date: 31 August 1995

5. Type of Certification: Asbestos Consultant Service

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6. Services/Conditions:

A. Inspection Services.

B. Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

   1) Application dated 12 August 1994.

Date: 8/22/94

For the Rhode Island Department of Health

by Roger P Marsella

FORM ASB-8 (10/88)

REPLACES FORM ASB-8 (3/86) WHICH IS OBSOLETE

IEE

INSTITUTE FOR ENVIRONMENTAL EDUCATION, INC.
52B Cummings Park, Suite 315, Woburn, MA 01801
(617) 935-7370

Glenn Nelson

has successfully completed the 24 hour course

Asbestos Inspection Training

March 21-23, 1994
Course Date (s)

94-206-102-111
Certificate Number

032-48-1661
Social Security Number

March 23, 1994
Examination Date

March 23, 1995
Expiration Date

President / Director of Training

CERTIFICATION

Rhode Island Department of Health
Division of Occupational and Radiological Health

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the General Laws entitled "Health and Safety" as amended, and the Rules and Regulations for Asbestos Control, this Certificate is hereby issued as designated below. This Certificate is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions specified below.

Certificate Holder

1. Covino Environmental Consultants, Inc.

2. 300 Wildwood Avenue
Woburn, MA 01808

3. Certificate No.: AAL-025C3
Amendment No.: 07-Renewal

4. Expiration Date: 31 May 1995

5. Type of Certification: Asbestos Analytical Service

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6. Services/Conditions:

A. Analysis of bulk samples for type and percentage of asbestos via Polarized Light Microscopy.

B. Analysis of air samples for asbestos via Phase Contrast Microscopy.

C. Analytical results may only be certified by: Samuel J. Covino, Kenneth J. Warren, William C. Wessel, Robert M. Pelletier, Robert Sarazen, Timothy M. Downey, Brent Morgenstern, Katherine B. Straus, William B. Jones, Stephan F. Janas, Diane Montgomery, Daniel K. Smith, Christopher Strickler, Donna M. Johnson, Kevin Donovan, Mike Hickey, Eugene Koehler or Benjamin Lombard.

D. Except as specifically provided otherwise in this Certificate, Certificate Holders shall conduct their program in accordance with statements, procedures and representations contained in the documents, including any enclosures, listed below. The Rhode Island Rules and Regulations for Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and correspondence are more restrictive than the regulations.

1) Renewal application dated 26 April 1994.

Date: 5/26/94

For the Rhode Island Department of Health
by Roger P Marini Jr

FORM ASB-8 (10/88) REPLACES FORM ASB-8 (3/86) WHICH IS OBSOLETE

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ISO/IEC GUIDE 25:1990
ISO/IEC GUIDE 58:1993
ISO 9002:1994

Certificate of Accreditation

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

COVINO ENVIRONMENTAL CONSULTANTS, INC.
WOBURN, MA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

BULK ASBESTOS FIBER ANALYSIS

July 1, 1995
Effective until

For the National Institute of Standards and Technology

NVLAP LAB CODE: 1781

OPERATIONS AND MAINTENANCE PROGRAM

FOR

ASBESTOS-CONTAINING MATERIALS

AT

QUINTA GAMELIN U.S. ARMY RESERVE CENTER

ASYLUM ROAD

BRISTOL, RHODE ISLAND

TABLE OF CONTENTS

PAGE

1. INTRODUCTION

The purpose of the Operations and Maintenance (O & M) Program is to minimize the exposure of all building occupants and visitors to airborne asbestos fibers. To accomplish this goal, the O & M Program contains information for cleaning already released asbestos fibers from surfaces, preventing future release by minimizing disturbance of the damage to asbestos-containing building materials (ACBM), and monitoring ACBM conditions throughout the building. Important O & M Program elements include alerting building occupants about the locations of ACBM, training maintenance staff in special procedures for cleaning and handling ACBM, establishing a process that assures that ACBM are not disturbed during facility repairs and renovations, and periodically reinspecting areas containing ACBM. The O & M Program also establishes a recordkeeping system that documents employee training, O & M activities, abatement of ACBM, and the results of periodic reinspections. All records generated as a result of implementing this O & M Program, as well as this document, shall be kept by a designated Asbestos Program Manger.

This O & M Plan, to a large extent is modeled upon the requirements of 40 CFR Part 763, the Asbestos Hazard Emergency Response Act (AHERA). Although the requirements for implementing and O & M Plan is only required for schools under the AHERA regulation, the EPA recommends in their Green Book inclusion of the O & M requirements in any building that has ACBM. Also, OSHA's recently reissued asbestos standard (29 CFR 1926.1101) has several O & M related provisions, including housekeeping and labeling requirements.

LIMITATIONS

Due to several limitations further survey work will be required if future renovation or maintenance activities occur which result in demolition of any part of the existing building structure. These limitations include:

A. Since no core samples of roofing material were collected, only exposed surfaces of the roof were inspected;

B. Potentially hidden areas, such as wall cavities, the space between fixed ceilings and the ceiling deck, internal equipment and parts, etc. may contain ACBM that was not accessible during the survey; and,

C. The inner cavity of fire doors, which sometimes contains ACBM insulation, were not inspected.

2. NOTIFICATION

The Asbestos Program Manager shall establish a procedure for labeling ACBM identified in the building survey. Accessible materials in service areas identified as ACBM shall be marked with the following label:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Labels shall be prominently displayed in readily visible locations in the service areas and shall remain posted until the labeled ACBM are removed.

Additionally, maintenance staff who may work closely with or otherwise encounter ACBM throughout the facility shall be notified of the locations of all ACBM. These employees shall be made aware of the results of the building survey so that they may be familiar with the types and locations of identified ACBM. These employees shall also be instructed to immediately report to the Asbestos Program Manager any evidence of disturbance or damage of ACBM, or any dust or debris that apparently originates from ACBM. All employees who may encounter ACBM as part of their work must have access to a list of "Emergency Contact Phone Numbers" (Fig. 2-1).

Figure 2 - 1

EMERGENCY CONTACT PHONE NUMBERS

Asbestos Program Manager _____

Office Phone # _____

Home Phone # _____

Beeper # _____

Asbestos Abatement Contractor _____

Phone # _____ Fax # _____

Contacts	Home Phone #	Beeper #
_____	_____	_____
_____	_____	_____

Industrial Hygiene Consultant _____

Phone # _____ Fax # _____

Contacts	Home Phone #	Beeper #
_____	_____	_____
_____	_____	_____

Building Security _____

Police _____

Fire _____

Medical Emergency _____

3. EMPLOYEE TRAINING

A. Training of Workers in the Trades (16 hours)

All staff members who work in the skilled trades (carpenters, electricians, plumbers, etc.) and who conduct activities that will result in the disturbance of ACBM shall receive training. Activities that have a high likelihood of disturbing ACBM include routine cleaning in areas where friable ACBM are located; small-scale projects of short duration (i.e., repair or removal of less than three (3) linear or square feet of ACBM); and plumbing, heating and air conditioning, electrical, and other maintenance activities in locations adjacent to ACBM. Training shall be provided before workers are assigned to activities that may disturb ACBM. The training course shall be a minimum of sixteen (16) hours in duration. The content of the training course shall include, but not be limited to, the following elements:

1. Information regarding types of ACBM and its various uses and forms.
2. Information on the health effects associated with asbestos exposure.
3. Descriptions of the proper methods of handling ACBM and activities that could result in exposure of the employee to asbestos.
4. Information on the use of High Efficiency Particulate Air (HEPA) filter-equipped dual-cartridge respirators and other personal protection during maintenance activities.
5. Hands-on training in the use of respiratory protection, other personal protective measures, good work practices, and engineering controls.
6. Information on the asbestos program requirements for medical surveillance.
7. Recognition of damage, deterioration, and delamination of asbestos materials.
8. Relevant federal, state, and local requirements.

B. Awareness Training for Custodial Workers (2 hours)

All employees who perform custodial or maintenance tasks that may involve the accidental disturbance of ACBM, and all persons who perform work in the immediate vicinity of ACBM, shall receive awareness training. This awareness training course shall be a minimum of two (2) hours in duration. The content of the awareness training course shall include, but not be limited to, the following elements:

1. Background information on asbestos, including its uses and forms.
2. Health effects of exposure to asbestos.
3. Worker protection programs, including the use of respirators and other personal protective equipment.
4. How to recognize ACBM and how to avoid disturbing it.
5. Recognition of ACBM damage and deterioration.
6. Proper response to fiber-release episodes.

3. EMPLOYEE TRAINING (cont.)

C Training Concerning Prohibited Activities

All facility employees shall be made familiar with the locations of all ACBM identified at the facility. Certain routine maintenance activities shall be prohibited when ACBM are involved. Specifically, they shall also be instructed that:

1. No holes shall be drilled in ACBM.
2. No plants or pictures shall be hung on structures covered with ACBM.
3. No ACBM floor tile shall be sanded or buffed using high-speed ($\geq$ 300 rpm) equipment in accordance with 29 CFR 1926.1101 (L) (3)(ii).
4. While moving furniture or other objects, employees shall not damage ACBM.
5. No curtains, drapes, or other dividers shall be installed in such a way that they damage ACBM.
6. Floors, ceilings, moldings or other surfaces in asbestos-contaminated environments shall not be dusted with a dry brush or swept with a dry broom.
7. No ordinary vacuuming equipment shall be used to clean up asbestos-containing debris.
8. Ceiling tiles below ACBM shall not be removed unless the employee wears the proper respirator protection, clears the area of other people, and observes proper disposal procedures for removing asbestos waste.
9. No ventilation system filters shall be removed unless the filters are wetted.
10. No ventilation system filters shall be shaken out.

D. Refresher Training

A refresher training course shall be required every two years for all employees who are involved in Operations and Maintenance activities and who have completed the 16-hour training. The refresher training course shall be a minimum of one day (8 hours) in duration and shall include:

1. Review and discussion of changes in and interpretation of applicable state and federal laws, regulations, policies, and guidelines.
2. A discussion of developments or changes in state-of-the-art procedures and equipment.
3. Review of key areas of initial training specific to Operations and Maintenance workers.

3. EMPLOYEE TRAINING (cont.)

E. Verifying Competence of Outside Contractors

The Asbestos Program Manager shall be required to verify that all outside contractors performing work in the facility that may involve disturbance or damage of ACBM have received the training appropriate to the work they are to perform (as outlined in Parts 3(A), (B), (C), and (D) above). The Asbestos Program Manager shall also require all outside contractors to sign a certificate of acknowledgment (fig. 3-1) that they have been informed about the location of all ACBM in the facility. All outside contractors must have access to the list of "Emergency Contact Phone Numbers" shown in Figure 2-1.

Figure 3 - 1

CONTRACTOR'S ASBESTOS NOTIFICATION AND ACKNOWLEDGMENT FORM

for _____ (Project)

On behalf of _____, the undersigned hereby acknowledges the presence and location of asbestos-containing material (ACM) within the buildings located at the Quinta Gamelin Army Reserve Center located in Bristol, Rhode Island as further described herein. The undersigned agrees to avoid any contact with, or disturbance, of ACBM and to inform, and require, the same of all employees of the above-named company accordingly before they start any work at the building.

Based on sample testing conducted by the Army Corps of Engineers, ACBM have been identified in the building as described below:

A. **OMS**

1. Asbestos-cement (transite) board above ceiling blower units.
2. Thermal system pipe insulation and associated mudded fittings.
3. Vibration dampener cloth on ceiling-mounted heaters.

B. **Main Building**

1. Exterior window caulking

Any activities that could potentially disturb these materials, including but not necessarily limited to sanding, scraping, coring, drilling, hammering, removal, or anchoring are prohibited.

If you encounter any material that you suspect is ACM, or if you disturb any ACM in the course of your work, you agree to immediately stop all work and contact the project superintendent and the Asbestos Program Manager.

If you have any questions concerning this notice or the presence of ACM in the building, you shall contact the Asbestos Program Manager.

The return of one signed copy of this Notice constitutes your receipt of the above information and your agreement with the requirements contained herein.

Receipt Acknowledged by (Type or Print Name)_____

Signature _____ Date: _____

Title (Type or Print) _____

Company Name (Type or Print) _____

Company Address (Type or Print) _____

Company Telephone Number (Type or Print) _____

4. OPERATIONS AND MAINTENANCE ACTIVITIES

The O & M activities to be conducted at the facility shall include routine and emergency cleaning of areas and surfaces that are potentially asbestos-contaminated (i.e., areas where visibly damaged friable ACBM exists on floors, on equipment, or on other surfaces), small-scale projects of short duration for removal or repair of ACBM, and periodic reinspection of locations within the facility where ACBM have been identified. Employees involved in O & M activities shall be required to complete the O & M training specified in Part 3 of this O & M Program.

The following O & M activities are to be carried out only by employees with appropriate training:

1. Specific work practices for spot repairs of ACBM, and routine cleaning of visibly asbestos-contaminated areas or surfaces.

   a. All persons other than those involved in the O & M activity shall be restricted from entry to the area by physically isolating the area. For spot repairs, airtight barriers shall be constructed to insure that asbestos fibers released during abatement activities are contained within the work area. The use of glovebags will be permitted in place of a barrier for repair of ACBM located on pipes.

   b. Warning signs shall be posted at the entrance to each work area. The warning sign shall read as follows:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

   c. Air handling systems shall be shut off or temporarily modified to prevent entry of air from the work area into other parts of the building and to restrict other sources of air movement.

   d. All personnel within work areas shall be required to wear personal protective equipment. Full-body disposable fiber-resistant suits with foot coverings and hoods shall be worn over clothing while personnel remain within work areas. In addition, respirators shall be worn in accordance with the OSHA requirements for respiratory protection. At a minimum, half-mask dual-cartridge respirators equipped with HEPA filters shall be worn while remaining in the work area.

4. OPERATIONS AND MAINTENANCE ACTIVITIES (cont.)

e. When cleaning asbestos-contaminated floors or surfaces, personnel shall use proper work practices. Floor shall be cleaned by wet mopping, steam cleaning, and/or HEPA vacuuming. Other surfaces shall be cleaned by wet cleaning/wiping or by HEPA vacuuming. Vacuums without HEPA filtration shall not be used to clean asbestos-contaminated surfaces. Creating dust shall be avoided. All wet cloths, rags, or mops used to clean asbestos-contaminated surfaces shall be disposed of as described in Part 4.(4) below.

f. Spot repair shall be performed only on less than 3 linear feet or 3 square feet of insulation, and shall be conducted only in instances where asbestos abatement is not the principal purpose of the operation. Spot repairs of pipe, tank, or other thermal system insulation shall be conducted by patching sections of insulation using patching compounds of nonasbestos cement to fill in large gouges or missing sections of insulation. The insulation surfaces thus patched shall then be covered with fiberglass cloth impregnated with plaster. The fiberglass cloth shall be applied as follows:

   i. Cut a sufficiently large section of fiberglass cloth to cover the affected areas of insulation. This cloth shall be wrapped around the entire diameter of the affected pipe.

   ii. The fiberglass cloth shall be dipped in a bucket of water and carefully placed over the damaged section of insulation without creating dust or debris. The cloth shall be smoothed by hand so that the cloth remains firmly attached to the insulation.

   iii. Any dust or debris created by this operation shall be cleaned by wet cleaning or HEPA vacuuming.

g. Documentation of all spot repairs shall be maintained with the permanent building records. This documentation shall include, as a minimum, the identity of the skilled trades worker performing the spot repair, the date the spot repair was performed, the specific location of the repair, the methods used, the quantity of the asbestos involved, and receipts for the disposal of any asbestos waste.

2. Specific work practices for spot removal of ACBM by glovebag technique.

   a. Glovebag operations shall be conducted in conformance with the work practices set forth in the Occupational Safety and Health Administration (OSHA) Asbestos Regulation for Construction (29 CFR 1926.58 and 1926.1101). A glovebag is a single-use device that shall be disposed of after removal of a single section of ACBM pipe insulation.

4. OPERATIONS AND MAINTENANCE ACTIVITIES (cont.)

b. Glovebag operations shall be allowed only for removing less than three (3) linear feet of pipe insulation for operations where the principal purpose is not asbestos abatement. No ACBM insulation shall be removed without prior approval of the Asbestos Program Manager.

c. All requirements outlined in this Part 4 (1) (a), (b), (c), and (d) shall be adhered to when performing glovebag operations.

d. Glovebags shall be installed so that they completely cover the pipe in such a manner as to prevent leakage of air or asbestos fibers. The arms, open edges, and other openings in the glovebag shall be sealed with duct tape.

e. The ACBM shall be wetted before its removal and shall be maintained in a wet condition inside the glovebag.

f. The upper portion of the glovebag and surfaces from which asbestos has been removed shall be cleaned by wet wiping until no visible material remains.

g. Removed ACBM shall be deposited in the bottom of the glovebag. A HEPA vacuum shall be employed to exhaust air from the bag. NOTE: Do not use vacuum without HEPA filtration to exhaust excess air from the glovebag. The glovebag and its contents shall be removed from the pipe and immediately containerized in a second, labeled, 6-mil thick polyethylene bag before disposal.

3. Maintenance activities other than small-scale projects of short duration. NOTE: All fiber release episodes, major or minor, shall be immediately reported to the Asbestos Program Manager.

a. Minor fiber-release episode (i.e., the falling or dislodging of three (3) square or linear feet or less of friable ACBM).

i. Thoroughly saturate the debris using wet methods in such a manner as to minimize disturbance of fibers.
ii. Place the asbestos debris in a sealed, leak-proof container.
iii. Clean the area by HEPA vacuuming and wet wiping/mopping of all visible debris in the area. NOTE: Do not use vacuums without HEPA filtration to clean asbestos-contaminated surfaces. All wet cloths, rags, or mops used to clean asbestos debris shall be disposed of as described in Part 4.(4) below.
iv. Repair the area of damaged ACBM with materials such as asbestos-free spackling, plaster, cement, or insulation, or seal with latex paint or an encapsulant.

4. OPERATIONS AND MAINTENANCE ACTIVITIES (cont.)

v. Only employees who have received appropriate O & M training shall perform this work.

b. Major fiber-release episode (i.e., the falling or dislodging of more than three (3) square or linear feet of friable ACBM).

i. Immediately restrict entry into the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.
ii. Shut off or temporarily modify the air handling system to prevent the distribution of fibers to other areas in the building.
iii. Contact the area supervisor.
iv. Only a licensed Asbestos Abatement Contractor shall conduct the response action for any major fiber-release episode and only after the appropriate regulatory agencies are notified.

4. Waste disposal procedures.

a. Wastes include process wastes, housekeeping wastes, removal job wastes, contaminated disposable protective clothing, and filters.

b. Vacuum bags and filters shall not be cleaned. Instead, they shall be sprayed with a fine water mist and placed into a labeled waste container.

c. Process and housekeeping wastes shall be wetted with water or a mixture of water and wetting agent (penetrating-type fluid) before packaging them in disposable containers.

d. ACBM from removal jobs shall be disposed of in leak-proof, double 6-mil thickness plastic bags, plastic-lined cardboard containers, or plastic-lined metal containers. These wastes, which shall be wet when removed, shall be sealed in containers before they dry out in order to minimize fiber release during handling.

e. All asbestos generated at the facility shall be placed in a designated storage area(s). The asbestos waste shall be labeled, transported, and disposed of according to the United States Environmental Protection Agency (U.S. EPA) regulation Title 40 CFR Part 61.

5. PERIODIC REINSPECTION

At least once every six months, each building that contains ACBM or is assumed to contain ACBM shall be reinspected. The inspection shall be conducted by individuals familiar with the building and the locations of ACBM. Those individuals shall have been trained to perform O & M tasks or trained as Asbestos Inspectors. The findings of the reinspections shall be reported to the Asbestos Program Manager, and they shall be kept on file.

At a minimum, the following activities shall be performed during the reinspection:

1. Visually inspect all areas that are identified in the survey report as containing ACBM or as assumed to contain ACBM.
2. Record the date of the reinspection, name of the inspector, and changes in the condition of the materials, including damage due to water, contact, and other damage. Changes in building use that may have an impact on ACBM, such as installation of new equipment, shall be recorded.
3. Submit the information identified in the reinspection for inclusion in the survey report.

A checklist similar to the one in Figure 5-1 shall be used for the periodic reinspections.

In addition, air monitoring to detect airborne asbestos fibers in the building may be used to provide supplemental information during the physical and visual reinspection. Increases in airborne fiber concentrations from earlier levels may indicate unseen damage or disturbance to ACBM and may provide early warning of a potential problem to the Asbestos Program Manager.

Figure 5-1

CHECKLIST FOR
PERIODIC REINSPECTION
OF
ASBESTOS-CONTAINING BUILDING MATERIALS (ACBM)

Quinta Gamelin Army Reserve Center
Asylum Road
Bristol, Rhode Island

Checklist

Name of Inspector _____

Date of Inspection _____

ACBM	LOCATION	CHANGE	NO CHANGE	COMMENTS
Exterior window caulking	Main Building			
Transite cement board on ceiling above heaters	OMS Building			
Rolled paper pipe insulation and associated mud fittings	OMS Building			
Vibration dampener cloth	OMS Building			

6. RECORDKEEPING

The facility shall maintain records on employee training, personal air monitoring, medical surveillance, reinspection results, cleaning and other Operations and Maintenance activities, and asbestos abatement performed at the facility. In addition, minor and major fiber-release episodes shall be recorded and kept with this O & M Program.

Employee records concerning personal air monitoring and medical surveillance shall be maintained as outlined in the OSHA Regulation 1910.1001. This regulation requires that these records be kept on file for at least thirty (30) years.

For each preventive measure and response action taken for ACBM, the facility shall keep records of the following:

1. A detailed written description of the measure or action, including methods used, the location where the measure or action was taken, reasons for selecting the measure or action, starting and completion dates of the work, names and addresses of all contractors involved, and, if ACBM are removed, the name and location of the storage or disposal site of the ACBM. Refer to Appendix M for detailed procedures for each type of response action.

2. The name and signature of any person collecting any air sample, the locations where samples were collected, date of collection, the name and address of the laboratory analyzing the samples, the date of analysis, and the method of analysis.

3. A record of the periodic reinspection required every six (6) months; the name of the inspector, the date, and changes in the conditions of materials noted during the periodic inspection.

4. A description of Operations and Maintenance activities, the name of each person performing these activities, the start and completion dates of the activities, the locations where such activities occurred, a description of the activities used, including preventive measures, and if ACBM are removed, the name and location of the storage or disposal site of the ACBM.

5. A description of each fiber-release episode, the date and location of the episode, the method of repair, preventive measures or response action taken, the name of each person performing the work, and, if the ACBM are removed, the name and location of the storage or disposal site of the ACBM.

APPENDIX G

U.S. ARMY CORPS OF ENGINEERS
ASBESTOS ABATEMENT SURVEY, SEPTEMBER 1990

CEB Files

ASBESTOS ABATEMENT SURVEY
UNITED STATES ARMY RESERVE CENTER
BRISTOL, RHODE ISLAND

Submitted to:

Directorate of Engineering and Housing
Fort Devens, Massachusetts

Prepared by:

United States Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254

September 1990

ASBESTOS ABATEMENT SURVEY
UNITED STATES ARMY RESERVE CENTER
BRISTOL, RHODE ISLAND

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ASBESTOS ABATEMENT SURVEY
UNITED STATES ARMY RESERVE CENTER
BRISTOL, RHODE ISLAND

PROJECT SCOPE:

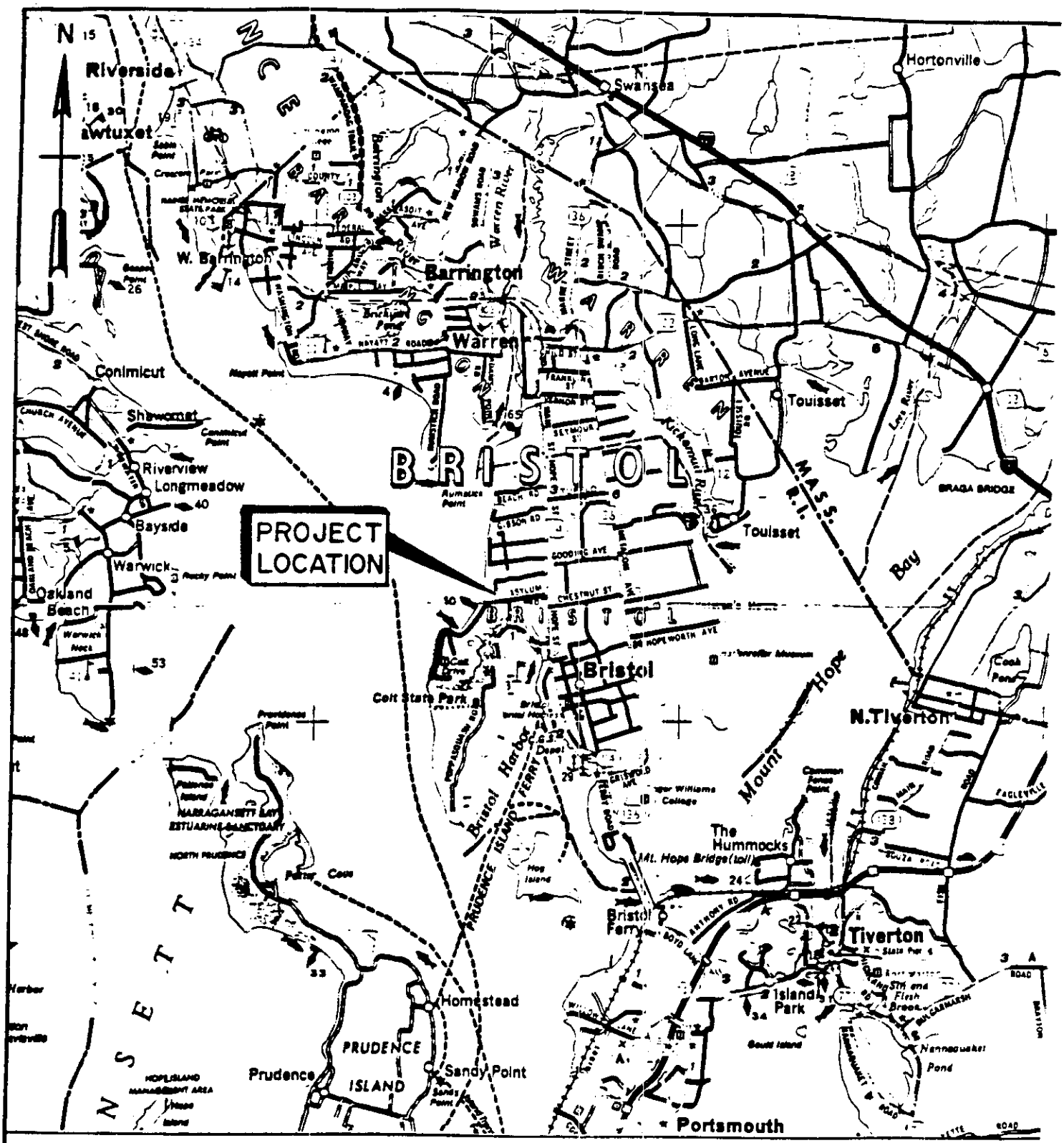
This survey report presents the results of the site inspection, sampling, analysis, and assessment of asbestos-containing building materials (ACBMs) at the United States Army Reserve Center (USARC) in Bristol, Rhode Island, conducted under the Installation Support Program of Fort Devens.

On 13 February 1990, sampling was performed by Nancy Amidon and David Leclair of the Water Quality and Environmental Laboratory, USACE, New England Division (NED). A site inspection was conducted on 11 September 1990 by Mark DeSouza and Jenny Tan of Civil Engineering Branch, NED.

SITE DESCRIPTION:

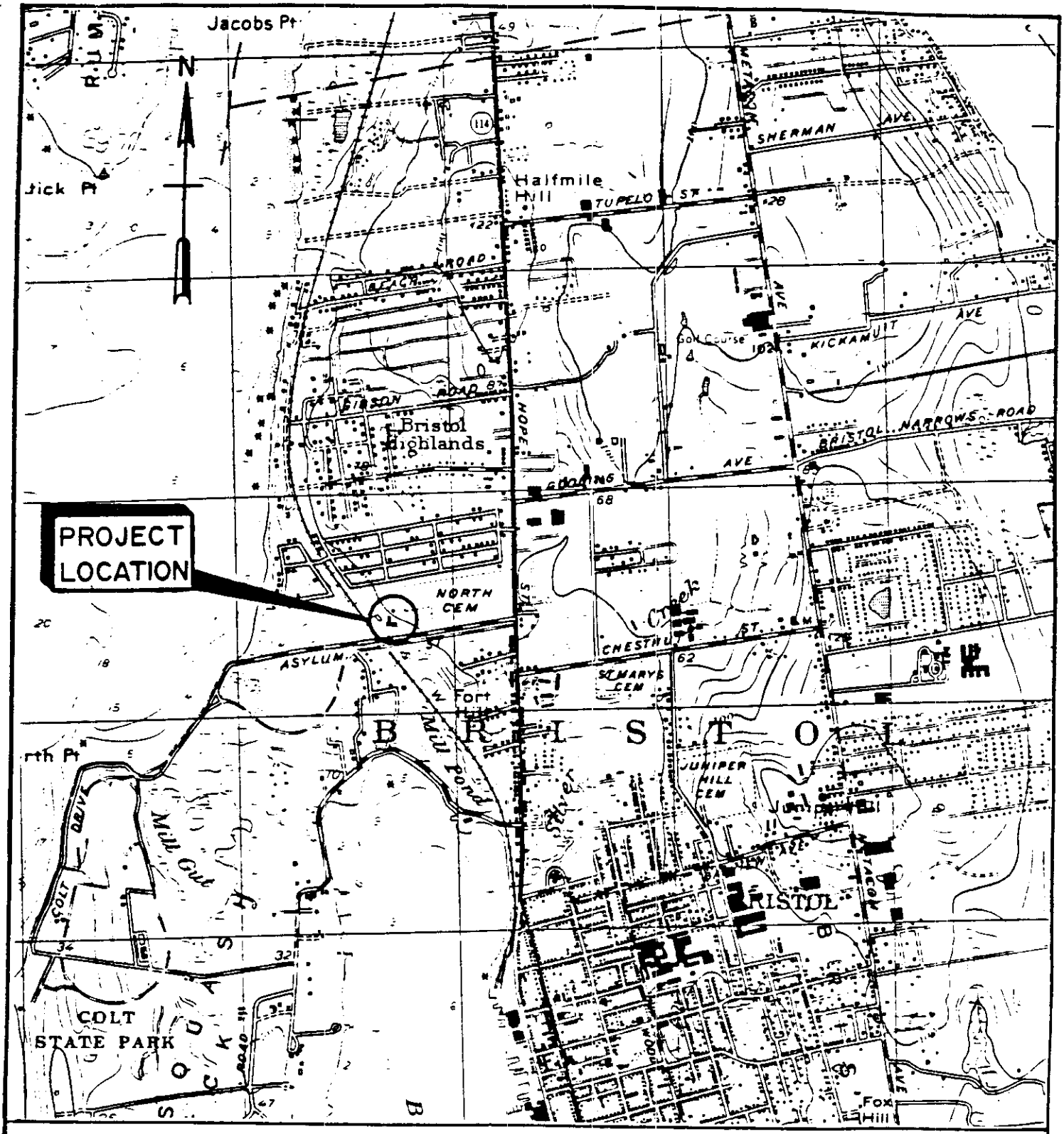
The USARC in Bristol, Rhode Island consists of two buildings, originally constructed in 1958. (See Plate 1 - Location Map, and Plate 2, Vicinity Map.) The main administration and training building was not included in this study, having been completely reconstructed in 1988. The focus of this study is the separate two-bay Organizational Maintenance Shop (OMS), located to the right of the main building (when viewed from the parking lot).

The total floor area of the OMS Shop is approximately 2340 square feet. (See Plate 3 - Floor Plan.) As-built drawings of the complex are available at the Directorate of Engineering and Housing, Ft. Devens.



LOCATION MAP

DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	ASBESTOS ABATEMENT SURVEY UNITED STATES ARMY RESERVE CENTER BRISTOL, RI.	PLATE 1



VICINITY MAP

DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	ASBESTOS ABATEMENT SURVEY UNITED STATES ARMY RESERVE CENTER BRISTOL, RI.	PLATE 2

ASBESTOS ABATEMENT SURVEY PROCEDURES:

The following survey procedures describe how the USARC was inspected, sampled and analyzed to detect the presence of Asbestos-Containing Building Material (ACBM).

1. Site Inspection

Each area of the Organizational Maintenance Shop was examined thoroughly to locate and quantify all suspect ACBM. The condition and accessibility of the suspect material was assessed at each location. The condition of the material was evaluated as having either no significant damage, moderate damage or significant damage. Accessibility was defined as low, medium, or high, based on the degree of difficulty of access to the material.

The suspect material was categorized into homogeneous groups, each group defined as an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture. To the degree possible, the specific material comprising each homogeneous group was identified. A particular homogenous group was often represented at many different locations throughout the building. The results of the site inspection, listed by homogeneous group, are presented in Appendix A: SITE INSPECTION DATA.

2. Sampling and Testing

Bulk samples of each homogeneous group were collected and analyzed for the presence of asbestos. The samples were analyzed by Eastern Analytical Laboratories, Inc. which is accredited by the National Bureau of Standards, NVLAP (Lab 1005) for asbestos analysis of bulk samples using Polarized Light Microscopy with optional Dispersion Staining (PLM/DS).

Using these procedures, the laboratory determined the amount of asbestos as a percentage of the total composition of the material. The laboratory also classified the asbestos material into one of two categories, friable and non-friable. Friable materials can be crumbled, pulverized or reduced to powder by hand pressure. Non-friable is the opposite of friable. The sample numbers, locations, and test results are given in Appendix B: LABORATORY TEST RESULTS.

3. Analysis

The asbestos abatement survey results were determined by analyzing the inspection data and the results of sampling and testing. The survey results are based on the assumption that if one sample from any homogeneous group was found to contain asbestos then the entire homogeneous group was considered to be ACBM. If all samples from a homogeneous group did not contain asbestos, then the entire homogeneous group was considered to be free of asbestos.

ASBESTOS ABATEMENT SURVEY RESULTS:

Of the four homogeneous groups (Groups 1 through 4, as described in Appendix A) of suspect material present in the building, two were found to contain asbestos and two were classified as asbestos-free. Results of the survey are as follows:

Asbestos Detected:

GROUP 3 - THERMAL SYSTEMS INSULATION - PIPE FITTINGS

Group 4 - CEMENT-ASBESTOS BOARD

Asbestos was detected in samples taken from each of the homogeneous groups identified above. The results, describing the integrity of the ACBMs, are presented in Table 1 on the following page.

Asbestos Not Detected:

GROUP 1 - THERMAL SYST. INSULATION - PIPE COVERING (FIBERGLASS)

GROUP 2 - THERMAL SYST. INSULATION - PIPE COVERING (PAPER)

Asbestos was not detected in any of the samples taken from the above homogeneous groups so they are considered to be free of asbestos.

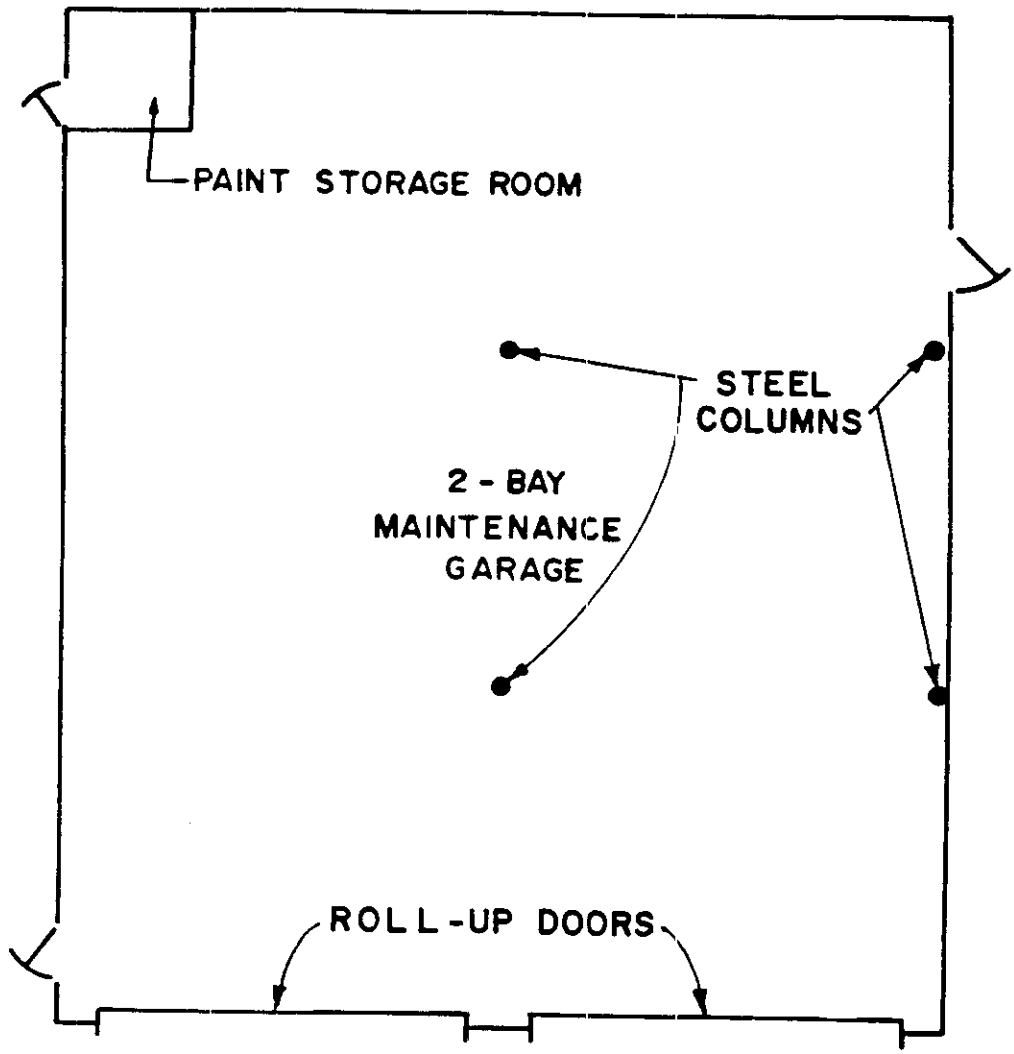
ASBESTOS ABATEMENT SURVEY
UNITED STATES ARMY RESERVE CENTER
BRISTOL, RHODE ISLAND

TABLE 1: ASBESTOS-CONTAINING BUILDING MATERIAL

HOMOGENEOUS GROUP	LOCATION Rm #	LOCATION Name	QUANTITY No.	QUANTITY O.D.	CONDITION	ACCESSIBILITY Damage Potent'l	ACCESSIBILITY Hgt above Floor	SAMPLE NO.	ASBESTOS CONTENT(%) TYPE	FRIABILITY
3. Thermal Systems Ins.- Pipe fittings		Maintenance Garage	8	3"	NSD	medium	15'	7951	5% Chrysotile	Friable
4. Cement- Asbestos Board		Maintenance Garage ceiling	64 SF		NSD	medium	12'	7952	10% Chrysotile	Friable

Note 1: Condition: NSD - No Significant Damage
MD - Moderate Damage
SD - Significant Damage

Note 2: TSI - Thermal Systems Insulation



FLOOR PLAN

N. T. S.

DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS.	ASBESTOS ABATEMENT SURVEY UNITED STATES ARMY RESERVE CENTER BRISTOL, RI.	DATE: SEPT. 1990 PLATE: 3

APPENDIX A

SITE INSPECTION DATA (By Homogeneous Group)

The four homogeneous groups identified at the Bristol OMS and their corresponding locations are listed below. The condition and accessibility of the material, as well as the bulk sample numbers, are also recorded for each homogeneous group. See the Floor Plan (Plate 3) for locations.

USARC, Bristol, RI:

GROUP 1. THERMAL SYSTEMS INSULATION - PIPE COVERING (FIBERGLASS):
Location: Maintenance Garage.
Condition: No Significant Damage.
Accessibility: high.
Sample No.: 7949.

GROUP 2. THERMAL SYSTEMS INSULATION - PIPE COVERING (PAPER):
Location: Maintenance Garage.
Condition: Moderate Damage.
Accessibility: high.
Sample No.: 7950.

GROUP 3. THERMAL SYSTEMS INSULATION - PIPE FITTINGS:
Location: Maintenance Garage.
Condition: No Significant Damage.
Accessibility: medium.
Sample No.: 7951.

GROUP 4. CEMENT-ASBESTOS BOARD:
Location: Maintenance Garage - above ceiling-mounted unit heaters.
Condition: No Significant Damage.
Accessibility: medium.
Sample No.: 7952.

APPENDIX B

LABORATORY TEST RESULTS

SAMPLE NO.	MATERIAL	LOCATION	TEST RESULTS
7949	pipe insulation	DS-1, garage	negative
7950	pipe insulation	DS-2, garage	negative
7951	elbow insulation	DS-3, garage	POSITIVE
7952	sheet insul. board	DS-4, garage ceiling	POSITIVE

Following are the complete laboratory results for the above-listed samples.

BULK ASBESTOS ANALYSIS BY EASTERN ANALYTICAL LABORATORIES, INC.
149 Rangeway Road, N. Billerica, MA 01862
PLM-DS (Polarized Light Microscopy with optional Dispersion Staining)
(EPA METHOD EPA-600/M4-82-020)
VERSION 3.2 COPYRIGHT (c) 1989 BY EAL

02-27-1990 EAL JOB# 11407 W K B

CLIENT: ARMY CORPS, HUBBARDSTON, MA; PO# DACW3390M0434

SAMPLE NO.: 7949 LOCATION: DS-1. GARAGE GLASS RUN, BRISTOL, RI
SAMPLE GROSS APPEARANCE: FIBROUS. FRIABLE
COLOR, TEXTURE, ETC.: YELLOW GLASSY MATS

NO ASBESTOS DETECTED

Immersion Media:..... 1.590HD

100 PERCENT TOTAL NON-ASBESTOS FIBER
: FIBERGLASS CELLULOSE

NO NON-FIBROUS MATTER DETECTED
:

DATE: 02-27-1990 SIGNED: W K Beard

Eastern Analytical Laboratories is accredited by the National Bureau of Standards, NVLAP (Lab 1005) for asbestos analysis of bulk samples by Polarized Light Microscopy with optional Dispersion Staining (PLM/DS) and meets requirements of AHERA 40 CFR 763.87(a).

Accreditation in no way constitutes or implies product certification, approval or endorsement by NBS.

BULK ASBESTOS ANALYSIS BY EASTERN ANALYTICAL LABORATORIES,INC.
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(EPA METHOD EPA-600/M4-82-020)
VERSION 3.2 COPYRIGHT (c) 1989 BY EAL

02-27-1990 EAL JOB# 11407 W K B

CLIENT: ARMY CORPS, HUBBARDSTON, MA; PO# DACW3390M0434

SAMPLE NO.: 7950 LOCATION: DS-2, GARAGE PAPER RUN, BRISTOL, RI
SAMPLE GROSS APPEARANCE: FIBROUS, FRIABLE
COLOR, TEXTURE, ETC.: TAN PAPER

NO ASBESTOS DETECTED

Immersion Media:..... 1.590HD

70 PERCENT TOTAL NON-ASBESTOS FIBER
: CELLULOSE FIBERGLASS

30 PERCENT TOTAL NON-FIBER MATTER
: GLASS FRAGMENTS MINERAL GRAINS

DATE: 02-27-1990 SIGNED: _____

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PLM-DS (Polarized Light Microscopy with Optional Dispersion Staining)
(EPA METHOD EPA-600/M4-82-020)
VERSION 3.2 COPYRIGHT (c) 1989 BY EAL

02-28-1990 EAL JOB# 11407 W K BARNETT

CLIENT: ARMY CORPS, HUBBARDSTON, MA; PO# DACW33904M0434

SAMPLE NO.: 7951 LOCATION: DS-3, GARAGE ELBOW, BRISTOL, RI
SAMPLE GROSS APPEARANCE: MIXED FIBROUS & NON-FIBROUS. FRIABLE
COLOR, TEXTURE, ETC.: WHITE CEMENT

10 PERCENT TOTAL ASBESTOS
: 5 PERCENT AMOSITE 5 PERCENT CHRYSOTILE

ASBESTOS LAB DATA	AMOSITE	CHRYSOTILE
Morphology:.....	ACICULAR	WAVY
Color:.....	NONE	NONE
Pleochroism:.....	NON-PLEOCHROIC	NON-PLEOCHROIC
Extinction Angle.....	0	0
Birefringence:.....	0.03	0.01
Sign of Elongation:...	POSITIVE	POSITIVE
Index (Parallel):.....	1.68	1.55
Index (Perpendicular):	1.65	1.54
Dispersion Staining:..	NO	NO
Other Features:.....		
Immersion Media:.....	1.590HD	

NO NON-ASBESTOS FIBER DETECTED
:

90 PERCENT TOTAL NON-FIBER MATTER
: GYPSUM LIME

DATE: 02-28-1990 SIGNED: W K Barnett

Eastern Analytical Laboratories is accredited by the National Bureau of Standards, NVLAP (Lab 1005) for asbestos analysis of bulk samples by Polarized Light Microscopy with Optional Dispersion Staining (PLM/DS) and meets requirements of AHERA 40 CFR 763.87(a).

Accreditation in no way constitutes or implies product certification, approval or endorsement by NBS.

BULK ASBESTOS ANALYSIS BY EASTERN ANALYTICAL LABORATORIES, INC.
149 Rangeway Road, N. Billerica, MA 01862
PLM-DS (Polarized Light Microscopy with optional Dispersion Staining)
(EPA METHOD EPA-600/M4-82-020)
VERSION 3.2 COPYRIGHT (c) 1989 BY EAL

02-28-1990 EAL JOB# 11407 W K BARNETT

CLIENT: ARMY CORPS, HUBBARDSTON, MA; PO# DACW3390M0434

SAMPLE NO.: 7952 LOCATION: DS-4, GARAGE SHEET GOODS, BRISTOL, RI
SAMPLE GROSS APPEARANCE: MIXED FIBROUS & NON-FIBROUS, FRIABLE
COLOR, TEXTURE, ETC.: GRAY BOARD

10 PERCENT TOTAL ASBESTOS
: 10 PERCENT CHRYSOTILE

ASBESTOS LAB DATA	CHRYSOTILE
Morphology:.....	WAVY
Color:.....	NONE
Pleochroism:.....	NON-PLEOCHROIC
Extinction Angle.....	0
Birefringence:.....	0.01
Sign of Elongation:...	POSITIVE
Index (Parallel):.....	1.55
Index (Perpendicular):	1.54
Dispersion Staining:..	NO
Other Features:.....	
Immersion Media:.....	1.590HD

NO NON-ASBESTOS FIBER DETECTED
:

90 PERCENT TOTAL NON-FIBER MATTER
: LIME MINERAL GRAINS

DATE: 02-28-1990 SIGNED: W K Barnett

Eastern Analytical Laboratories is accredited by the National Bureau of Standards, NVLAP (Lab 1005) for asbestos analysis of bulk samples by Polarized Light Microscopy with optional Dispersion Staining (PLM/DS) and meets requirements of AHERA 40 CFR 763.87(a).

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RI001
QUINTA-GAMELIN USARC
Bristol, Rhode Island

FLOOR AND STORM DRAIN INVENTORY

AND

NATURAL RESOURCES INVENTORY

Prepared for:

94th Department of the Army
Regional Support Command

Prepared by:

U.S. Army Corps of Engineers
New England Division
Waltham, MA 02254-9149

With Technical Assistance from:

ENSR
Acton, MA 01720

M950217RI001

June, 1996

DOC NO. 9000-025-100
9000-026-100

FILE NAME EXPLANATION FOR FLOOR AND STORM DRAIN, AND NATURAL RESOURCES REPORTS

(EXAMPLE FOR MA009 – BURKE CENTER – FORT DEVENS – MASSACHUSETTS)

INSTRUCTIONS FOR ACCESSING FILES:

ALL NATURAL RESOURCES FILES ARE ACCESSED THROUGH LOTUS 1-2-3 RELEASE 2.4 WITH WYSIWYG.
THE FLOOR AND STORM DRAIN FILES ARE ACCESSED THROUGH LOTUS 1-2-3 RELEASE 5.

THE FIRST FIVE CHARACTERS (MA009) ARE THE FACILITY ID # FOR NATURAL RESOURCES AND FLOOR AND STORM DRAIN REPORTS.

FOR NATURAL RESOURCES:

THE FOLLOWING TWO LETTERS (NR) INDICATE THAT THE TABLE IS A NATURAL RESOURCES TABLE
THE LAST LETTER OR NUMBER INDICATES THE INDIVIDUAL TABLE (5 CORRESPONDS TO TABLE A5 – BIRDS).

GENERAL

FILE NAME	DESCRIPTION
MA009E	EXPLANATION OF FILE NAMES AND ACCESS INFORMATION

A. FLOOR AND STORM DRAIN REPORT

FILE NAME	DESCRIPTION
MA009	FLOOR AND STORM DRAIN SURVEY TABLES AND COMMENTS

B. NATURAL RESOURCES TABLES

FILE NAME	DESCRIPTION
MA009NRC	TABLE OF CONTENTS
MA009NRM	DATA COLLECTION AND REPORTING ISSUES
MA009NRS	MASTER SUMMARY TABLE
MA009NR1	TABLE A1 – WILDLIFE AND VEGETATION OBSERVED AND EXPECTED
MA009NR2	TABLE A2 – PROTECTED SPECIES – VEGETATION AND WILDLIFE
MA009NR3	TABLE A3 – PROTECTED PLANTS
MA009NR4	TABLE A4 – AMPHIBIANS AND REPTILES
MA009NR5	TABLE A5 – BIRDS
MA009NR6	TABLE A6 – MAMMALS
MA009NRF	REFERENCES

NOTE: THE STATE AND FEDERAL PROTECTED SPECIES TABLES AND OTHER DATA ARE NOT ON DISC FILES – THE ONLY COPIES ARE THE ORIGINALS INCLUDED WITH THE REPORT.

NOTE: COMPUTER FILE NAMES ARE AT THE BOTTOM OF EACH TABLE EXAMPLE: MA009NRC – TABLE OF CONTENTS

US ARMY RESERVE CENTER DRAIN SURVEY
SUMMARY and GENERAL COMMENTS

Facility ID #: RI001 Center Name: Quinta - Gamelin USARC

Address: Asylum Road City: Bristol State: RI

Site Point of Contact: Mr. Douglas Date of Survey: 20-21 Jun 94

1. Regulatory Compliance Violations:
No regulatory violations were observed during the site visit.

2. Potential Regulatory Compliance Violations:
ENSR had no available plans which showed the design or plumbing connections for Wash Rack Number 1 (WR-1). Although water was poured down WR-1, ENSR was unable to determine the outfall. There was no apparent oil/water separator associated with WR-1. The USARC currently has no vehicles assigned and USARC personnel indicate WR-1 is not used. If the outfall of WR-1 is a dry well and, in the future, vehicles are assigned to the USARC, the use of WR-1 would be a violation of Rhode Island environmental regulations, especially without an oil/water separator. There are no floor drains in the OMS Building.

3. Recommended Actions to Improve Environmental Practices:
Storm Drain Number 3 (SD-3) and SD-4 are in the immediate vicinity (within 35-feet) of the underground 2,000 gallon No. 2 fuel oil tank. There is a potential for a spill during refueling of the fuel tank to enter either SD-3 or SD-4. It is recommended that either a dike be placed around the refueling area or that the facility establish a policy to cover SD-3 and SD-4 during refueling operations.

4. Potential Problems:
Within a day of ENSR's site visit there was a collapse of the cover to a concrete box which was part of a septic system. The box was dry, which indicated that this part of the system was not currently in use. ENSR confirmed with the local municipal sanitary sewer system that the USARC was not connected to the municipal sanitary sewer system, but has its own septic system.

5. Uncompleted Inventory Items:
a. SD-1 is in a grassy area to the southeast of the USARC. USARC personnel did not think that SD-1 was on the USARC property; however, based on plans available SD-1 does appear to be on USARC property. The outlet pipe indicated that SD-1 drained to a headwall in the median of Asylum Road. Although ENSR poured a large amount of water down SD-1, ENSR could not verify where the water was draining.
b. Verify the outfall of WR-1.

6. Other Comments:
a. There were no roof drains from the OMS building. Storm water drains off the roof, which is sloped to the north, and falls to the ground surface.
b. Green paint was observed to have dried on the top of the grate for SD-6.
c. By visually aligning outflow pipes from the SDs, SD-2 through SD-7 appeared to drain into a seasonal pond designed to collect storm water. At the time of the ENSR site visit the pond was dry. ENSR attempted to verify the outflow, but could not establish sufficient flow volume of water in the storm drain system to cause flow into the pond.

7. Data Gathering Parameters and Limitations
This report contains the results of a survey conducted under a series of agreed constraints and limitations described in Section 7.1 below. In addition, site-specific factors may have affected the quality or completeness of data gathered and these are described in Section 7.2 below.

Section 7.1

Surveys were conducted using plans obtained by the Corps of Engineers New England Division from the 94th Regional Support Command drawing vault at Fort Devens, MA. The best available site and interior plans on which the surveys were based, in many instances, did not contain:

a. up-to-date information;
b. a complete property boundary;
c. storm water drainage data; and/or
d. plumbing information.

In some cases, no site and/or interior plans were provided and information was hand-sketched by the survey team.

Data collection was limited to the information that could be gathered in the assigned time frame (ranging from one to two days). No supplementary data collection was performed.

a. Outfalls to municipal sanitary or storm sewer could not be determined because either manways were located in the middle of streets and could not be safely accessed or a visit to the municipal authorities, which could not be performed within the assigned time frame, would be required to confirm connections.

b. Information about rooms and/or areas which were not made accessible to the survey team was provided by the facility manager or other facility personnel.

c. Drains shown on field maps are shown in their approximate location. Locations were not scaled off.

d. Drainage associated with purely sanitary purposes such as sinks, water bubblers, toilets, or bermed shower drains was not inventoried. Shower drains which were not located in a bermed area and thus could potentially collect drainage other than sanitary were inventoried as floor drains.

e. Slop sinks which were located on the floor in the janitors closets and could potentially collect drainage other than sanitary were inventoried. Slop sinks attached to the wall were not inventoried.

f. Military organizational maintenance (-20 level and above) facilities, within EPA Region I, are considered as industrial facilities and, therefore, require an NPDES storm water permit. Because of this requirement, roof drains were inventoried for buildings in which greater than organizational maintenance is performed because these buildings would be considered industrial facilities.

g. Surrounding property was classified by usage such as residential, industrial, commercial, or woodland according to the visual observations of the survey team. No additional research was performed to confirm this property classification.

h. The status of drains and pretreatment systems was determined by observation only.

i. Surface drainage directions were estimated based on observation of land contours. Drainage directions were not determined by observing water flow.

j. Water meter pits and non-PCB transformers were not inventoried and thus are not depicted on the field map.

k. Features on the map which did not directly affect the drainage survey were considered to be outside the scope of the field survey and thus were not updated to reflect current status.

l. Vehicles parked on the site or equipment stored on site or inside the building were not moved to survey for drains.

m. OMS work pits were inventoried as containing a floor drain based on information from facility personnel. The presence of a floor drain in the work pit could not be confirmed by visual observation because the work pits were either cemented in, covered by equipment, filled with water, or the sump of the work pit was covered by a grate which could not be removed.

Section 7.2

a. The site plans and building interior plans available did not reflect the current building on site. The facility manager provided the survey team with an updated site plan which reflected the current building on site.

b. The complete property boundary was not shown on the available plans.

c. The facility manager reported that no maintenance is performed in the OMS Building.

FACILITY ID#: RI001 CENTER NAME: Quinta - Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: W. Kidd, M. Healey - ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas/Civilian DATE OF SURVEY: 20-21 JUN 94

WEATHER (Day 1 Sunny, low 80's. Day 2 Sunny, low 80's.)

REFERENCE SITE PLAN - TITLE: Site Utility Plan Dwg. No. File No. 7582-6504

DRAWING DATE: 22 OCT 86 CONTRACTOR: King-Architects/Minges Ass. SHEET NUMBER: 4 of 21 OTHER: Sheet Reference No. C-3

INDEX ON SITE PLAN	ROOM NUMBER/ LOCATION	DRAIN		OUTFALL		TREATMENT		POTENTIAL CONTAMINANTS	REGULATORY COMPLIANCE STATUS
		STATUS	VERIFIED	TYPE	VERIFIED	TYPE	STATUS		
FLOOR DRAINS									
FD - 1	North end of the scullery.	CIU	OBS	LCF	PNO	GRT - 1	CIU	JAN	IN
FD - 2	East end of the scullery.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 3	South end of the scullery.	CIU	OBS	LCF	PNO	GRT - 1	CIU	JAN	IN
FD - 4	North end of food preparation room.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 5	South end of food preparation room.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 6	In the food storage room.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 7	In the mechanical room.	CIU	OBS	LCF	PNO	NONE		FLO (1)	IN
FD - 8	In the Mens Room.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 9	In the Womens Room.	CIU	OBS	LCF	PNO	NONE		JAN	IN
FD - 10	In the supply room.	CIU	OBS	LCF	PNO	NONE		NONE	IN
FD - 11	In the arms vault.	REM	OBS						IN
FD - 12	In the drill hall.	CIU	OBS	LCF	PNO	NONE		NONE	IN
STORM DRAINS									
SD - 1	Southeast corner of site.	CIU	OBS	UNK (2)	NOP	UNK		POL, FER	IN
SD - 2	East of USARC building.	CIU	OBS	SRN	PNO	NONE		POL	IN
SD - 3	North of SD - 2.	CIU	OBS	SRN	PNO	NONE		POL, FLO (3)	IN
SD - 4	North of SD - 3.	CIU	OBS	SRN	PNO	NONE		FLO,ANT,BAT,DEG,DES,POL,WOL, (3) (4	IN
SD - 5	South of OMS building.	CIU	OBS	SRN	PNO	NONE		ANT,BAT,DEG,DES,GAS,POL,WOL, (4)	IN
SD - 6	West of SD - 5.	CIU	OBS	SRN	PNO	NONE		POL, observed paint stains on grate.	IN
SD - 7	West of USARC building.	CIU	OBS	SRN	PNO	NONE		POL	IN

COMMENTS: (1) FD-7 collects drainage from the air conditioning unit. (2) There is a pipe from SD-1 heading towards a headwall in the drainage swale in the median of Asylum Road. After adding water to SD-1, we still could not verify the headwall to be the outfall of SD-1. (3) SD-3 and SD-4 are located within 35 feet of an underground fuel oil tank. (3) SD-4 and SD-5 could potentially collect drainage from the OMS building, although the OMS building is not currently in use.

FACILITY ID#: RI001 CENTER NAME: Quinta - Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: W. Kidd, M. Healey - ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas/Civilian DATE OF SURVEY: 20-21 JUN 94

INDEX ON SITE PLAN	ROOM NUMBER/ LOCATION	DRAIN STATUS	DRAIN VERIFIED	OUTFALL TYPE	OUTFALL VERIFIED	TREATMENT TYPE	TREATMENT STATUS	POTENTIAL CONTAMINANTS	REGULATORY COMPLIANCE STATUS
WASH RACK									
WR - 1	West of OMS building.	CIU	OBS	NONE (5)	OBS	NONE (6)		ANT,BAT,DEG,DES,GAS,OIL,POL,WOL	POUT
CAN WASH									
CW - 1	Outside, north of kitchen.	CIU	OBS	LCF	PNO	GRT	CIU	JAN	IN
PRE-TREATMENT SYSTEMS									
GRT - 1	In the scullery.	CIU	OBS	LCF	PNO				IN

COMMENTS: (5) There is no apparent outfall for WR-1. (6) There is no apparent pretreatment system for WR-1.

Explanations of report codes follow inventory sheets.

DRAIN.

TYPE.

CW - A can wash is a hard surfaced area with a drain, outside, usually next to a kitchen used for washing garbage cans.
F - A funnel drain collects drainage through a funnel and does not collect any floor drainage directly. These are often found in the boiler rooms.
FD - A floor drain is a grated drain collecting drainage from the floor.
GP - A grease platform is an elevated structure onto which vehicles are driven for maintenance. A drain is associated with this structure.
OUT An outlet is the defined point where the effluent of a pipe discharges.
RD - A roof drain collects drainage from a roof usually to discharge onto the ground surface or into the storm drainage system.
SD - A storm drain collects outdoor surface drainage usually in the form of a catch basin or drop inlet.
UIC - An underground injection chamber collects drainage to discharge directly into the ground.
WR - A wash rack is a hard surfaced area with a drain designated for washing vehicles.

STATUS.

BLK - The drain is blocked or filled with debris and does not operate properly.
CIU - The drain is currently in use and is operating properly.
OTH - The status of the drain is unique and will be further described with a numbered note.
POT - The drain does not currently operate properly however, it is potentially operational without an extensive amount of work done.
REM - The drain has been purposely removed from service.

VERIFIED.

OBS - The issue has been observed by ENSR personnel during the site visit.
NOP - The issue has not been observed by ENSR personnel from the available plans.
PNO - The issue has not been observed by ENSR personnel during the site visit but has been observed from the available plans.
REP - The issue has been confirmed by a verbal report from the site personnel.

OUTFALL.

TYPE.

GRW - The outfall discharges into the groundwater on site.
LCF - The outfall discharges into a leachfield on site.
SAN - The outfall discharges into a local municipal sanitary system.
STM - The outfall discharges into a local municipal storm drainage system.
UNK - The discharge location is unknown.
WTF - The outfall discharges to a wetlands area off of the site property.
WTN - The outfall discharges to a wetlands area on the site property.
WWTP - The outfall discharges to a waste water treatment plant other than municipal.
DRY - The outfall discharges to a drywell on site.
INF - The outfall discharges to an intermittent stream off of the site property.
INN - The outfall discharges to an intermittent stream on the site property.
SRF - The outfall discharges to a stream or a river off of the site property.
SRN - The outfall discharges to a stream or a river on the site property.
SWF - The outfall discharges to standing water off of the site property.
SWN - The outfall discharges to standing water on the site property.

VERIFIED.

OBS - The issue has been observed by ENSR personnel during the site visit.
NOP - The issue has not been observed by ENSR personnel from the available plans.
PNO The issue has not been observed by ENSR personnel during the site visit but has been observed from the available plans.
REP - The issue has been confirmed by a verbal report from the site personnel.

TREATMENT.

TYPE.

ANS - An acid neutralizing sump is a treatment system usually associated with drainage from a battery storage area.
DET - A detention basin is a treatment system to separate sediment from storm drainage.
GRT - A grease trap is a treatment system used to separate grease from the kitchen drainage.
OWS - An oil water separator is a treatment system used to separate oil and other LNAPL materials from drainage.
RT - A running trap is a treatment system used to prevent back flow into drainage pipes.
UNK - It is unknown if the drainage has a treatment system.

STATUS.

CIU - The treatment system is operating but currently in use and is operational.
MAT - The treatment system does not function properly and needs maintenance.
NOT - The treatment system does not operate.
OCC - The treatment system operates occasionally.

POTENTIAL CONTAMINANTS

ANT - Anti-freeze.
BAT - Battery acid.
CBR - Chemical, biological, or radioactive agents.
DEG - Degreasing solvent (product).
DES - Diesel fuel.
FER - Lawn fertilizer.
FLO - Fuel oil.
GAS - Gasoline.
HAZ - Hazardous wastes.
JAN - Janitorial supplies.
OIL - Oil (product).
OTH - The potential contaminant is unique and will be further described with a numbered note.
POL - Any combination of petroleum, oil and lubricants.
UNK - It is unknown if there are any potential contaminants.
WEP - Potential contaminants may occur due to weapons cleaning in the area.
WOL - Waste oil.

REGULATORY COMPLIANCE.

CND - The status of compliance can not be determined based on available information.
IN - The facility is in compliance, based on available information.
OUT - The facility definitely violates regulatory compliance.
POUT - The facility could potentially be out of compliance.

US ARMY RESERVE CENTERS
NATURAL RESOURCES SURVEY TABLES

FACILITY ID#: RI001
CENTER NAME: Bristol, Rhode Island – Quinta – Gamelin USARC

TABLE OF CONTENTS

DATA COLLECTION AND REPORTING ISSUES

US ARMY RESERVE CENTER
NATURAL RESOURCE INVENTORY

US ARMY RESERVE CENTER – NATURAL RESOURCE INVENTORY
FACILITY ID#: RI001
CENTER NAME: Bristol,Rhode Island–Quinta–Gamelin USARC

A.CONTRACT SCOPE–OF–WORK

– Review federal regulations governing preparation of Natural Resource Management Plans for USAR sites.
– Conduct a site visit and inventory existing natural resources based on review of existing on–site reports and a general site walkover. A formal wetland delineation is not a part of this scope.
– Provide to the 94th RSC two copies of the two (2) page draft spreadsheet and map for review, and two copies of the final spreadsheet and map. The final spreadsheet will also be provided on computer disk.
– Delineate vegetative habitats and land uses on the site map provided by the 94th RSC, in pencil.
– Attend three (3) in–progress review meetings in Waltham or at Ft. Devens.
– The project will be completed in approximately 12 months from award date, which was 29 September, 1993.

B. GENERAL DATA COLLECTION AND REPORTING ISSUES THAT ARE COMMON TO ALL CENTERS

– The site inventory was limited to a one or two day visit.
– The inventory could not be conducted during the optimum season at each Center for the following reasons:

1) Waiting to initiate inventories until the spring (mid–April) would not have permitted completion of surveys at all 43 Centers, provide an adequate review period for the 94th RSC, and allow ENSR to complete the final reports by the delivery date of 30 October 1994.

2) A one or two day survey would not have provided a complete set of natural resource data even if it had been conducted in the spring. For example, amphibian surveys would need to be conducted in April and May, while breeding bird surveys should be conducted in early June.

3) Similarly, surveys for protected plants would need to be conducted over a two to four month period, based on the flowering season for each protected species.

– Access to the Center early in the morning (bird studies) and at night (amphibian surveys) were generally impractical due to on–site military personnel availability.

It should be noted that representative breeding bird data were collected at only a few of the Centers.

– The vegetative mapping and land use delineations were plotted on site plans provided by CENED. At some Centers, accurate or up–to–date maps were not available. For a number of Centers, the site plans provided did not include the entire property.
– Limited information was collected for adjacent properties and habitats.
– Development of Natural Resource Management Plans were not within the scope of this project.
– No attempt was made to identify and map every plant at each Center. If several individuals of the same species occurred on a Center, the average height was indicated on the summary legend on the facility base map.

C. CENTER – SPECIFIC DATA COLLECTION ISSUES

Note : Some site specific data, such as weather, survey dates, contacts, etc. are included on the Summary Table for each Center.

1) The Facility Base Map does not include the entire property to the northwest. A new base map should be developed.

FACILITY ID#: RI001 CENTER NAME: Bristol – Quinta – Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: Jim Duncan – ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas DATE OF SURVEY: 20 JUNE 94

WEATHER: (Day 1 Clear; no wind; 82 deg F Day 2 NA

REFERENCE SITE PLAN – TITLE: Expand USAR Center – 60 M to 100 M
Site Utility Plan – Bristol, Rhode Island Dwg. No. \

DRAWING DATE: OCT.22,1986? CONTRACTOR: King – Architects
Avon, Connecticut SHEET NUMBER: 4 of 27? OTHER: File No. 7582–6504
Sheet Ref. No. – C – 3

Scale:1"=20'

A. FACILITIES/HABITATS	IMPROVED GROUNDS	SEMI–IMPROVED GROUNDS	UNIMPROVED GROUNDS	COMMENTS
Buildings and Paved Areas (ac)	1.35 acres	\	\	All parking areas paved.
Grassed Areas (ac)	\	2.55 acres	\	Lawn maintained inside and outside fence; limited old field habitat.
Wooded Areas (ac)	\	\	1.31 acres	Small woodland acreage on west edge of Property.
Water (ac)	\	\	0.09 acres	Seasonal/temporary pool in woodland from storm runoff from Center parking lot
Total (ac) (5.3 acres)	1.35 acres	2.55 acres	1.40 acres	

(CENTER RE–BUILT IN 1988 WITH NEW PARKING AND LANDSCAPING)

B. Human Uses	COMMENTS
Scenic and Natural Areas	None on Center.
Aesthetic Values	None on Center.
Recreational Areas	No.
Public Use	No. Some public use of pond area in woodland, mainly juveniles.
Millitary Use Only	No.

C. MANAGEMENT PLANS	None identified.

C.1 TIMBER Mgmt. Prog.	None identified.
Commercial Forest (ac)	None identified. A few commercially valuable maples, poplar, etc.

C.2 Wildlife Mgmt. Prog.	None identified.
Hunting	None identified.
Fishing	None identified.

C.3 Programs With State or Federal Agencies	None identified.

C.4 Grounds Maintenance	
Landscaping	Extensive and well maintained.
Prescribed Burning	Not used.
Weed Control	Primarily manual along fences; some herbicide use along fence also observed.
Agricultural Activity	None observed.
Pest Control	None indicated. Ants a potential problem.

FACILITY ID#: RI001 CENTER NAME: Bristol – Quinta – Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: Jim Duncan – ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas DATE OF SURVEY: 20 JUNE 94

D. NATURAL RESOURCES

D.1 Surface Water Bodies	Pond/Impoundment	Lake	River	Brook	Offsite Discharge
General Occurrence	Usually dry.	\	\	\	Storm runoff into seasonal pool
Acres (est.)	0.09 Acres	\	\	\	\

D.2 Wetlands	Riverine	Lacustrine	Palustrine	Estuarine	Marine
General Occurrence	\	\	Yes	\	\
Sub–Type Species (1)	\	\	Temporary E,F	\	\
Floodplains/Riparian Veg.	\	\	\	\	\
Acres (est.)	\	\	0.09 Acres	\	\

D.3 Upland Vegetation	Trees	Shrubs	Grasses	Forbs	
General Occurrence	Yes	Yes	Yes	Yes	
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLES A2 AND A3. SEE ATTACHED LETTER).				
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLES A2 AND A3. SEE ATTACHED LETTER).				
Commercially Valuable	A few maple, poplar.	\	\	\	

D.4 Invertebates					
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).				
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).				

			Freshwater					
D.5 Fish	Marine	Estuarine	Marsh	Pond	Lake	Brook	River	Impoundment
General Occurrence	\	\	\	\	\	\	\	\
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).							
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).							
Sport Fishing	\	\	\	\	\	\	\	\
Commercial Use	\	\	\	\	\	\	\	\

FACILITY ID#: RI001 CENTER NAME: Bristol – Quinta – Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: Jim Duncan – ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas DATE OF SURVEY: 20 JUNE 94

D.6 Reptiles and Amphibians	Salamanders	Frogs	Toads	Turtles	Lizards	Snakes
General Occurrence	SEE TABLE A1	SEE TABLE A1	SEE TABLE A1	SEE TABLE A1	\	SEE TABLE A1
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).					
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).					

D.7 Birds	Waterbirds (3)	Raptors (4)	Gamebirds (5)	Flycatchers	Swallows	
General Occurrence (2)	S SEE TABLE A5	H,O SEE TABLE A5	W SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	
Nesting	S SEE TABLE A5	H,O SEE TABLE A5	W SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	
Migration	S SEE TBLE A5	H SEE TABLE A5	W SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	
Wintering	\	H,O SEE TABLE A5	\	\	\	
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).					
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).					
Waterfowl Hunting	\	\	\	\	\	
Gamebird Hunting	\	\	\	\	\	

D.7 Birds *(CONT'D)*	Woodpeckers	Wood Warblers	Thrushes	Sparrows	Other Passerines
General Occurrence (2)	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5
Nesting	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5
Migration	\	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5	SEE TABLE A5
Wintering	SEE TABLE A5	\	\	SEE TABLE A5	SEE TABLE A5
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).				
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).				

FACILITY ID#: RI001 CENTER NAME: Bristol – Quinta – Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: Jim Duncan – ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas DATE OF SURVEY: 20 JUNE 94

D.8 Mammals	Marsupials	Insectivores (6)	Bats	Rodents (7)	Carnivores (8)	Deer/Moose
General Occurrence	SEE TABLE A1	S,M SEE TABLE A1	SEE TABLE A1	R,C,S,M, JM,V SEE TABLE A1	CN,R,W,SSEE TABLE A1	Deer
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).					
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).					
Game Species	\	\	\	R,S	\	Not hunted.
Furbearers	SEE TABLE A1	\	\	\	CN,R,W,SSEE TABLE A1	\

D.9 Other Protected Species							
State Protected Species	NONE IDENTIFIED IN THE RHODE ISLAND NATURAL HERITAGE PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER).						
Federally Protected Species	NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER).						

SUMMARY AND RECOMMENDATIONS:

SUMMARY:

Well maintained lawn and landscaping.
Center adjacent to bike path and state park.
Center bordered on three sides by successional woodland approximately 20–30 years old.
There is a large cemetary just east of the Center.
The pond in the woodland on the west side of the Center is much smaller than indicated on existing maps. This pond is seasonal, and most of the water comes from storm runoff from the Center parking lots. Some water may also come from runoff to the north, but there is a large rocked drainage between the Center property line and the bike path.

RECOMMENDATIONS:

Plant native fruit–bearing shrubs and low trees in the lawn and along fence.
Erect American robin/house finch/barn swallow/eastern phoebe nesting platforms on Center buildings (8 total).
Erect chickadee/eastern bluebird/house wren/nuthatch nesting boxes in woodlands and along fence (14 total).

RECOMMENDATIONS ARE ONLY SUGGESTIONS AND ARE NOT MEANT TO SERVE AS A MANAGEMENT PLAN. PERMITS MAY BE REQUIRED FOR SOME OF THESE ACTIONS.

FACILITY ID#: RI001 CENTER NAME: Bristol – Quinta – Gamelin USARC ADDRESS: Asylum Road

CITY: Bristol COUNTY: Bristol STATE: RI SURVEYED BY: Jim Duncan – ENSR

COMMAND: 76th SITE CONTACT(S):(Name/Rank/Title) Mr. Douglas DATE OF SURVEY: 20 JUNE 94

Legend:

"SEE TABLE" indicates that a species or species group is expected based on range and habitat requirements. Refer to the indicated table for a list of species.

\ Indicates species or species group is not expected to occur on the USARC because suitable habitat is not present.

1) Subtype

RIVERINE	LACUSTRINE	PALUSTRINE	ESTUARINE	MARINE
Tidal	Limnetic	Emergent = E	Intertidal	Subtidal
Lower perennial	Littoral	Scrub–Shrub = S/S		Intertidal
Upper perennial		Forested = F		
Intermittent		Open Water = OW		
Unknown Perennial				

2) Observed species are listed in Table A1.

3) WATERBIRDS

Ocean/Marine = O/M
Waterfowl = W
Herons = H
Shorebirds = S

4) RAPTORS

Hawks = H
Owls = O
Eagles = E

5) GAMEBIRDS

Grouse = G
Quail = Q
Pheasant = P
Turkey = T
Woodcock = W

6) INSECTIVORES

Shrews = S
Moles = M

7) RODENTS

Rabbits = R
Hares = H
Beaver = B
Chipmunks = C
Squirrels = S
Mice = M
Rats = RS
Voles = V
Jumping mice = JM

8) CARNIVORES

Canids = CN
Bears = B
Raccoon = R
Weasels = W
Skunks = S
Cats = CT

US ARMY RESERVE CENTER – NATURAL RESOURCES SURVEY | SURVEYED BY: Jim Duncan ENSR

FACILITY ID#: RI001 | SURVEY DATE(S): 20 JUNE 94

CENTER NAME: Bristol, Rhode Island – Quinta – Gamelin USARC | WILDLIFE SPECIES REPORTED: None

TABLE A1

WILDLIFE AND VEGETATION SPECIES OBSERVED AND EXPECTED TO OCCUR ON THE BRISTOL, RHODE ISLAND USARC (1994)

WILDLIFE SPECIES OBSERVED

BIRDS	BIRDS	MAMMALS	AMPHIBIANS	REPTILES
American robin	Common crow	Gray squirrel	NONE	NONE
Blue jay	Downy woodpecker	Eastern cottontail		
House wren	Carolina wren			
Northern mockingbird	Black–capped chickadee			
European starling	Yellow warbler			
Common grackle	House finch			
Cedar waxwing	American goldfinch			
Eastern kingbird	Song sparrow			
Gray catbird				

WILDLIFE SPECIES EXPECTED

BIRDS	MAMMALS	MAMMALS	AMPHIBIANS	REPTILES
	Virginia opossum	White–footed mouse	Marbled salamander	Wood turtle
	Common masked shrew	Meadow vole	Spotted salamander	Eastern box turtle
SEE TABLE A5 FOR A LIST OF EXPECTED BIRDS.	Northern short–tailed shrew	Woodland vole	Red–spotted newt	Northern brown snake
	Hairy–tailed mole	House mouse	Redback salamander	Northern redbelly snake
	Eastern mole	Meadow jumping mouse	Eastern spadefoot	Eastern garter snake
	Star–nosed mole	Red fox	Eastern American toad	Northern ringneck snake
	Little brown myotis	Common gray fox	Fowler's toad	Northern black racer
	Big brown bat	Common raccoon	Northern spring peeper	Smooth green snake
	Eastern cottontail	Ermine	Gray treefrog	Black rat snake
	Eastern chipmunk	Long–tailed weasel	Wood frog	Eastern milk snake
	Woodchuck	Striped skunk		
	Eastern gray squirrel	White–tailed deer		
	Southern flying squirrel			

VEGETATION SPECIES OBSERVED

	NATIVE SPECIES			ORNAMENTAL SPECIES	
GRASSES/FORBS	SHRUBS	TREES	TREES	SHRUBS	TREES
Poison ivy	Multiflora rose	Red maple		Common lilac	Austrian pine
Wild strawberry	Viburnum	Flowering dogwood		Sweet mockorange	Moraine locust
European bittersweet	Sumac	Eastern red cedar		Hibiscus spp.	Washington hawthorne
Mullen	Autumn olive	Walnut spp.		Cotoneaster spp.	Crimson king maple
Blackberry	Honeysuckle shrub	Black cherry		Rhododendron spp.	Rocky Mountain juniper
Virginia creeper	Greenbriar	Paper birch		Juniper spp.	
Honeysuckle vine	Wild grape	Black locust		Sand cherry	
		Persimmon		Rug juniper	
		Black oak		Little leaf linden	
		Common apple		Thuja spp.	
		Poplar		Red twig dogwood	
				Pfitzer juniper	
				Spreading cotoneaster	

TABLE A2
FEDERAL AND STATE PROTECTED SPECIES POTENTIALLY OCCURRING ON THE BRISTOL, RHODE ISLAND USARC (1994)

1)PLANTS	Status	Species
	SEE TABLE A3 FOR A LIST OF PROTECTED PLANT SPECIES POTENTIALLY OCCURRING ON THE CENTER.	

2)INVERTEBRATES	Status	Species
	None identified in Natural Diversity Data Base (Natural Heritage Program)	

SOME OF THE 42 STATE AND FEDERAL PROTECTED INVERTEBRATE SPECIES OCCUR IN HABITATS SIMILAR TO THOSE OCCURRING ON THE USARC; A DETAILED ANALYSIS OF THEIR POTENTIAL OCCURRENCE HAS NOT BEEN MADE ".

3)AMPHIBIANS	Status	Species
	SC	*MARBLED SALAMANDER*
	ST	*EASTERN SPADEFOOT*

4)REPTILES	Status	Species
	SI	*WOOD TURTLE*
	SI	*BLACK RAT SNAKE*

5)BIRDS	Status	Species
	SI	*ACADIAN FLYCATCHER*
	SI	*HORNED LARK*
	SC	*ORCHARD ORIOLE*

6)MAMMALS	Status	Species
	NONE	

SI = STATE SPECIES OF INTEREST
SC = STATE SPECIES OF CONCERN
ST = STATE THREATENED SPECIES

TABLE A3
STATE AND FEDERAL PROTECTED PLANT SPECIES POTENTIALLY OCCURRING ON THE BRISTOL, RHODE ISLAND USARC (1994)

STATUS	COMMON NAME	SCIENTIFIC NAME	HABITAT	FLOWERING SEASON
SC	**Rough horsetail**	*Equisetum hyemale*	Dry or moist slopes, thickets, river banks.	5/15 – 10/5
SI	**Triangle grape–fern**	*Botrychium lancelatum*	Woods.	6/14 – 9/17
SI	**Poke mildweed**	*Asclepias exaltata*	Edge of woods, thickets.	6/17 – 7/30
SC	**Purple milkweed**	*Asclepias purpurescens*	Border of fields.	6/22 – 7/31
SC	**Large–leaved aster**	*Aster macrophyllus*	Dry woods.	7/29 – 9/26
SI	**Woodland sunflower**	*Helianthus divaricatus*	Dry thickets.	7/8 – 9/10
SC	**Lion's–foot**	*Prenanthes serpentaria*	Dry open woods, clearings, thickets.	8/16 – 10/9
SI	**Mountain honeysuckle**	*Lonicera dioica*	Dry open woods, thickets.	5/9 – 6/8
SI	**Red–berried elderberry**	*Sambucus racemosa*	Damp woods, hillsides.	5/1 – 6/6
ST	**Wild senna**	*Cassia hebecarpa*	Thickets, fields.	7/20 – 10/23
SI	**Post oak**	*Quercus stellata*	Dry rock woods.	5/1 – 5/30
SC	**Dwarf chestnut oak**	*Quercus prinoides*	Dry sterile fields, dry woods.	5/12 – 6/10
SE	**Climging fumitory**	*Adlumia fungosa*	Moist ledges, rocky woods.	6/14 – 8/8
SC	**Pale corydalis**	*Corydalis sempervirens*	Ledges, dry woods, clearings.	6/1 – 9/9
SI	**Smooth gooseberry**	*Ribes hirtellum*	Woods, swamps.	5/3 – 6/15
SI	**Weak rush**	*Juncus debilis*	Ditches, pools.	6/30 – 9/16
SI	**Large coralroot**	*Coralborhiza maculata*	Dry woods.	7/5 – 8/28
SE	**Green adder's mouth**	*Malaxis unifolia*	Moist or dry woods.	7/23 – 8/9
SC	**Water–plantain spearwort**	*Ranunculus ambigens*	Mud holes, ponds, ditches, brooks.	6/9 – 7/31
SI	**Slippery elm**	*Ulmus rubra*	Rich woods, along streams.	5/12 – 5/31

SE = STATE ENDANGERED
SC = STATE SPECIES OF CONCERN
SI = STATE SPECIES OF INTEREST
FC2 = FEDERAL CANDIDATE CATEGORY 2
ST = STATE THREATENED

RANGE:

STATE OF RHODE ISLAND, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT. DIVISION OF PLANNING AND DEVELOPMENT 1995.
"CONSIDERED TO BE ENTIRE STATE BASED ON LIMITED AVAILBLE INFORMATION".

HABITATS FROM:

SEYMOUR 1993.

TABLE A4
AMPHIBIANS AND REPTILES WHOSE RANGES INCLUDE THE BRISTOL, RHODE ISLAND USARC (1994)

MUDPUPPY	*NECTURUS MACULOSUS MACULOSUS*
MARBLED SALAMANDER	*AMBYSTOMA OPACUM*
JEFFERSON SALAMANDER	*AMBYSTOMA JEFFERSONIANUM*
SPOTTED SALAMANDER	*AMBYSTOMA MACULATUM*
RED–SPOTTED NEWT	*NOTOPHTHALMUS VIRIDESCENS VIRIDESCENS*
NORTHERN DUSKY SALAMANDER	*DESMOGNATHUS FUSCUS FUSCUS*
REDBACK SALAMANDER	*PLETHODON CINEREUS*
FOUR–TOED SALAMANDER	*HEMIDACTYLIUM SCUTATUM*
NORTHERN SPRING SALAMANDER *	*GYRINOPHILUS PORPHYRITICUS PORPHYRITICUS*
NORTHERN TWO–LINED SALAMANDER	*EURYCEA BISLINEATA*
EASTERN SPADEFOOT	*SCAPHIOPUS HOLBROOKII HOLBROOKII*
EASTERN AMERICAN TOAD	*BUFO AMERICANUS AMERICANUS*
FOWLER'S TOAD	*BUFO WOODHOUSII FOWLERI*
NORTHERN SPRING PEEPER	*PSEUDACRIS CRUCIFER CRUCIFER*
GRAY TREEFROG	*HYLA VERSICOLOR*
BULLFROG	*RANA CATESBEIANA*
GREEN FROG	*RANA CLAMITANS MELANOTA*
WOOD FROG	*RANA SYLVATICA*
NORTHERN LEOPARD FROG *	*RANA PIPIENS*
PICKEREL FROG	*RANA PALUSTRIS*
COMMON SNAPPING TURTLE	*CHELYDRA SERPENTINA SERPENTINA*
COMMON MUSK TURTLE	*STERNOTHERUS ODORATUS*
SPOTTED TURTLE	*CLEMMYS GUTTATA*
WOOD TURTLE	*CLEMMYS INSCULPTA*
EASTERN BOX TURTLE	*TERRAPENE CAROLINA CAROLINA*
EASTERN PAINTED TURTLE	*CHRYSEMYS PICTA PICTA*
NORTHERN DIAMONDBACK TERRAPIN	*MALACLEMYS TERRAPIN TERRAPIN*
NORTHERN WATER SNAKE	*NERODIA SIPEDON SIPEDON*
NORTHERN BROWN SNAKE	*STORERIA DEKAYI DEKAYI*
NORTHERN REDBELLY SNAKE	*STORERIA OCCIPITOMACULATA OCCIPITOMACULATA*
EASTERN GARTER SNAKE	*THAMNOPHIS SIRTALIS SIRTALIS*
EASTERN RIBBON SNAKE	*THAMNOPHIS SAURITUS SAURITUS*
EASTERN HOGNOSE SNAKE	*HETERODON PLATIRHINOS*
NORTHERN RINGNECK SNAKE	*DIADOPHIS PUNCTATUS EDWARDSII*
NORTHERN BLACK RACER	*COLUBER CONSTRICTOR CONSTRICTOR*
SMOOTH GREEN SNAKE	*OPHEODRYS VERNALIS*
BLACK RAT SNAKE	*ELAPHE OBSOLETA OBSOLETA*
EASTERN MILK SNAKE	*LAMPROPELTIS TRIANGULUM TRIANGULUM*
TIMBER RATTLESNAKE *	*CROTALUS HORRIDUS*

*** Reserve Center is near the edge of the species geographic range.**

NOMENCLATURE FROM:

SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES 1990.

RANGES FROM:

1) STATE OF RHODE ISLAND, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT 1995.
2) DEGRAAF AND RUDIS 1983a.
3) DEGRAAF AND RUDIS 1983b.

TABLE A5
BREEDING BIRDS WHOSE RANGES INCLUDE THE BRISTOL, RHODE ISLAND USARC INCLUDING POTENTIAL NESTING SPECIES (1994)

Double–crested cormorant	*Phalacrocorax auritus*
American bittern	*Botaurus lentiginosus*
Least bittern	*Ixobrychus exilis*
Great egret	*Casmerodius albus*
Snowy egret	*Egretta thula*
Little blue heron	*Egretta caerulea*
Cattle egret	*Babulcus ibis*
Green–backed heron	*Butorides striatus*
Black–crowned night heron	*Nycticorax nycticorax*
Glossy ibis	*Plegadis falcinellus*
Mute swan	*Cygnus olor*
Canada goose	*Branta canadensis*
Wood duck	*Aix sponsa*
American black duck	*Anas rubripes*
Mallard	*Anas platyrhynchos*
Osprey	*Pandion haliaetus*
Sharp–shinned hawk	*Accipiter striatus*
Broad–winged hawk	*Buteo platypterus*
Red–tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Ring–necked pheasant	*Phasianus colchicus*
Ruffed grouse	*Bonasa umbellus*
Northern bobwhite	*Colinus virginianus*
Clapper rail	*Rallus longirostris*
King rail	*Rallus elegans*
Virginia rail	*Rallus limicola*
Sora	*Porzana carolina*
Killdeer	*Charadrius vociferus*
American oystercatcher	*Haematopus palliatus*
Willet	*Catoptrophorus semipalmatus*
Spotted sandpiper	*Actitis macularia*
Upland sandpiper	*Bartramia longicauda*
American woodcock	*Scolopax minor*
Herring gull	*Larus argentatus*
Great black–backed gull	*Larus marinus*
Common tern	*Sterna hirundo*
Least tern	*Sterna antillarum*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Black–billed cuckoo	*Coccyzus erythropthalmus*
Yellow–billed cuckoo	*Coccyzus americanus*
Eastern screech owl	*Otus asio*
Great horned owl	*Bubo virginianus*
Barred owl	*Strix varia*
Whip–poor–will	*Caprimulgus vociferus*
Chimney swift	*Chaetura pelagica*
Ruby–throated hummingbird	*Archilochus colubris*
Belted kingfisher	*Ceryle alcyon*
Red–bellied woodpecker	*Melanerpes carolinus*
Downy woodpecker	*Picoides pubescens*
Hairy woodpecker	*Picoides villosus*

TABLE A5 cont.
BREEDING BIRDS WHOSE RANGES INCLUDE THE BRISTOL, RHODE ISLAND USARC INCLUDING POTENTIAL NESTING SPECIES (1994)

Northern flicker	*Colaptes auratus*
Eastern wood–pewee	*Contopus virens*
Acadian flycatcher	*Empidonax virescens*
Willow flycatcher	*Empidonax trailli*
Least flycatcher	*Empidonax minimus*
Eastern phoebe	*Sayornis phoebe*
Great–crested flycatcher	*Myiarchus crinitus*
Eastern kingbird	*Tyrannus tyrannus*
Horned lark	*Eremophila alpestris*
Purple martin	*Progne subis*
Tree swallow	*Tachycineta bicolor*
Northern rough–winged swallow	*Stelgidopteryx serripennis*
Bank swallow	*Riparia riparia*
Barn swallow	*Hirundo rustica*
Blue jay	*Cyanocitta cristata*
American crow	*Corvus brachyrhynchos*
Black–capped chickadee	*Parus atricapillus*
Tufted titmouse	*Parus bicolor*
White–breasted nuthatch	*Sitta carolinensis*
Carolina wren	*Thryothorus ludovicianus*
House wren	*Troglodytes aedon*
Marsh wren	*Cistothorus palustris*
Blue–gray gnatcatcher	*Polioptila caerulea*
Eastern bluebird	*Sialia sialis*
Veery	*Catharus fuscescens*
Wood thrush	*Hylocichla mustelina*
American robin	*Turdus migratorius*
Gray catbird	*Dumetella carolinensis*
Northern mockingbird	*Mimus polyglottos*
Brown thrasher	*Toxostoma rufum*
Cedar waxwing	*Bombycilla cedrorum*
European starling	*Sturnus vulgaris*
White–eyed vireo	*Vireo griseus*
Yellow–throated vireo	*Vireo flavifrons*
Warbling vireo	*Vireo gilvus*
Red–eyed vireo	*Vireo olivaceus*
Blue–winged warbler	*Vermivora pinus*
Yellow warbler	*Dendroica petechia*
Chestnut–sided warbler	*Dendroica pensylvanica*
Black–throated green warbler	*Dendroica virens*
Pine warbler	*Dendroica pinus*
Prairie warbler	*Dendroica discolor*
Black–and–white warbler	*Mniotilta varia*
American redstart	*Setophaga ruticilla*
Worm–eating warbler	*Helmitheros vermivorus*
Ovenbird	*Seiurus aurocapillus*
Louisiana waterthrush	*Seiurus motacilla*
Common yellowthroat	*Geothlypis trichas*
Hooded warbler	*Wilsonia citrina*
Canada warbler	*Wilsonia canadensis*
Scarlet tanager	*Piranga olivacea*

TABLE A5 cont.
BREEDING BIRDS WHOSE RANGES INCLUDE THE BRISTOL, RHODE ISLAND USARC INCLUDING POTENTIAL NESTING SPECIES (1994)

Northern cardinal	*Cardinalis cardinalis*
Rose–breasted grosbeak	*Pheucticus ludovicianus*
Indigo bunting	*Passerina cyanea*
Rufous–sided towhee	*Pipilo erythrophthalmus*
Chipping sparrow	*Spizella passerina*
Field sparrow	*Spizella pusilla*
Savannah sparrow	*Passerculus sandwichensis*
Grasshopper sparrow	*Ammodramus savannarum*
Sharp–tailed sparrow	*Ammodramus caudacutus*
Seaside sparrow	*Ammodramus maritimus*
Song sparrow	*Melospiza melodia*
Swamp sparrow	*Melospiza georgiana*
Bobolink	*Dolichonyx oryzivorus*
Red–winged blackbird	*Agelaius phoeniceus*
Eastern meadowlark	*Sturnella magna*
Common grackle	*Quiscalus quiscula*
Brown–headed cowbird	*Molothrus ater*
Orchard oriole	*Icterus spurius*
Northern oriole	*Icterus galbula*
Purple finch	*Carpodacus purpureus*
House finch	*Carpodacus mexicanus*
American goldfinch	*Carduelis tristis*
House sparrow	*Passer domesticus*

DENOTES SPECIES POTENTIALLY NESTING ON THE USARC BECAUSE SUITABLE HABITAT IS PRESENT.

NOMENCLATURE FROM:
AMERICAN BIRDING ASSOCIATION 1990.

RANGES FROM:
1) DEGRAAF AND RUDIS 1983b.
2) STATE OF RHODE ISLAND, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT 1988?

TABLE A6
MAMMALS WHOSE RANGES INCLUDE THE BRISTOL,RHODE ISLAND USARC (1994)

VIRGINIA OPOSSUM	*DIDELPHIS VIRGINIANA*
COMMON MASKED SHREW	*SOREX CINEREUS*
NORTHERN SHORT–TAILED SHREW	*BLARINA BREVICAUDA*
HAIRY–TAILED MOLE *	*PARASCALOPS BREWERI*
EASTERN MOLE	*SCALOPUS AQUATICUS*
STAR–NOSED MOLE	*CONDYLURA CRISTATA*
LITTLE BROWN MYOTIS	*MYOTIS LUCIFUGUS*
KEEN'S MYOTIS	*MYOTIS KEENII SEPTENTRIONALIS*
SILVER–HAIRED BAT	*LASIONYCTERIS NOCTIVAGANS*
EASTERN PIPISTRELLE	*PIPISTRELLUS SUBFLAVUS OBSCURUS*
BIG BROWN BAT	*EPTESICUS FUSCUS*
EASTERN RED BAT	*LASIURUS BOREALIS*
HOARY BAT	*LASIURUS CINEREUS*
EASTERN COTTONTAIL	*SYLVILAGUS FLORIDANUS*
NEW ENGLAND COTTONTAIL	*SYLVILAGUS TRASITIONALIS*
SNOWSHOE HARE	*LEPUS AMERICANUS*
EASTERN CHIPMUNK	*TAMIAS STRIATUS*
WOODCHUCK	*MARMOTA MONAX*
EASTERN GRAY SQUIRREL	*SCIURUS CAROLINENSIS PENNSYLVANICUS*
RED SQUIRREL	*TAMIASCIURUS HUDSONICUS*
SOUTHERN FLYING SQUIRREL	*GLAUCOMYS VOLANS*
AMERICAN BEAVER	*CASTOR CANADENSIS*
WHITE–FOOTED MOUSE	*PEROMYSCUS LEUCOPUS*
SOUTHERN RED–BACKED VOLE	*CLETHRIONOMYS GAPPERI*
MEADOW VOLE	*MICROTUS PENNSYLVANICUS*
WOODLAND VOLE	*MICROTUS PINETORUM SCALOPSOIDES*
COMMON MUSKRAT	*ONDATRA ZIBETHICUS*
SOUTHERN BOG LEMMING	*SYNAPTOMYS COOPERI*
BLACK RAT	*RATTUS RATTUS*
NORWAY RAT	*RATTUS NORVEGICUS*
HOUSE MOUSE	*MUS MUSCULUS*
MEADOW JUMPING MOUSE	*ZAPUS HUDSONIUS*
RED FOX	*VULPES VULPES*
COMMON GRAY FOX	*UROCYON CINEREOARGENTEUS*
COMMON RACCOON	*PROCYON LOTOR*
ERMINE	*MUSTELA ERMINEA CICOGNANII*
LONG–TAILED WEASEL	*MUSTELA FRENATA*
STRIPED SKUNK	*MEPHITIS MEPHITIS*
MINK	*MUSTELA VISON*
NORTHERN RIVER OTTER	*LUTRA CANADENSIS*
BOBCAT	*LYNX RUFUS*
WHITE–TAILED DEER	*ODOCOILEUS VIRGINIANUS BOREALIS*

*** Reserve Center is near the edge of the species geographic range.**

NOMENCLATURE FROM:
JONES et.al. 1992.

RANGES FROM:
1) CRONAN AND BROOKS 1968.
2) DEGRAAF AND RUDIS 1983b.
3) GODIN 1977.

FACILITY ID#: RI001
CENTER NAME: Bristol, Rhode Island – Quinta – Gamelin USARC

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STATE PROTECTED SPECIES INFORMATION

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Environmental Management
DIVISION OF PLANNING AND DEVELOPMENT
83 Park Street
Providence, R.I. 02903 - 1037
(401) 277-2776
Fax Number: 277-2069

10 February 1994

Jim Duncan
ENSR Consulting and Engineering
35 Nagog Park
Acton, MA 01720

RE: 7 Army Reserve Centers
Statewide, RI

Dear Mr. Duncan,

Thank you for contacting the Rhode Island Natural Heritage Program for information regarding rare species and ecologically significant natural communities in the vicinities of the 7 Army Reserve Centers throughout Rhode Island.

At this time, we are not aware of any rare plants or animals or ecologically significant natural communities in these areas.

As our inventory is ongoing, more information on these areas may become available in the future.

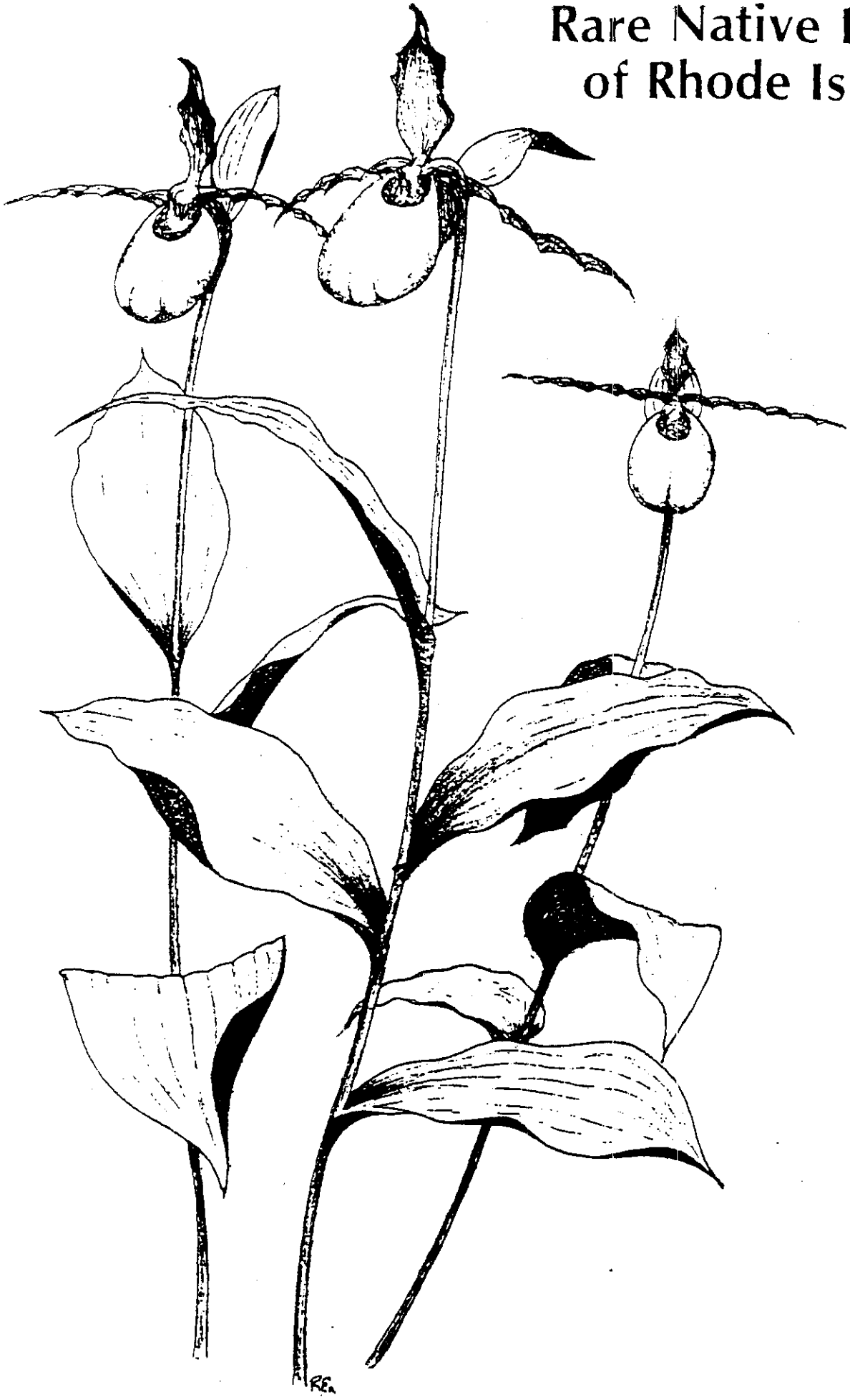
Sincerely,

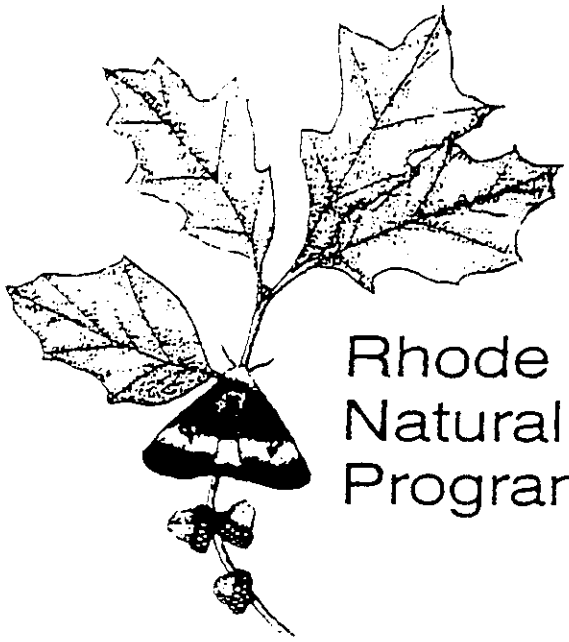
Joanne Michaud

Joanne Michaud
Data Manager/Environmental Planner
Natural Heritage Program

JM/jm

Rare Native Plants of Rhode Island





Rhode Island Natural Heritage Program

Cover: The Large Yellow Lady's-slipper (Cypripedium pubescens) is currently found in Rhode Island at 4 locations in Providence County. Habitat for this showy orchid is generally rich, moist woodlands where other rare plants may also be found. Subject to habitat depletion by land development and collection of individual plants this species is listed as State Threatened in Rhode Island.

RARE NATIVE PLANTS OF RHODE ISLAND - April, 1995

Prepared by

Richard W. Enser
Rhode Island Natural Heritage Program
Rhode Island Department of Environmental Management
Providence, Rhode Island

The flora of Rhode Island includes roughly 1950 plants of which approximately 1500 (77%) are considered to be native. The following list identifies those members of the native flora which are the rarest in Rhode Island and most in need of conservation. All plant taxa listed herein are currently being tracked by the Rhode Island Natural Heritage Program through a comprehensive mapping and computerized database. Information regarding the location and status of rare elements, including plants, animals and natural communities, is used to establish priorities for land preservation and to provide guidance within the environmental review process.

The Rhode Island Natural Heritage Program was established in 1978. During the first year of operation an initial listing of rare plants was derived from two previously published lists. These were "Endangered Plants of Rhode Island", by Dr. Irene Stuckey, and "Rare and Endangered Vascular Plant Species in Rhode Island", by Dr. George L. Church and Richard L. Champlin. The latter publication was the Rhode Island contribution to a regional assessment of rare plants prepared by the New England Botanical Club in cooperation with the U.S. Fish and Wildlife Service.

These initial listings were based primarily on the considerable field experience of the authors, along with some cursory examination of specimens housed at several regional herbaria. Since 1978, the Natural Heritage Program has tapped many sources, particularly additional herbaria and published reports. The author, along with several other professional and amateur botanists, has also spent considerable time verifying the locations and identities of rare plants throughout the state. This combined effort has made the Natural Heritage Program's database the largest repository of rare plant information in Rhode Island.

The rare plant list has been amended annually to reflect the most up-to-date knowledge of plant distribution, status, and taxonomy. Although the number of plants on the rare list has remained relatively constant, certain species have been deleted when found to be more common than originally thought, while others have been added following similar status assessment, or when newly discovered in Rhode Island. (These may be new colonizers or may have been overlooked in the past.) This edition of the "Rare Native Plants of Rhode Island" includes 296 plants, or approximately 19% of the native state flora.

ABOUT THIS LIST

The list is arranged alphabetically by botanical family, genus and species. Trinomials are used to describe certain subspecies and varieties.

Nomenclature

The primary taxonomic authority for scientific names is:

Gleason, Henry A. and Arthur Cronquist. 1991. Manual of vascular plants of Northeastern United States and adjacent Canada, 2nd Edition. New York Botanical Garden. 910p.

Two additional taxonomic treatments have been referenced for the following:

1) Ferns, Fern Allies, and Gymnosperms:

Flora of North America Editorial Committee. 1993. Flora of North America, Volume 2: Pteridophytes and Gymnosperms. Oxford Univ. Press. 320p.

The Flora of North America is a synoptic floristic account of the plants of North America north of Mexico. It is intended to serve both as a means of identifying plants within the region and as a systematic conspectus of the North American flora. Each update of the Rhode Island rare plant list will follow the taxonomic treatment of the Flora of North America as each volume is published.

2) Orchids:

Luer, C.A. 1975. The native orchids of the United States and Canada, excluding Florida. New York Botanical Garden. 361p.

Appropriate synonymy is included in cases where names have changed since the publication of the 8th Edition of Gray's Manual of Botany (Fernald, 1950), or where names differ from more recently published authorities.

Extant Populations

The number refers to extant populations known since 1978. (There are a few instances of populations being destroyed since this date - these have not been included in the count.)

The number of distinct populations of some species, especially aquatics, is often difficult to determine. Population numbers for these species are based on the assumption that single occurrences within the same reach of a river, or separate portions of a pond, lake, or other contiguous wetland system are considered one population.

Status

The status of each species is designated by letter codes as defined below:

(FE) Federally Endangered (2 species currently listed)

(FT) Federally Threatened (No species currently listed)

(SE) State Endangered Native taxa in imminent danger of extirpation from Rhode Island. These taxa meet one or more of the following criteria:

1. A taxon currently under review for listing by the U.S. Fish & Wildlife Service as Federally endangered or threatened. Those identified as C2 (Category 2) are taxa for which information indicates that proposing to list under the Federal Endangered Species Act is possibly appropriate, but for which sufficient data on biological vulnerability and threat are not currently available to support proposed rules.

2. A taxon with 1 or 2 known or estimated total populations in the state.

3. A taxon apparently globally rare or threatened, estimated to occur at approximately 100 or fewer sites range-wide.

Plants listed as State Endangered are protected under the provisions of the Rhode Island State Endangered Species Act, Title 20 of the General Laws of the State of Rhode Island. This law states, in part (20-37-3):

"No person shall buy, sell, offer for sale, store, transport, import, export, or otherwise traffic in any animal or plant or any part of any animal or plant whether living or dead, processed, manufactured, preserved or raw (if) such animal or plant has been declared to be an endangered species by either the United States secretaries of the Interior or Commerce or the Director of the Rhode Island Department of Environmental Management."

(ST) State Threatened Native taxa which are likely to become State Endangered in the future if current trends in habitat loss or other detrimental factors remain unchanged. These taxa meet one or more of the following criteria:

1. A taxon with 3 - 5 known or estimated populations.

2. A taxon with more than 5 known or estimated populations in the state, but especially vulnerable to habitat loss.

(SI) State Interest — Native taxa not considered to be State Endangered or Threatened at the present time, occurring at 6 - 10 sites in the state.

(C) Concern — Native taxa which do not qualify under other categories but are additionally listed due to various factors of rarity and/or vulnerability.

(SH) State Historical — Native taxa which have been documented for the state during the last 150 years but for which no extant populations are known. The year of documented occurrence is included.

Note on Status Designation:

For most listed plants the definitions outlined above have been adhered to when assigning status. In some cases, especially for those species which have not received intensive field inventory, the Concern category is assigned even if only 1-2 populations are known to be extant. These species are targeted for additional inventory and may be assigned to other categories when their actual status in Rhode Island has been clarified. Taxa included in this category are designated with an asterisk (*).

FUTURE REVISIONS

The listing of rare species is an ongoing process requiring annual revisions to reflect the best scientific information available concerning the circumstances of rarity, as well as our increased knowledge of the native flora. Submission of additional data on species currently listed, or on other species which may warrant listing, is encouraged. Information should be sent to:

Rhode Island Natural Heritage Program
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Species	Extant Pop	Status
Pteridophytes		
Aspleniaceae (Spleenwort Family)		
Asplenium montanum Willd. (Mountain Spleenwort)	1	SE
Asplenium rhizophyllum L. [=Camptosorus rhizophyllus (L.) Link] (Walking Fern)	1	SE
Asplenium trichomanes L. [includes ssp. trichomanes and quadrivalens] (Maidenhair Spleenwort)	9	SI
Equisetaceae (Horsetail Family)		
Equisetum fluviatile L. (Water Horsetail)	3	SI
Equisetum hyemale L. ssp. affine (Engelm.) Calder & R. L. Taylor (Rough Horsetail)	7	C
Equisetum sylvaticum L. (Woodland Horsetail)	10	C
Dryopteridaceae (Wood Fern Family)		
Gymnocarpium dryopteris (L.) Newman [=Dryopteris disjuncta (Ledeb.) Morton] (Oak Fern)	3	ST
Matteuccia struthiopteris (L.) Todaro var. pensylvanica (Willd.) C.V. Morton [=Pteretis pensylvanica (Willd.) Fern.] (Ostrich Fern)	5	C
Woodsia ilvensis (L.) R. Brown (Rusty Woodsia)	0 (1977)	SH
Isoetaceae (Quillwort Family)		
Isoetes engelmannii A. Braun (Engelmann's Quillwort)	4	SI
Isoetes echinospora Dur. [=I. muricata Dur.; I. echinospora var. muricata (Dur.) Engelm.] (Pointed Quillwort)	2	SI

Species	Extant Pop	Status
Isoetes riparia Engelm. ex A. Braun (River Quillwort)	4	SI
Lycopodiaceae (Clubmoss Family)		
Lycopodiella alopecuroides (L.) Cranfill [=Lycopodium alopecuroides L.] (Foxtail Clubmoss)	1	SE
Lycopodium annotinum L. (Stiff Clubmoss)	1	SE
Ophioglossaceae (Adder's-tongue Family)		
Botrychium lanceolatum (Gmel.) Ang. var. angustisegmentum Pease & Moore (Triangle Grape-fern)	2	SI
Botrychium matricariifolium (Doll) A. Braun ex Koch (Daiseyleaf Grape-fern)	4	SI
Botrychium simplex E. Hitchcock (Dwarf Grape-fern)	4	SI
Ophioglossum pusillum Raf. [= O. vulgatum L. var. pseudopodum (S.F. Blake) Farw.] (Adder's-tongue)	1	SE
Pteridaceae (Maidenhair Fern Family)		
Pellaea atropurpurea (L.) Link (Purple Cliff-brake)	1	SE
Schizaeaceae (Curly-grass Fern Family)		
Lygodium palmatum (Bernh.) Swartz. (Climbing Fern)	6	SI
Thelypteridaceae (Marsh Fern Family)		
Phegopteris connectilis (Mich.) Watt [=Thelypteris phegopteris (L.) Slosson; Dryopteris phegopteris (L.) Christens.] (Narrow Beech Fern)	2	ST

Species	Extant Pop	Status
Gymnosperms		
Taxaceae (Yew Family)		
Taxus canadensis Marshall (Ground Hemlock)	3	SI
Pinaceae (Pine Family)		
Larix laricina (DuRoi) K. Koch (American Larch)	3	ST
Picea mariana (Miller) BSP. (Black Spruce)	9	C
Angiosperms		
Aceraceae (Maple Family)		
Acer pensylvanicum L. (Striped Maple)	4	C
Acer spicatum Lam. (Mountain Maple)	1	ST
Alismataceae (Water-Plantain Family)		
Sagittaria graminea Michx. (Grass-leaved Arrowhead)	4	SI
Sagittaria subulata (L.) Buchenau. [includes var. gracillima; = S. stagnorum Small] (River Arrowhead)	0 (1895)	SH
Sagittaria teres S. Watson (Slender Arrowhead)	3	SE
Amaranthaceae (Amaranths)		
Amaranthus pumilus Raf. (Seabeach Amaranth)	0 (1897)	FT/SH

Species	Extant Pop	Status
Apiaceae (Parsley Family)		
Angelica atropurpurea L. (Large Angelica)	1	SE
Angelica lucida L. (Seaside Angelica)	1	SE
Cryptotaenia canadensis (L.) DC. (Honewort)	5	C
Hydrocotyle verticillata Thunb. (Saltpond Pennywort)	0 (1895)	SH
Ligusticum scothicum L. (Scotch Lovage)	10	C
Osmorhiza longistylis (Torr.) DC. (Anise-root)	1	ST
Ptilimnium capillaceum (Michx.) Raf. (Mock Bishop's Weed)	7	C
Taenidia integerrima (L.) Drude (Yellow Pimpernel)	0 (1886)	SH
Zizia aptera (Gray) Fern. (Heart-leaved Golden Alexanders)	0 (1920)	SH
Zizia aurea (L.) W.D.J.Koch (Golden Alexanders)	10	C
Araceae (Arum Family)		
Orontium aquaticum L. (Golden Club)	1	SE
Araliaceae (Ginseng Family)		
Aralia racemosa L. (Spikenard)	5	SI
Panax quinquefolium L. (American Ginseng)	1	SE

Species	Extant Pop	Status
Aristolochiaceae (Birthwort Family)		
Asarum canadense L. (Wild Ginger)	1*	C
Asclepiadaceae (Milkweed Family)		
Asclepias amplexicaulis J.E. Smith (Blunt-leaved Milkweed)	7	C
Asclepias exaltata L. (Poke Milkweed)	4	SI
Asclepias purpurescens L. (Purple Milkweed)	1*	C
Asclepias quadrifolia Jacq. (Four-leaved Milkweed)	2	ST
Asclepias tuberosa L. (Butterfly Milkweed)	8	C
Asclepias verticillata L. (Whorled Milkweed)	4	SI
Asteraceae (Aster Family)		
Artemisia campestris ssp. caudata (Michx.) Hall & Clements [=A. caudata Michx.] (Tall Wormwood)	3	C
Aster concolor L. (Eastern Silvery Aster)	0 (1925)	SH
Aster infirmus Michx. (Cornel-leaved Aster)	0 (1965)	SH
Aster laevis L. (Smooth Blue Aster)	4	C
Aster macrophyllus L. (Large-leaved Aster)	5	C
Bidens connata Muhl. (Swamp Beggar's-ticks)	2	SI

Species	Extant Pop	Status
Bidens coronata (L.) Britt. (Tickseed Sunflower)	3	SI
Chrysopsis falcata (Pursh) Elliott (Sickle-leaved Golden Aster)	8	C
Chrysopsis mariana (L.) Ell. (Maryland Golden Aster)	3	ST
Coreopsis rosea Nutt. (Pink Tickseed)	7	SI
Eupatorium aromaticum L. (Snakeroot)	0 (1979)	SH
Eupatorium leucolepis (DC.) T.& G. var. novae-angliae Fern. (New England Boneset)	5	SE/C2
Gnaphalium purpureum L. (Purple Cudweed)	0 (1913)	SH
Helianthus divaricatus L. (Woodland Sunflower)	2	SI
Liatris scariosa (L.) Willd. var. novae-angliae Lunell [=L. borealis Nutt.; L. novae-angliae] (Northern Blazing Star)	4	SE/C2
Prenanthes serpentaria Pursh (Lion's-foot)	1*	C
Rudbeckia laciniata L. (Green-headed Coneflower)	1	ST
Sclerolepis uniflora (Walter) BSP (Sclerolepis)	1	SE
Solidago elliottii Torr. & Gray (Elliott's Goldenrod)	2	ST
Solidago flexicaulis L. (Zigzag Goldenrod)	1	ST
Solidago rigida L. (Stiff-leaf Goldenrod)	0 (1921)	SH

Species	Extant Pop	Status
Berberidaceae (Barberry Family)		
Caulophyllum thalictroides (L.) Michx. (Blue Cohosh)	2	ST
Boraginaceae (Borage Family)		
Onosmodium virginianum (L.) A.DC. (False Gromwell)	0 (1886)	SH
Brassicaceae (Mustard Family)		
Cardamine longii Fern. (Long's Bitter Cress)	1	SE
Draba reptans (Lam.) Fern. (Carolina Whitlow-Grass)	0 (1902)	SH
Campanulaceae (Bluebell Family)		
Lobelia dortmanna L. (Water Lobelia)	9	C
Caprifoliaceae (Honeysuckle Family)		
Linnaea borealis L. (Twinflower)	0 (1930)	SH
Lonicera dioica L. (Mountain Honeysuckle)	3	SI
Lonicera caerulea L. [=L. villosa (Michx.) Roemer & Schultes] (Mountain Fly-Honeysuckle)	3	SI
Sambucus racemosa L. var. pubens (Michx.) Koehne [=S. pubens Michx.] (Red-berried Elderberry)	1	SI
Triosteum aurantiacum E. Bickn. (Wild Coffee)	5	SI
Triosteum perfoliatum L. (Feverwort)	4	SI

Species	Extant Pop	Status
Viburnum alnifolium Marshall (Hobblebush)	5	C
Viburnum nudum L. (Swamp Haw)	1	ST
Caryophyllaceae (Pink Family)		
Arenaria caroliniana Walter [=Minuartia caroliniana] (Pine Barren Sandwort)	0 (1912)	SH
Arenaria groenlandica (Retz.) Sprengel var. glabra (Michx.) Fern. [=Minuartia groenlandica var. glabra] (Smooth Sandwort)	2	SE
Arenaria stricta Michx. [=Minuartia stricta] (Rock Sandwort)	2	SE
Honckenya peploides (L.) Ehrh. var. robusta (Fern.) House [=Arenaria peploides L. var. robusta Fern.] (Seabeach Sandwort)	6	C
Spergularia canadensis (Pers.) D.Don. (Northern Sand-Spurrey)	2	SI
Chenopodiaceae (Goosefoot Family)		
Atriplex glabriuscula Edmondston (Smooth Orache)	2	SI
Chenopodium leptophyllum Nutt. (Goosefoot)	2	SI
Cistaceae (Rock-rose Family)		
Helianthemum dumosum (E. Bickn.) Fern. (Bushy Rockrose)	6	SE/C2
Helianthemum propinquum E. Bickn. (Low Rockrose)	4	SI
Hudsonia ericoides L. (Golden Heather)	4	SI

Species	Extant Pop	Status
Clusiaceae (St. John's-wort Family)		
Hypericum adpressum Barton. (Creeping St. John's-wort)	4	ST/C2
Cornaceae (Dogwood Family)		
Cornus rugosa Lam. (Round-leaved Dogwood)	4	SI
Cyperaceae (Sedge Family)		
Carex alata Torr. (Winged Sedge)	1*	C
Carex albicans Willd. [=C. artitecta Mackenzie] (Covered Sedge)	2*	C
Carex buxbaumii Wahl. (Buxbaum's Sedge)	1*	C
Carex collinsii Nutt. (Collins' Sedge)	1	SE
Carex cumulata (L. Bailey) Mackenzie (Piled Up Sedge)	1*	C
Carex exilis Dewey (Bog Sedge)	3	SI
Carex limosa L. (Mud Sedge)	0 (1892)	SH
Carex pedunculata Muhl. (Long-stalked Sedge)	2	ST
Carex polymorpha Muhl. (Variable Sedge)	1	SE/C2
Carex schweinitzii Dewey (Schweinitz's Sedge)	0 (1895)	SH
Carex sparganioides Muhl. (Burreed-like Sedge)	1*	ST

Species	Extant Pop	Status
Carex sterilis Willd. (Sterile Sedge)	0 (1878)	SH
Carex striata Michx. var. brevis L. Bailey [=C. walteriana] (Walter's Sedge)	1	SE
Cyperus squarrosus L. [=C. inflexus Muhl.; C. aristatus Rottb.] (Awned Umbrella-Sedge)	0 (1914)	SH
Eleocharis equisetoides (Ell.) Torr. (Horsetail Spike-rush)	8	SI
Eleocharis melanocarpa Torr. (Black-fruited Spike-rush)	1	SE
Eleocharis rostellata (Torr.) Torr. (Small-beaked Spike-rush)	2	SI
Eleocharis tricostata Torr. (Three-angled Spike-rush)	0 (1935)	SH
Eriophorum gracile W.D.J. Koch (Slender Cotton-grass)	2	ST
Eriophorum vaginatum L. var. spissum (Fern.) B. Boivin. [=E. spissum Fern.] (Hare's Tail)	0 (1904)	SH
Eriophorum viridicarinatum (Engelm.) Fern. (Bog Cotton-grass)	3	SI
Fuirena pumila (Torr.) Sprengel (Umbrella Grass)	2	SE
Hemicarpha micrantha (Vahl) Britton (Tiny-flowered Sedge)	0 (1892)	SH
Rhynchospora inundata (Oakes) Fern. (Inundated Horned Rush)	4	SE
Rhynchospora macrostachya Torr. (Tall Beaked Rush)	5	ST
Rhynchospora scirpoides (Vahl) Griseb. [=Psilocarya scirpoides Torr.] (Long-beaked Bald Rush)	2	SE
Rhynchospora torreyana A. Gray (Torrey's Beaked Rush)	2	SE

Species	Extant Pop	Status
Scirpus etuberculatus (Steudel) Kuntze (Swamp Bulrush)	1	SE
Scirpus hudsonianus (Michx.) Fern. [=Eriophorum alpinum] (Northern Cotton-grass)	0 (1907)	SH
Scirpus longii Fern. (Long's Bulrush)	1	SE/C2
Scirpus maritimus L. [=S. maritimus var. fernaldii (Bickn.) Beetle] (Saltmarsh Bulrush)	4	SI
Scirpus smithii A. Gray (Smith's Bulrush)	3	ST
Scirpus torreyi Olney (Torrey's Bulrush)	3	SI
Scleria pauciflora Muhl. (Carolina-whipgrass)	3	ST
Scleria reticularis Michx. (Reticulated Nut-rush)	3	ST
Scleria triglomerata Michx. (Whipgrass)	2	ST
Droseraceae (Sundew Family)		
Drosera filiformis Raf. (Thread-leaved Sundew)	1	SE
Elatinaceae (Waterwort Famnily)		
Elatine triandra Schkuhr. var. americana (Pursh) Fassett [= E. americana (Pursh) Arn.] (American Waterwort)	2	SI

Species	Extant Pop	Status
Ericaceae (Heath Family)		
Andromeda glaucophylla Link (Bog Rosemary)	1	SE
Gaultheria hispidula (L.) Muhl. (Creeping Snowberry)	3	SI
Gaylussacia dumosa (Andr.) Torr. & Gray var. bigeloviana Fern. (Dwarf Huckleberry)	4	C
Kalmia polifolia Wang. (Pale Laurel)	2	ST
Lyonia mariana (L.) D. Don. (Staggerbush)	1*	C
Rhododendron periclymenoides (Michx.) Shinners [=R. nudiflorum (L.) Torr.] (Pinxter-flower)	1*	C
Fabaceae (Bean Family)		
Arabis drummondii A. Gray (Rock-cress)	1*	C
Cassia hebecarpa Fern. (Wild Senna)	1	ST
Crotalaria sagittalis L. (Rattlebox)	1	ST
Desmodium ciliare (Muhl.) DC. (Small-leaved Tick-trefoil)	2	ST
Desmodium sessilifolium (Torr.) Torr. & Gray (Sessile-leaved Tick-trefoil)	1	SE
Lupinus perennis L. (Wild Lupine)	8	C
Strophostyles umbellata (Muhl.) Britt. (Pink Wild Bean)	1*	C
Tephrosia virginiana (L.) Pers. (Goat's-Rue)	5	SI

Species	Extant Pop	Status
Fagaceae (Oak Family)		
Quercus stellata Wangenh. (Post Oak)	2	SI
Quercus prinoides Willd. [=Q. prinoides Willd. var. rufescens Rehd.] (Dwarf Chestnut Oak)	7	C
Fumariaceae (Fumitory Family)		
Adlumia fungosa (Aiton) Greene (Climbing Fumitory)	2	SE
Corydalis sempervirens (L.) Pers. (Pale Corydalis)	10	C
Gentianaceae (Gentian Family)		
Gentiana andrewsii Griseb. (Closed Gentian)	0 (1915)	SH
Gentianopsis crinita (Froelich)Ma. (Fringed Gentian)	5	SI
Sabatia kennedyana Fern. (Plymouth Gentian)	4	SE
Sabatia stellaris Pursh. (Sea-Pink)	4	ST
Geraniaceae (Geranium Family)		
Geranium bicknellii Britt. (Bicknell's Geranium)	1	ST
Geranium robertianum L. (Herb-Robert)	3	ST
Grossulariaceae (Gooseberry Family)		
Ribes hirtellum Michx. (Smooth Gooseberry)	4	SI

Species	Extant Pop	Status
Haloragaceae (Water-milfoil Family)		
Myriophyllum alterniflorum DC. (Alternate-flowered Water-Milfoil)	0 (1864)	SH
Myriophyllum pinnatum (Walter) BSP (Pinnate Water-Milfoil)	1*	ST
Proserpinaca pectinata Lam. (Comb-like Mermaid-weed)	1*	C
Haemodoraceae (Bloodwort Family)		
Lachnanthes caroliana (Lam.) Dandy [=L. tinctoria (Walt.) Ell.] (Carolina Redroot)	4	ST
Iridaceae (Iris Family)		
Sisyrinchium fuscatum E. Bickn. [=S. arenicola Bickn. (Sandplain Blue-eyed Grass)	0 (1900)	SH
Juncaceae (Rush Family)		
Juncus debilis A. Gray (Weak Rush)	3	SI
Juncaginaceae (Arrow-grass Family)		
Triglochin palustre L. (Arrow-grass)	0 (1878)	SH
Lamiaceae (Mint Family)		
Hedeoma pulegioides (L.) Pers. (American Pennyroyal)	4	SI
Monarda fistulosa L. (Wild Bergamot)	0 (1963)	SH
Physostegia virginiana (L.) Benth. (False Dragonhead)	2	SI

Species	Extant Pop	Status
Stachys hyssopifolia Michx. (Hyssop-leaved Hedge-Nettle)	2	SE
Lentibulariaceae (Bladderwort Family)		
Utricularia biflora Lam. (Two-flowered Bladderwort)	2	ST
Utricularia geminiscapa Benj. (Paired Bladderwort)	5	SI
Utricularia gibba L. (Humped Bladderwort)	3	SI
Utricularia intermedia Hayne (Flat-leaved Bladderwort)	1	SI
Utricularia minor L. (Small Bladderwort)	0 (1920)	SH
Utricularia resupinata B.D.Greene (Reversed Bladderwort)	2	ST
Utricularia subulata L. (Zigzag Bladderwort)	3	ST
Liliaceae (Lily Family)		
Aletris farinosa L. (Colicroot)	8	C
Allium tricoccum Aiton. (Wild Leek)	3	SI
Lilium canadense L. (Canada Lily)	3	ST
Lilium philadelphicum L. (Wood Lily)	9	C
Smilacina trifolia (L.) Desf. (Three-leaved False Solomon's Seal)	0 (1960)	SH
Streptopus roseus Michx. (Rose Twisted-stalk)	2	ST

Species	Extant Pop	Status
Trillium erectum L. (Purple Trillium)	2	ST
Linaceae (Flax Family)		
Linum intercursum E. Bickn. (Sandplain Flax)	1	SE
Linum medium (Planchon) Britton var. texanum (Planchon) Fern. (Common Yellow Flax)	1*	C
Linum sulcatum Riddell (Grooved Flax)	1	SE
Lythraceae (Loosestrifes)		
Rotala ramosior (L.) Koehne (Toothcup)	1	SE
Najadaceae (Water-nymph Family)		
Naias guadalupensis (Spreng.) Magnus (Naiad)	1*	C
Oleaceae (Ash Family)		
Fraxinus nigra Marshall (Black Ash)	7	C
Onagraceae (Evening-primrose Family)		
Circaea alpina L. (Small Enchanter's Nightshade)	4	C
Epilobium palustre L. (Marsh Willow-herb)	2	SI
Ludwigia sphaerocarpa Elliott (Round-fruited False Loosestrife)	1	SE

Species	Extant Pop	Status
Orchidaceae (Orchids)		
Arethusa bulbosa L. (Swamp Pink)	5	SE
Calopogon tuberosus (L.) BSP [=C. pulchellus (Salisb.) R.Br.] (Grass Pink)	7	C
Coeloglossum viride (L.) Hartman var. virescens (Muhl. ex Willd.) Luer [=Habenaria bracteata (Muhl. ex Willd.) R.Br.] (Long-bracted Green Orchis)	2	ST
Corallorhiza maculata (Raf.) Raf. (Large Coralroot)	7	SI
Corallorhiza odontorhiza (Willd.) Nutt. (Autumn Coralroot)	3	ST
Corallorhiza trifida Chatelain (Early Coralroot)	4	SI
Cypripedium calceolus L. var. pubescens (Willd.) Correll [=C. pubescens] (Large Yellow Lady-slipper)	4	ST
Cypripedium calceolus L. var. parviflorum (Salisb.) Fern. [=C. parviflorum Salisb.] (Small Yellow Lady-slipper)	2	ST
Orchis spectabilis L. [=Galearis spectabilis (L.) Raf.] (Showy Orchis)	1	SE
Isotria medeoloides (Pursh) Raf. (Small Whorled Pogonia)	1	FT
Liparis lilifolia (L.) L.C. Rich. (Lily-leaved Twayblade)	4	ST
Liparis loeselii (L.) L.C. Rich. (Yellow Twayblade)	2	ST
Listera cordata (L.) R.Br. (Heartleaf Twayblade)	0 (1897)	SH
Malaxis unifolia Michx. (Green Adder's mouth)	1	SE

Species	Extant Pop	Status
Platanthera blephariglottis (Willd.) Lindl. [=Habenaria blephariglottis (Willd.) Hook.] (White Fringed Orchid)	3	ST
Platanthera ciliaris (L.) Lindl. [=Habenaria ciliaris (L.) R.Br.] (Yellow Fringed Orchid)	2	SE
Platanthera flava (L.) Lindl. var. herbiola (R.Br.) Luer [=Habenaria flava (L.) R.Br. var. herbiola (R.Br.) Ames & Correll] (Pale Green Orchid)	3	SE
Platanthera hookeri (Torr. ex Gray) Lindl. [=Habenaria hookeri Torr. ex Gray] (Hooker's Orchid)	1	SE
Platanthera hyperborea (L.) Lindl. [=Habenaria hyperborea (L.) R.Br.] (Northern Green Orchid)	2	ST
Platanthera orbiculata (Pursh) Lindl. [=Habenaria orbiculata (Pursh) Torr.] (Round-leaved Orchid)	3	ST
Platanthera orbiculata (Pursh) Lindl. var. macrophylla (Goldie) Luer [=Habenaria macrophylla Goldie] (Large Round-leaved Orchid)	1	ST
Platanthera psycodes (L.) Lindl. [=Habenaria psycodes (L.) Spreng] (Small Purple Fringed Orchid)	9	C
Spiranthes lucida (H. Eaton) Ames (Shining Ladies'-tresses)	0 (1960)	SH
Spiranthes tuberosa Raf. [includes var. gravi (Ames) Fern.] (Little Ladies'-tresses)	1	SE
Spiranthes vernalis Engelm. & A. Gray (Spring Ladies'-tresses)	3	SI
Orobanchaceae (Broom-rape Family)		
Conopholis americana (L.) Wallr. (Squaw-root)	8	C

Species	Extant Pop	Status
Oxalidaceae (Wood sorrel Family)		
Oxalis violacea L. (Violet Wood-Sorrel)	1	SE
Papaveraceae (Poppy Family)		
Sanguinaria canadensis L. (Bloodroot)	6	C
Poaceae (Grass Family)		
Aristida longespica Poiret. (Slim-spike Three-awn)	6	C
Aristida purpurascens Poiret. (Purple Needlegrass)	2	ST
Diplachne maritima Bickn. (Saltpond Grass)	0 (1913)	SH
Elymus villosus Muhl. (Downy Wild Rye)	1*	C
Oryzopsis pungens (Torr.) A. Hitchc. (Northern Ricegrass)	1*	C
Panicum amarum Elliott (Panic-grass)	1*	C
Panicum philadelphicum Bernh. (Philadelphia Panic-grass)	3	SI
Panicum rigidulum Nees [=P. agrostoides Spreng.] (Long-leaved Panic-grass)	3	SI
Panicum wrightianum Scribn. (Wright's Panic-grass)	2	SI
Poa languida A. Hitchc. (Weak Bluegrass)	1*	C

Species	Extant Pop	Status
Puccinellia pumila (Vasey) A. Hitchc. [=P. langeana (Berlin) Sorensen var. alaskana (Scribn. & Merr.) Fern. & Weath.] (Goosegrass)	0 (1917)	SH
Setaria geniculata (Lam.) P. Beauv. (Bristly Foxtail)	1	C
Sorghastrum nutans (L.) Nash (Indian Grass)	4	C
Spartina cynosuroides (L.) Roth (Salt Reed Cordgrass)	2	SI
Sphenopholis nitida (Biehler) Scribn. (Shining Sphenopholis)	1*	C
Sphenopholis obtusata (Michx.) Scribn. (Prairie Wedgegrass)	1*	C
Sphenopholis pensylvanica (L.) Hitchc. [=Trisetum pensylvanicum (L.) Beauv.] (Swamp Oats)	1*	C
Sporobolus asper (Michx.) Kunth (Tall Dropseed)	1*	C
Tripsacum dactyloides (L.) L. (Northern Gama-grass)	6	C
Zizania aquatica L. (Wild Rice)	6	C
Podostemaceae (River-weed Family)		
Podostemum ceratophyllum Michx. (Riverweed)	0 (1890)	SH
Polygalaceae (Milkwort Family)		
Polygala cruciata L. (Cross-leaved Milkwort)	3	SI

Species	Extant Pop	Status
Polygala verticillata L. (Whorled Milkwort)	3	SI
Polygonaceae (Buckwheat Family)		
Polygonum glaucum Nutt. (Seabeach Knotweed)	3	ST
Polygonum hydropiperoides Michx. var. setaceum (Baldw.) Gleason [= P. setaceum Baldw. var. interjectum Fern.] (Strigose Knotweed)	0 (1924)	SH
Portulaceae (Purslanes)		
Clavtonia virginica L. (Meadow Beauty)	0 (1838)	SH
Primulaceae (Primrose Family)		
Glaux maritima L. (Sea Milkwort)	0 (1917)	SH
Hottonia inflata Elliott (Featherfoil)	5	SI
Pyrolaceae (Shinleaf Family)		
Moneses uniflora (L.) A. Gray (One-flowered Wintergreen)	2	ST
Pyrola secunda L. [=Orthilia secunda (L.) House] (One-sided Pyrola)	2	ST
Pyrola chlorantha Sw. [=Pyrola virens Schweig.] (Green Pyrola)	4	SI

Species	Extant Pop	Status
Ranunculaceae (Buttercup Family)		
Actaea rubra (Aiton) Willd. (Red Baneberry)	5	SI
Anemone cylindrica A. Gray (Long-fruited Anemone)	3	SI
Anemone virginiana L. [=A. riparia Fern.] (Large Anemone)	0 (1950)	SH
Anemonella thalictroides (L.) Spach. (Rue Anemone)	4	C
Clematis occidentalis (Hornem.) DC. [=C. verticillaris DC.] (Purple Clematis)	1	SE
Hepatica americana (DC.) KerGawler (Hepatica)	5	C
Ranunculus allegheniensis Britt. (Allegheny Crowfoot)	1*	C
Ranunculus ambigens S. Wats (Water-plantain Spearwort)	1*	C
Ranunculus cymbalaria Pursh. (Seaside Buttercup)	0 (1948)	SH
Ranunculus flabellaris Raf. (Yellow Water-Crowfoot)	4	SI
Ranunculus micranthus Nutt. (Small-flowered Crowfoot)	1	ST
Ranunculus scleratus L. (Cursed Crowfoot)	2*	C
Ranunculus trichophyllus Chaix. var. calvescens W.Drew [=R. aquatilis var. capillaceus] (White Water-Crowfoot)	0 (1963)	SH
Thalictrum revolutum DC. (Purple Meadow-Rue)	0 (1900)	SH

Species	Extant Pop	Status
Rosaceae (Rose Family)		
Agrimonia pubescens Wallr. (Hairy Agrimony)	0 (1912)	SH
Dalibarda repens L. (Dewdrop)	1	SE
Geum laciniatum Murray. (Hairy Herb-Bennet)	0 (1920)	SH
Potentilla tridentata Sol. (Three-toothed Cinquefoil)	0 (1979)	SH
Prunus pumila L. var. cuneata (Raf.)L.H. Bailey [=P. susquehanae Willd.] (Sand Cherry)	3	SI
Sanguisorba canadensis L. (Canadian Burnet)	1	SE
Rubiaceae (Madder Family)		
Hedyotis longifolia (Gaertn.) Hook. [=Houstonia longifolia Gaertn.] (Long-leaved Bluets)	0 (1966)	SH
Salicaceae (Willow Family)		
Populus heterophylla L. (Swamp Cottonwood)	1	SI
Salix pedicellaris Pursh (Bog Willow)	0 (1970)	SH
Saururaceae (Lizard's-tail Family)		
Saururus cernuus L. (Lizard's-tail)	1	SE

Species	Extant Pop	Status
Saxifragaceae (Saxifrage Family)		
Parnassia glauca Raf. (Grass-of-Parnassus)	0 (1980)	SH
Penthorum sedoides L. (Ditch Stonecrop)	7	C
Saxifraga pensylvanica L. (Swamp Saxifrage)	5	SI
Saxifraga virginiensis Michx. (Early Saxifrage)	10	C
Scheuchzeriaceae (Pod-grass Family)		
Scheuchzeria palustris L. (Pod-grass)	1	SE
Scrophulariaceae (Figwort Family)		
Agalinis acuta Pennell [=Gerardia acuta (Pennell) Pennell] (Sandplain Gerardia)	1	FE
Agalinis tenuifolia (Vahl) Raf. [=Gerardia tenuifolia Vahl] (Slender Gerardia)	5	SI
Castilleja coccinea (L.) Spreng. (Painted Cup)	0 (1908)	SH
Gratiola virginiana L. (Virginia Hedge-hyssop)	2	C
Limosella subulata Ives (Mudwort)	5	C
Penstemon digitalis Nutt. (Tall White Beard-tongue)	2*	C
Penstemon hirsutus (L.) Willd. (Northeastern Beard-tongue)	1*	C

Species	Extant Pop	Status
Scrophularia lanceolata Pursh. (Hare Figwort)	4	SI
Scrophularia marilandica L. (Maryland Figwort)	2	ST
Ulmaceae (Elm Family)		
Ulmus rubra Muhl. (Slippery Elm)	2	SI
Violaceae (Violet Family)		
Viola canadensis L. (Canada Violet)	0 (1920)	SH
Viola pubescens Aiton [=V. pensylvania Michx.] (Smooth Yellow Violet)	2	SI
Viola rotundifolia Michx. (Round-leaved Yellow Violet)	6	SI
Viscaceae (Christmas-mistletoe Family)		
Arceuthobium pusillum M.E. Peck (Dwarf Mistletoe)	1	SE
Xyridaceae (Yellow-eyed Grass Family)		
Xyris montana H. Ries (Northern Yellow-eyed Grass)	3	ST

INDEX OF GENERA

(Names in parentheses are no longer in use, but refer to synonym entries.)

Anemonella	Ranunculaceae
Angelica	Apiaceae
Aralia	Araliaceae
Arabis	Fabaceae
Arceuthobium	Viscaceae
Arenaria	Caryophyllaceae
Arethusa	Orchidaceae
Aristida	Poaceae
Artemisia	Asteraceae
Asarum	Aristolochiaceae
Asclepias	Asclepiadaceae
Aster	Asteraceae
Atriplex	Chenopodiaceae
Bidens	Asteraceae
Calopogon	Orchidaceae
Cardamine	Brassicaceae
Carex	Cyperaceae
Cassia	Fabaceae
Castilleja	Scrophulariaceae
Caulophyllum	Berberidaceae
Chenopodium	Chenopodiaceae
Chrysopsis	Asteraceae
Circaea	Onagraceae
Claytonia	Portulaceae
Clematis	Ranunculaceae
Coeloglossum	Orchidaceae
Conopholis	Orobanchaceae
Corallorhiza	Orchidaceae
Coreopsis	Asteraceae
Cornus	Cornaceae
Corydalis	Fumariaceae
Crotalaria	Fabaceae
Cryptotaenia	Apiaceae
Cyperus	Cyperaceae
Cypripedium	Orchidaceae
Dalibarda	Rosaceae
Desmodium	Fabaceae
Diplachne	Poaceae
Draba	Brassicaceae
Drosera	Droseraceae
Elatine	Elatinaceae
Eleocharis	Cyperaceae
Elymus	Poaceae
Epilobium	Onagraceae
Eriophorum	Cyperaceae
Eupatorium	Asteraceae

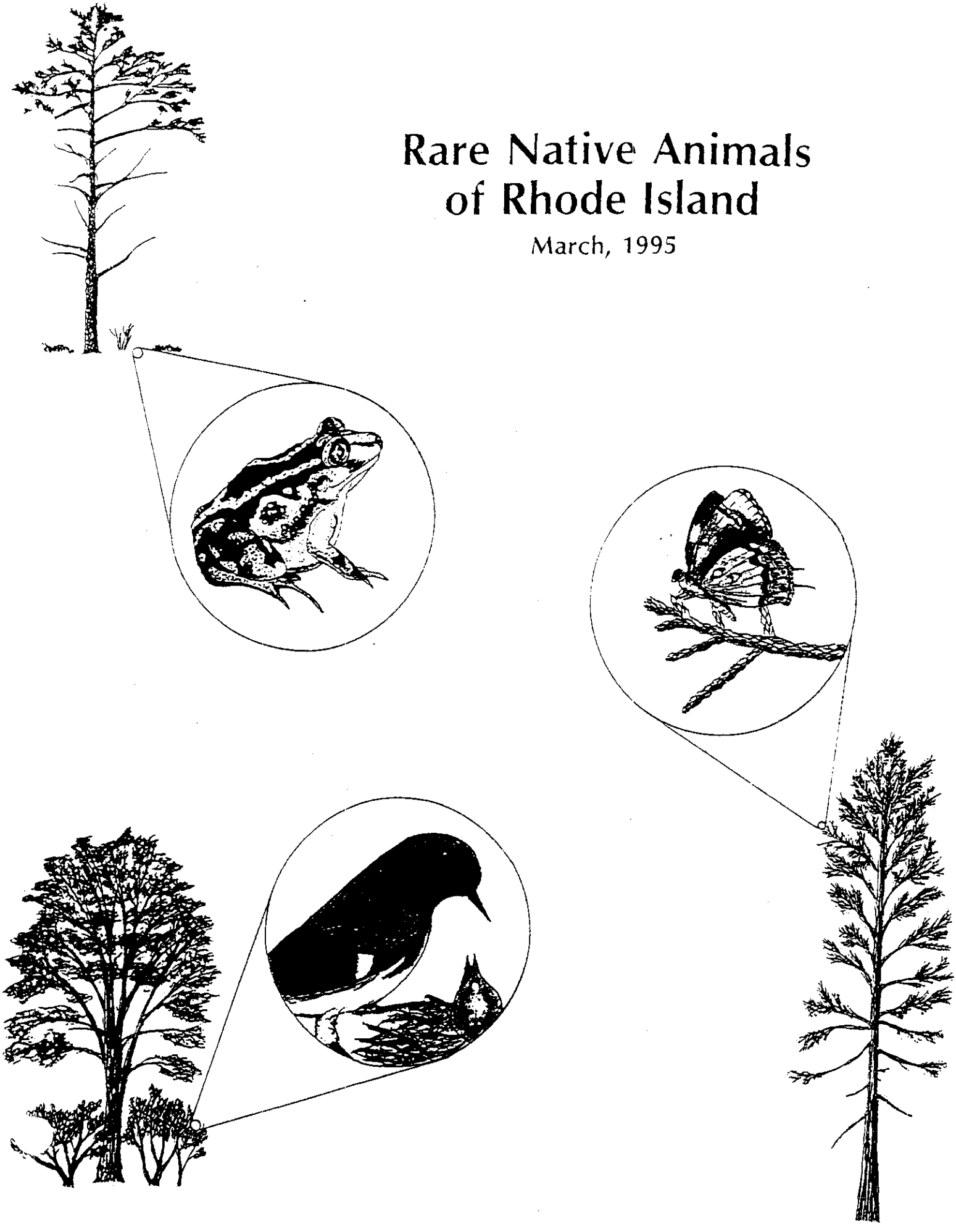
Fraxinus	Oleaceae
Fuirena	Cyperaceae
(Galearis)	Orchidaceae
Gaultheria	Ericaceae
Gaylussacia	Ericaceae
Gentiana	Gentianaceae
Gentianopsis	Gentianaceae
Geranium	Geraniaceae
(Gerardia)	Scrophulariaceae
Geum	Rosaceae
Glaux	Primulaceae
Gnaphalium	Asteraceae
Gratiola	Scrophulariaceae
(Habenaria)	Orchidaceae
Hedeoma	Lamiaceae
Hedyotis	Rubiaceae
Helianthemum	Cistaceae
Helianthus	Asteraceae
Hemicarpa	Cyperaceae
Hepatica	Ranunculaceae
Honckenya	Caryophyllaceae
Hottonia	Primulaceae
(Houstonia)	Rubiaceae
Hudsonia	Cistaceae
Hydrocotyle	Apiaceae
Hypericum	Clusiaceae
Isotria	Orchidaceae
Juncus	Juncaceae
Kalmia	Ericaceae
Lachnanthes	Haemodoraceae
Liatris	Asteraceae
Ligusticum	Apiaceae
Lilium	Liliaceae
Limosella	Scrophulariaceae
Linnaea	Caprifoliaceae
Linum	Linaceae
Liparis	Orchidaceae
Listera	Orchidaceae
Lobelia	Campanulaceae
Lonicera	Caprifoliaceae
Ludwigia	Onagraceae
Lupinus	Fabaceae
Lyonia	Ericaceae
Malaxis	Orchidaceae
(Minuartia)	Caryophyllaceae
Monarda	Lamiaceae

Moneses	Pyrolaceae
Myriophyllum	Haloragaceae
Najas	Najadaceae
Onosmodium	Boraginaceae
Orchis	Orchidaceae
Orontium	Araceae
Oryzopsis	Poaceae
Osmorhiza	Apiaceae
Oxalis	Oxalidaceae
Panax	Araliaceae
Panicum	Poaceae
Parnassia	Saxifragaceae
Penstemon	Scrophulariaceae
Penthorum	Saxifragaceae
Physostegia	Lamiaceae
Platanthera	Orchidaceae
Poa	Poaceae
Podostemum	Podostemaceae
Polygala	Polygalaceae
Polygonum	Polygonaceae
Populus	Salicaceae
Potentilla	Rosaceae
Prenanthes	Asteraceae
Proserpinaca	Haloragaceae
Prunus	Rosaceae
(Psilocarya)	Cyperaceae
Ptilimnium	Apiaceae
Puccinellia	Poaceae
Pyrola	Pyrolaceae
Quercus	Fagaceae
Ranunculus	Ranunculaceae
Rhododendron	Ericaceae
Rhynchospora	Cyperaceae
Ribes	Grossulariaceae
Rotala	Lythraceae
Rudbeckia	Asteraceae
Sabatia	Gentianaceae
Sagittaria	Alismataceae
Salix	Salicaceae
Sambucus	Caprifoliaceae
Sanguinaria	Papaveraceae
Sanguisorba	Rosaceae
Saururus	Saururaceae
Saxifraga	Saxifragaceae
Scheuchzeria	Scheuchzeriaceae
Scirpus	Cyperaceae

Scleria	Cyperaceae
Sclerolepis	Asteraceae
Scrophularia	Scrophulariaceae
Setaria	Poaceae
Sisyrinchium	Iridaceae
Smilacina	Liliaceae
Solidago	Asteraceae
Sorghastrum	Poaceae
Spartina	Poaceae
Sphenopholis	Poaceae
Spiranthes	Orchidaceae
Sporobolus	Poaceae
Stachys	Lamiaceae
Streptopus	Liliaceae
Strophostyles	Fabaceae
Suaeda	Chenopodiaceae
Taenidia	Apiaceae
Tephrosia	Fabaceae
Thalictrum	Ranunculaceae
Triglochin	Juncaginaceae
Trillium	Liliaceae
Triosteum	Caprifoliaceae
Tripsacum	Poaceae
(Trisetum)	Poaceae
Ulmus	Ulmaceae
Utricularia	Lentibulariaceae
Viburnum	Caprifoliaceae
Viola	Violaceae
Xyris	Xyridaceae
Zizania	Poaceae
Zizia	Apiaceae

Rare Native Animals of Rhode Island

March, 1995



ABOUT THIS LIST

The list is divided by vertebrates and invertebrates and is arranged taxonomically according to the recogized authority cited before each group. Appropriate synonomy is included where names have changed since publication of the cited authority.

The Natural Heritage Program's Rare Native Plants of Rhode Island includes an estimate of the number of "extant populations" for each listed plant species, a figure which has been helpful in assessing the health of species over their entire range. Because animals are mobile, some exhibiting annual long-distance migrations, it is not possible to derive a population index which can be applied to all animal groups. The status assigned to each species (see definitions in next section) provides some indication of its range and relative abundance. More specific and pertinent data is available from the Natural Heritage Program and the Rhode Island Encangered Species Program.

STATUS

The status of each species is designated by letter codes as defined below:

(FE) **Federally Endangered** (7 species currently listed)

(FT) **Federally Threatened** (2 species currently listed)

(SE) **State Endangered** Native species in imminent danger of extirpation from Rhode Island. These taxa meet one or more of the following criteria:

1. A species currently under review for listing by the U.S. Fish and Wildlife Service as Federally endangered or threatened. Those identified as C2 (Category 2) are taxa for which information indicates that proposing to list under the Federal Endangered Species Act is possibly appropriate, but for which sufficient data on biological vulnerability and threat are not currently available to support proposed rules. Designation of C2 status by the Federal government does not automatically warrant an SE rank in Rhode Island unless one of the following criteria also apply.

2. A species with 1 or 2 known or estimated total populations in the state.

3. A species apparently globally rare or threatened, and estimated to occur as approximately 100 or fewer populations range-wide.

Animals listed as State Endangered are protected under the provisions of the Rhode Island State Endangered Species Act, Title 20 of the General Laws of the State of Rhode Islands. This law states, in part (20-37-3):

"No person shall buy, sell, offer for sale, store, transport, export, or otherwise traffic in any animal or plant or any part of any animal or plant whether living or dead, processed, manufactured, preserved or raw (if) such animal or plant has been declared to be an endangered species by either the United States secretaries of the Interior or Commerce or the Director of the R. I. Department of Environmental Management."

(ST) State Threatened — Native species which are likely to become state endangered in the future if current trends in habitat loss or other detrimental factors remain unchanged. These species meet one or more of the following criteria:

1. A species with 3 to 5 known or estimated populations in the state.

2. A species with more than 5 known or estimated populations in the state, but exhibiting particular vulnerability to habitat loss.

(SI) State Interest — Native species not considered to be State Endangered or State Threatened at the present time, but occur in 10 or fewer sites in the state.

(C) Concern — Native species which do not apply under the above categories but are additionally listed due to various factors of rarity and/or vulnerability; or, species which may warrant listing in higher categories but status information is presently not well known.

(SH) State Historical — Native species which have been documented for the state during the last 100 years but for which current occurrences are unknown. When known, the year of the last documented occurrence is included.

FUTURE REVISIONS

The listing of rare species is an ongoing process requiring annual revisions to reflect the best scientific information available concerning the circumstances of rarity, as well as our increased knowledge of the native fauna. Submission of additional data on species currently listed, or on other species which may warrant listing, is encouraged. Information should be sent to:

Rhode Island Natural Heritage Program
Rhode Island Department of Environmental Management
Division of Planning & Development
83 Park Street
Providence, Rhode Island 02903
Telephone: (401) 277-2776

Rhode Island Endangered Species Program
Rhode Island Department of Environmental Management
Division of Fish, Wildlife & Estuarine Resources
Great Swamp Management Area
West Kingston, Rhode Island 02892
Telephone: (401) 789-0281

INVERTEBRATES

The task of evaluating the status of invertebrates in Rhode Island has been initiated for selected groups. At this time the list primarily includes freshwater bivalves (clams and mussels) and the following insect groups: lepidopterans (moths and butterflies), odonates (dragonflies and damselflies), silphids (burying beetles), and cicindelids (tiger beetles). Additional taxa will be added in the future upon the completion of further research and inventory. The following publications are a partial listing of taxonomic references:

Hodges, R.W., et. al. 1983. Check list of the Lepidoptera of America north of Mexico. E.W. Classey Ltd. and Wedge Entomological Research Foundation. 1-284.

Johnson, R.I. 1980. Zoogeography of North American Unionacea (Mollusca: Bivalvia) north of the maximum Pleistocene glaciation. Bull. Museum Comparative Zoology. 149:77-189.

BIVALVE MOLLUSKS

Unionoida (freshwater mussels)

Margaritiferidae (pearlshells)

Margaritifera margaritifera	Eastern Pearlshell	C

Unionidae (unionid mussels)

Alismidonta varicosa	Brook Floater	SH (1897)/C2
Lampsilis radiata	Lampmussel	C
Ligumia nasuta	Eastern Pond Mussel	C
Strophitus undulatus	Squawfoot	SI

CRUSTACEANS

Amphipoda (amphipods)

Crangonyctidae (freshwater amphipods)

Synurella chamberlaini	Coastal Swamp Amphipod	C

INSECTS

Coleoptera (beetles)

Cicindelidae (tiger beetles)

Cicindela dorsalis dorsalis	Northeastern Beach Tiger Beetle	FT/SH (1978)
Cicindela formosa generosa	Pine Barrens Tiger Beetle	C
Cicindela limbalis	Claybanks Tiger Beetle	SI
Cicindela marginata	Salt Marsh Tiger Beetle	C
Cicindela patruela	Barrens Tiger Beetle	SH
Cicindela purpurea	Purple Tiger Beetle	C
Cicindela rufiventris	Red-bellied Tiger Beetle	C

Silphidae (burying beetles)

Nicrophorus americanus	American Burying Beetle	FE

Staphylinidae (rove beetles)

Lordithon niger	Black Lordithon Rove Beetle	C/C2

Lepidoptera (butterflies and moths)

Lycaenidae (coppers, hairstreaks, elfins, & blues)

Lycaena epixanthe	Bog Copper	C
Satyrium acadica	Acadian Hairstreak	C
Satyrium caryaevorum	Hickory Hairstreak	C
Mitoura hesseli	Hessel's Hairstreak	C
Incisalia henrici	Henry's Elfin	SI
Incisalia irus	Frosted Elfin	SI
Incisalia polia	Hoary Elfin	SI
Fixenia favonius ontario	Northern Hairstreak	C
Parrhasius m-album	White M Hairstreak	C

Nymphalidae (brush-footed butterflies)

Speyeria idalia	Regal Fritillary	SH (1990)/C2
Boloria bellona	Meadow Fritillary	C
Enodia anthedon	Northern Pearly Eye	C

Hesperiidae (skippers)

Erynnis brizo	Sleepy Duskywing	C
Erynnis persius	Persius Duskywing	SH
Poanes massasoit	Mulberry Wing	C
Poanes viator zizaniae	Broad Winged Skipper	C
Atrytonopsis hianna	Dusted Skipper	C

Noctuidae (noctuid moths)

Abagrotis crumbi benjamini	Benjamin's Abagrotis	C
Acronicta lanceolaria	A Noctuid Moth	SI
Apharetra purpurea	Blueberry Sallow	SI
Aplectoides condita	A Noctuid Moth	SI
Lithophane viridipallens	Pale Green Pinion Moth	SI
Papaipema leucostigma	Columbine Borer	SH
Spartiniphaga inops	Spartina Borer	C
Zale sp. (*)	Pine Barrens Zale	SI
Zale submediana	A Noctuid Moth	C

(*) a full scientific name for this species has not been published.

Saturniidae (saturnid moths)

Citheronia regalis	Royal Walnut Moth	SH (1939)
Citheronia sepulcralis	Pine Devil	SH
Hemileuca maia maia	Barrens Buckmoth	SI

Odonata (dragonflies and damselflies)

Aeshnidae (darners)

Aeshna mutata	Spatterdock Darner	SI

Gomphidae (clubtails)

Ophiogomphus aspersus	Brook Snaketail	SI

Corduliidae (emeralds)

Dorocordulia libera	Racket-tailed Emerald	C
Williamsonia lintneri	Ringed Boghaunter	SI/C2

Coenagrionidae (pond damselflies)

Enallagma laterale	New England Bluet	C/C2
Enallagma pictum	Scarlet Bluet	C
Enallagma recurvatum	Pine Barrens Bluet	SI
Nehalennia irene	Sedge Sprite	SI

Libellulidae (common skimmers)

Nannothemis bella	Bluebell	C

VERTEBRATES

The following references have been used as taxonomic authorities for vertebrate groups.

Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.E. Lea, and W.B. Scott. 1980. A list of common and scientific names of fishes of the United States and Canada. 4th edition. Amer. Fish. Soc., Spec. Publ. 12. 1-174.

Collins, J.T., J.E. Huheey, J.L. Knight, and H.M. Smith. 1978. Standard and scientific names for North American amphibians and reptiles. Herp. Circular No. 7. 1-36.

American Ornithologist's Union. 1983. Check-list of North American birds. (Including periodic supplements published in the journal Auk).

Jones, J.K., Jr., D.C. Carter, and H.H. Genoways. 1979. Revised checklist of North American mammals north of Mexico, 1979. Occas. Papers, Mus. Texas Tech. Univ., 62. 1-17.

FISH

Petromyzontidae (lampreys)		
Lampetra appendix	American Brook Lamprey	SI
Acipenseridae (sturgeons)		
Acipenser oxyrhynchus	Atlantic Sturgeon	SH

AMPHIBIANS

Plethodontidae (lungless salamanders)		
Gyrinophilus porphyriticus	Northern Spring Salamander	SI
Pelobatidae (spadefoot toads)		
Scaphiopus holbrookii	Eastern Spadefoot	ST
Ranidae (true frogs)		
Rana pipiens	Northern Leopard Frog	SI

REPTILES

Note: Several reptiles are protected by regulations of the Rhode Island Division of Fish and Wildlife, which identifies those species as "protected", and that possession without permit is prohibited at all times. Those species protected under these regulations are indicated by "P" in the status column.

Cheloniidae (sea turtles) *

Caretta caretta	Atlantic Loggerhead	FT
Chelonia m. mydas	Atlantic Green Turtle	FT
Lepidochelys kempii	Atlantic Ridley	FE

Dermochelyidae (leatherback turtles) *

Dermochelys c. coriacea	Atlantic Leatherback	FE

* occur as transients in offshore waters only.

Emydidae (turtles)

Clemmys guttata	Spotted Turtle	P
Clemmys insculpta	Wood Turtle	SI/P
Malaclemys t. terrapin	Northern Diamondback Terrapin	SE/C2/P
Terrapene carolina	Eastern Box Turtle	P

Colubridae (colubrid snakes)

Carphophis amoenus	Eastern Worm Snake	SI
Elaphe obsoleta	Black Rat Snake	SI
Heterodon platirhinos	Eastern Hognose Snake	C
Thamnophis sauritus	Eastern Ribbon Snake	C

Viperidae (vipers)

Crotalus horridus	Timber Rattlesnake	SH (1972)/P

BIRDS

Note: Except in the case of the Federally listed Bald Eagle and Peregrine Falcon, birds are listed based on their breeding status in Rhode Island.

Podicipedidae (grebes)

Podilymbus podiceps	Pied-billed Grebe	SE

Ardeidae (herons)

Botaurus lentiginosus	American Bittern	SE
Ixobrychus exilis	Least Bittern	C
Ardea herodias	Great Blue Heron	SI
Casmerodius albus	Great Egret	SI
Egretta caerulea	Little Blue Heron	SI
Egretta thula	Snowy Egret	SI
Bubulcus ibis	Cattle Egret	SI
Nycticorax nycticorax	Black-crowned Nigh: Heron	SI
Nyctanassa violacea	Yellow-crowned Night Heron	SI

Threskiornithidae (ibises)

Plegadis falcinellus	Glossy Ibis	SI

Anatidae (swans, geese, ducks)

Anas crecca	Green-winged Teal	C
Anas discors	Blue-winged Teal	SI
Anas strepera	Gadwall	C
Lophodytes cucullatus	Hooded Merganser	C

Accipitridae (eagles, hawks)

Haliaeetus leucocephalus	Bald Eagle	FT
Pandion haliaetus	Osprey	C
Circus cyaneus	Northern Harrier	SE
Accipiter striatus	Sharp-shinned Hawk	SH (1939)
Accipiter cooperii	Cooper's Hawk	SI
Accipiter gentilis	Northern Goshawk	SI/C2
Falco peregrinus	Peregrine Falcon	FE

Rallidae (rails, gallinules)

Rallus elegans	King Rail	SI
Rallus longirostris	Clapper Rail	SI
Porzana carolina	Sora	SI
Gallinula chloropus	Common Moorhen	SI

Charadriidae (plovers)

Charadrius melodus	Piping Plover	FT

Haematopodidae (oystercatchers)

Haematopus palliatus	American Oystercatcher	SI

Scolopacidae (sandpipers)

Catoptrophorus semipalmatus	Willet	C
Bartramia longicauda	Upland Sandpiper	SE

Laridae (gulls, terns)

Sterna dougallii	Roseate Tern	FE/SH (1979)
Sterna antillarum	Least Tern	ST

Tytonidae (barn owls)

Tyto alba	Barn Owl	SE

Strigidae (owls)

Asio otus	Long-eared Owl	C
Aegolius acadicus	Northern Saw-whet Owl	C

Caprimulgidae (goatsuckers)

Chordeiles minor	Common Nighthawk	C

Picidae (woodpeckers)

Melanerpes erythrocephalus	Red-headed Woodpecker	C
Dryocopus pileatus	Pileated Woodpecker	SI

Tyrannidae (flycatchers)		
Empidonax virescens	Acadian Flycatcher	SI
Alaudidae (larks)		
Eremophila alpestris	Horned Lark	SI
Hirundinidae (swallows)		
Hirundo pyrrhonota	Cliff Swallow	SH (1991)
Corvidae (crows)		
Corvus ossifragus	Fish Crow	C
Troglodytidae (wrens)		
Troglodytes troglodytes	Winter Wren	C
Cistothorus palustris	Marsh Wren	C
Muscicapidae (kinglets)		
Regulus satrapa	Golden-crowned Kinglet	C
Emberizidae (warblers, sparrows)		
Vermivora chrysoptera	Golden-winged Warbler	SH (1960)
Parula americana	Northern Parula	ST
Dendroica caerulescens	Black-throated Blue Warbler	SE
Dendroica cerulea	Cerulean Warbler	ST/C2
Dendroica fusca	Blackburnian Warbler	ST
Protonotaria citrea	Prothonotary Warbler	SI
Helmitheros vermivorus	Worm-eating Warbler	C
Icteria virens	Yellow-breasted Chat	SH (1990)
Pooecetes gramineus	Vesper Sparrow	SH (1984)
Ammodramus henslowii	Henslow's Sparrow	SH (1940)/C2
Ammodramus savannarum	Grasshopper Sparrow	ST
Ammodramus maritimus	Seaside Sparrow	C
Zonotrichia albicollis	White-throated Sparrow	C
Junco hyemalis	Dark-eyed Junco	C
Icterus spurius	Orchard Oriole	C

MAMMALS

Soricidae (shrews)		
Sorex fumeus	Smoky Shrew	C
Sorex palustris	Water Shrew	SI
Leporidae (rabbits, hares)		
Sylvilagus transitionalis	New England Cottontail	C/C2
Muridae (mice)		
Microtus pennsylvanicus provectus	Block Island Meadow Vole	C/C2
Synaptomys cooperi	Southern Bog Lemming	C
Mustelidae (weasels)		
Martes pennanti	Fisher	SI
Felidae (cats)		
Lynx rufus	Bobcat	ST

FEDERAL PROTECTED SPECIES INFORMATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Offices
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

March 16, 1994

Jim Duncan
ENSR Consulting and Engineering
35 Nagog Park
Acton, MA 01720

Dear Mr. Duncan:

This responds to your letter dated January 21, 1994 requesting information on the presence of Federally listed and proposed endangered or threatened species in relation to 39 Army Reserve Centers in New England. The centers reviewed occur in: Connecticut (8), Maine (3), Massachusetts (12), New Hampshire (5), Rhode Island (7) and Vermont (4).

Based on information currently available to us, no Federally listed or proposed threatened and endangered species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area, with the exception of occasional transient endangered bald eagles (Haliaeetus leucocephalus) or peregrine falcons (Falco peregrinus anatum). However, we suggest that you contact the following for information on state listed species that may be present:

Nancy Murray
Connecticut Natural Diversity Data Base
79 Elm St., P.O. Box 5066
Hartford, CT 06106-5066
203-566-3540

Sue Gawler
Maine Natural Areas Program
State House Station 130
Augusta, Maine 04333
(207) 289-6800

Pat Huckery
Massachusetts Natural Heritage Program
Division of Fisheries and Wildlife
100 Cambridge St., Boston, MA 02202
(617) 727-9194

David Moore
New Hampshire Natural Heritage Inventory Program
P.O. Box 856, Concord, New Hampshire 03302-0856
(603) 271-3623

Rick Enser
Rhode Island Natural Heritage Program
83 Park St.
Providence, RI 02903
(401) 277-2776,

Chris Fichtel
Vermont Natural Heritage Program
Agency of Natural Resources
10 South, 103 S. Main St.
Waterbury, VT 05676
(802) 244-7331

Lists of Federally designated endangered and threatened species in all of the New England state are included for your information. Thank you for your cooperation and please contact Susi von Oettingen of this office at (603) 225-1411 if we can be of further assistance.

Sincerely yours,

Kenneth C Carr

for Gordon E. Beckett
Supervisor
New England Field Offices

Enclosures

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN RHODE ISLAND

Common Name	Scientific Name	Status	Distribution
FISHES:			
Sturgeon, shortnose*	Acipenser brevirostrum	E	Atlantic coastal waters and rivers
REPTILES:			
Turtle, green*	Chelonia mydas	T	Oceanic straggler in southern New England
Turtle, hawksbill*	Eretmochelys imbricata	E	Oceanic straggler in southern New England
Turtle, leatherback*	Dermochelys coriacea	E	Oceanic summer resident
Turtle, loggerhead*	Caretta caretta	T	Oceanic summer resident
Turtle, Atlantic ridley*	Lepidochelys kempii	E	Oceanic summer resident
BIRDS:			
Eagle, bald	Haliaeetus leucocephalus	E	Entire state, occasional
Falcon, American peregrine	Falco peregrinus anatum	E	No current nesting; entire state-migratory
Falcon, Arctic peregrine	Falco peregrinus tundrius	T	No nesting; entire state-migratory
Plover, Piping	Charadrius melodus	T	Atlantic coast, Washington and Newport Counties
Roseate Tern	Sterna dougallii dougallii	E	Atlantic coast
MAMMALS:			
Whale, blue*	Balaenoptera musculus	E	Oceanic
Whale, finback*	Balaenoptera physalus	E	Oceanic
Whale, humpback*	Megaptera novaeangliae	E	Oceanic
Whale, right*	Eubalaena spp. (all species)	E	Oceanic
Whale, sei*	Balaenoptera borealis	E	Oceanic
Whale, sperm*	Physeter catodon	E	Oceanic
MOLLUSKS:			
NONE			
INSECTS:			
Beetle, American burying	Nicrophorus americanus	E	Washington
Beetle, northeastern beach tiger	Cicindela dorsalis dorsalis	T	Washington, probably extirpated
Beetle, Puritan tiger	Cicindela puritana	T	Extirpated
PLANTS:			
Small Whorled Pogonia	Isotria medeoloides	E	Providence, Kent Counties
Gerardia, Sandplain	Agalinus acuta	E	Washington

* Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service

Rev. 11-12-92

RI 00'

RHODE ISLAND HISTORICAL PRESERVATION & HERITAGE COMMISSION
HISTORIC PROPERTY DATA COLLECTION FORM

TOWN Bristol VILLAGE _____ SITE RI-_____ ID # _____

ADDRESS Asylum Rd Restrict? _____

PHOTO NOS [Town-P Code-Date-Roll-Frame] PLAT/LOTS

BRIS-PAL-199503-1-20A, 21A _____

NAME(S) Quinta-Gamelin U. S. Army Reserve Center
If more than one, list & number in order of importance, with Historic Name first

RESOURCE TYPE X Bldg ___Site ___strUc ___Obj OWNERSHIP ___Private Public ___Loc ___St X Fed

STATUS ____DOE ____NR Ind ____NR Dist ____C ____NC ____NHL SURVEYOR PAL, Inc. DATE 3/95

NR DISTRICT Poppasquash Farms Historic District REVIEWER _____ DATE _____

USES: If more than one, list & number in order of importance. Use terms from National Register tables ONLY.

CURRENT defense - military facility

HISTORIC defense - military facility

ALTERATIONS X Maj ___Mod ___Min ___None INTEGRITY ___Exc ___Good ___Fair X Poor ___Dest

STORIES 1 → If categories below have more than one entry, number in order of importance

ROOF FORM 2 gable ___gambrel 1 hip ___flat ___mansard ___shed Other _____

MATERIALS: ROOF X asphalt ___slate ___tile Other _____

WALL ___shingle ___weatherboard X brick ___stucco Other _____

FOUNDATION ___brick ___stone X concrete Other _____ OTHER _____

PROPERTY COMPONENTS: List & number in order of importance; include the primary component of the resource as number 1

Component type	Code	Count	Component type	Code	Count
reserve center	B - C	1			
garage	B - C	1			

EVENT	DATE	SOURCE	PERSON	ROLE
Construction/Origin	1957	Title Card	Reisner & Urban	Architects
Alterations	1988	Title Card	King Architects	Architects
Purchase	1956	Title Card		

ARCHITECTURAL STYLES No style
If more than one, list & number in order of importance

Form version 199502

COMMENTS:

See attached architectural description and historical significance statement.

HISTORY:

BIBLIOGRAPHY:

Fort Devens Real Property Office Records
Facility Records

Community: Bristol
Property Address: Asylum Road

ARCHITECTURAL DESCRIPTION ***(continued)***

The Private First Class John Quinta--Private Arthur J. Gamelin United States Army Reserve Center, designed by Reisner & Urbahn and built as a 200-man center in 1957, originally consisted of an L-shaped, one-story structure. This structure consisted of two components, a 158-foot by 48-foot administrative and classroom block, and a 72-foot by 52-foot drill hall wing connected to the main block at the west end of the north elevation by a narrow, 20-foot long corridor. The administrative and classroom block was demolished in 1988, and a U-shaped, one-story, brick building designed by King Architects was built around the original drill hall. The exposed concrete slab foundation forms a clearly-visible band around the base of the building. The new structure has a complex roof, with planes sloping gently up from the walls to form a low-pitch gable-on-hip at the front (south) side, and then meeting at a ridge which ends at the drill hall. The drill hall retains its original flat roof, with a discrete center ridge for drainage. The main roof planes are continued by the wings that embrace the east and west sides of the drill hall. All eaves are filled with wide, corrugated dark metal coping, and the legend "U.S. ARMY RESERVE" appears on this coping at the front of the building. The rectangular and square, recessed windows with two vertical panes on protruding concrete sills are reminiscent of the fenestration on the original building. The entrance, including a wheelchair access ramp, is now located at the east side of the building, and is flanked by wing walls, and marked with an Army Reserve medallion. The new administration and classroom sections include a rifle range, a windowless, blank brick addition located at the northwest corner of the structure. Other interior features include administrative and classroom space, kitchen, arms vault, boiler room and equipment storage. The original drill hall is located inside the U-shaped new construction. The drill hall has brick walls and a flat, built-up roof edged with the same wide, ribbed metal coping used on the new construction. The drill hall was originally lit by bands of windows at the tops of the long, side walls. These windows, now covered over, expressed the location of the support piers for the steel I-beams which carry the diagonally-braced, open-web roof joists. The drill hall has a thick, concrete slab floor to support the weight of heavy military vehicles. The north wall of the drill hall contains a roll-type garage door for vehicle access and a personnel door.

One related outbuilding, the Maintenance Shop (MS), is located approximately 50 feet north of the rear of the drill hall. The maintenance shop, also designed by Reisner & Urbahn, and built in 1959, is a 53-foot by 46-foot, two-bay, one-story, brick vehicle garage, with a slightly pitched, built-up roof, capped with wide metal coping. Two large roll-type garage doors with small oval windows fill the front (south) bays, and the side walls are divided into three bays by brick pilasters which support the roof beams. The maintenance shop is lit by a band of windows high on the rear (north) elevation. Personnel access doors are located on the east and west sides of the building.

The Pfc. John Quinta--Pvt. Arthur Gamelin Reserve Center is located on a 5.3-acre graded lot on the north side of Asylum Road, which is an access road to Colt State Park. The reserve center is bordered by woods to the north, east and west, and open land to the south. An unfenced triangular area of thickets and woods lies to the west. Beyond this wooded area lies the former right-of-way of the Providence, Warren and Bristol Railroad, now a bicycle path. A cemetery is located to the northeast of the reserve center property. The reserve center is open to the street, and fenced off beyond the front of the building. A gated driveway leads to a paved parking area on the east and south sides of the building, and to the maintenance shop. Landscaping is minimal, consisting of open, mown lawns, flowering shrubs, small trees, and ground cover.

The original Pfc. John Quinta--Pvt. Arthur Gamelin Reserve Center was an example of the main design phase of a series of similar reserve centers constructed across the United States from the early 1950s to the early 1960s. These spartan buildings were designed according to an architectural program developed by the U.S. Army Corps of Engineers and the New York architectural firm of Reisner & Urbahn, and a later incarnation, Urbahn, Brayton & Burrows. The reserve centers were built from a set of master plans, which were adapted as necessary to conform to military capacity requirements, and modified to conform to specific site configurations. The reserve center design program combined the need for low cost, easy expansion, and uniformity with Contemporary, International Style-derived architectural features such as hard-edged rectangular massing, flat roofs, lack of ornamentation, and emphasis on simple materials and regular rhythms of fenestration. The use of the Contemporary Style, combined with the function and interior layout of the reserve centers, resulted in a building type which resembles primary school architecture, as well as corporate and municipal buildings of the period. This building was extensively altered in the 1988 expansion, although some attempt was made to incorporate the spirit of the original building in the new center, such as the use of similar materials, and especially the rows of recessed windows with protruding concrete sills. The new Pfc. John Quinta--Pvt. Arthur Gamelin Reserve Center is typical of reserve center expansions in terms of the continuity in the use of materials, and functional design.

HISTORICAL SIGNIFICANCE *(continued)*

The United States Army Reserve (USAR) is a Federal military organization distinct from the full-time, professional Regular Army and the state National Guard. The USAR is maintained as a source of personnel to rapidly support the Regular Army in the event of conflict. The USAR is composed of "citizen-soldiers," civilians committed to a period of duty in exchange for benefits and pay. The history of the USAR has been characterized by conflict between the Regular Army, U.S. Presidents, and Congress over the combat role and funding of the USAR. This conflict resulted in early difficulties in reaching projected goals for equipment, facilities, and utilization. The USAR has its origins in the Colonial state militia, informally trained citizens organized against the British Army during the Revolution. The modern USAR has its roots in the Medical Act of 1908, which started a reserve force of medical officers. Distinct organizations of reserve officers and regulars participated in World War I. During the 1930s, the Works Projects Administration provided reserve officers with the opportunity to run Civilian Conservation Corps camps.

The USAR also sent soldiers into combat during World War II. The postwar period was a time of change for the USAR, as emerging Cold War defense philosophy called for a larger reserve force to augment the Regular Army. Reliance on nuclear detente during the Cold War drew attention away from the development of the USAR, and reduced its effectiveness in the Korean War. The USAR was not a major participant in the Vietnam Conflict, as President Lyndon Johnson anticipated the negative political implications of USAR mobilization for an unpopular war. Under Nixon's 1970 Total Force policy, the USAR was made an all-volunteer force with an increased combat role and increased benefits and pay. Overall, USAR equipment and facilities have been increased since World War II. These gains have been vital for USAR units in reaching unit size and readiness requirements.

The USAR remains an active element in the U.S. military establishment. In the event of mobilization, USAR units are assimilated into the Regular Army to provide service and support. Army reservists today are required to attend forty-eight 4-hour drills per year at a Reserve Center, where Army training staff instruct them in procedure and the use of equipment, and one 15-day intensive summer training camp. Military training personnel of the 98th Training Division are stationed at New England reserve centers to provide instruction. USAR activities in New England and New York are controlled by the 94th Regional Support

Command (RSC) headquartered at Fort Devens, Massachusetts.

Prior to the end of World War II, defense policy makers were already planning for the Cold War. Defense plans called for an increased role for the Army Reserve, which was to augment the Regular Army in times of national emergency. The Army Reserve lacked proper facilities for training and equipment after World War II, and reserve units could not be activated without them. The War Department recommended that the Federal Government appropriate funds for armory (reserve center) land purchases and construction. This appropriation required Congressional approval, and in May 1946, H.R. 5762, a bill for armory construction funds was introduced into Congress. This bill failed due to disagreements over funding allocation and property ownership, as did six other pieces of legislation introduced over four years. On September 11, 1950, the 81st Congress passed H.R. 8594, the National Defense Facilities Act, which gave the reserve components $250 million for construction over five years. This bill was amended in 1955, allocating another $25 million for reserve construction.

During this period the reserve components were developing the new reserve center concept. Proposed facility criteria and specifications were collected from numerous military agencies, and approved by the Secretary of Defense. From this information sketches and models were made by the Corps of Engineers, and reviewed by the parties involved. From the resulting comments the Corps of Engineers developed construction criteria, and finished drawings were made by selected outside architects and engineers such as Reisner & Urbahn. Reisner & Urbahn were known by the Corps of Engineers for successful work with National Guard armory design, and were awarded the commission for the New England reserve centers after funding was insured by passage of the National Defense Facilities Act. Due to similar facility needs the reserve center program was overseen by the National Guard Bureau. Designers recognized that due to changing military tactics and technology, instruction space would take precedence over the traditional drill hall in the new architectural environment they were designing. Other requirements included storage space and offices. The reserve centers were typically constructed using inexpensive materials, were devoid of ornamentation, and were designed to blend into their architectural surroundings. Standardization was important for construction efficiency and was key to facilitating the expansible nature of the design, which allowed for additional wings to be added to increase the capacity of the reserve center. The bulk of the Reisner & Urbahn reserve centers were constructed in the mid-1950s, particularly after the additional funds acquired by the amendment of the National Defense Facilities Act in 1955. The Reisner & Urbahn New England reserve center campaign ended in 1964, with 23 reserve centers constructed. After this large commission, reserve facility policy shifted to the utilization of existing defense facilities. This facility was built on 5.3 acres purchased from the Town of Bristol for $7,700.00 on September 4, 1956. The facility is a non-contributing element within the Poppasquash Farms National Register Historic District.

The function of this reserve center is to provide administrative, classroom, maintenance, and storage space to Army Reserve personnel and assigned Army Reserve units. The reserve center serves as a base of operations for specialized units that can be mobilized and assimilated into the Regular Army when required. At the reserve center, assigned Army Reserve units receive advanced individual training in the use of military equipment, weapons, tactics, and vehicles. In the event of mobilization with a draft, U.S. Army training instructors stationed at the reserve center are deployed to conduct basic training of draftees. Military instruction at the reserve center takes place in the classrooms and in the drill hall, which is used for general assemblies and drill practice and can accommodate large military vehicles. A kitchen is also associated with the drill hall. Administrative office space is provided for full-time unit support personnel, including the Facility Manager, who is responsible for the day-to-day operation and maintenance of the facility; and the Unit Administrator, who is responsible for unit personnel, pay, promotion, and supply. In the event that the assigned reserve units are mobilized, the reserve center also provides home support

for the units. The reserve center also serves as an Army Reserve recruiting center.

This maintenance shop is a motor vehicle garage used by reserve center personnel for routine periodic maintenance and storage of smaller assigned unit vehicles. Tasks performed at the maintenance shop include oil changes, lubrication, battery filling, light running repairs, and minor maintenance such as tire changing, replacement of light bulbs, and minor painting, tuning and washing. Heavier repairs are performed at a centralized regional Area Maintenance Support Activity (AMSA) facility which is discussed on a separate form. The maintenance shop is now also used for unit equipment storage, with most assigned unit vehicles stored outdoors.

BIBLIOGRAPHY and SOURCES *(continued)*

Crossland, Richard B. and James T. Currie
1984 *Twice the Citizen: A History of the United States Army Reserve, 1908-1983.* Office of the Chief, Army Reserve, Washington, D.C.

Douglas, George, Facility Manager
1995 Interview with Matt Kierstead, Bristol, Rhode Island, March 14, 1995.

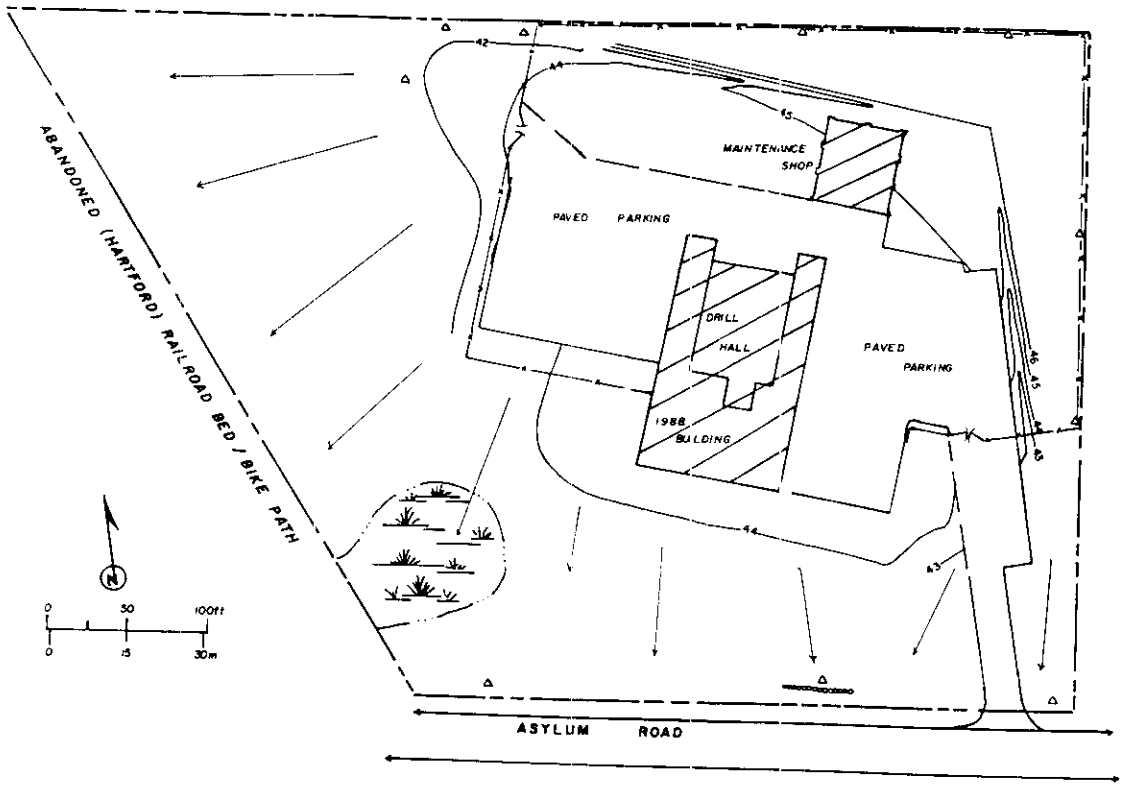
Fort Devens
1995 Real Property Files

Pfc. John Quinta--Pvt. Arthur J. Gamelin U.S. Army Reserve Center, Bristol, Rhode Island.
1995 Facility Files

Urbahn, Max
1995 Interview with Matt Kierstead, Pawtucket, Rhode Island, May 17, 1995.

Warren, Elizabeth S.
1980 *National Register of Historic Places Inventory--Nomination Form for the Poppasaquash Farms Historic District.* Rhode Island Historical Preservation Commission, Providence, RI.

SITE PLAN OF THE PRIVATE FIRST CLASS JOHN QUINTA--PRIVATE ARTHUR GAMELIN USARC



DEPARTMENT OF THE ARMY
HEADQUARTERS, 94TH U.S. ARMY RESERVE COMMAND
ARMED FORCES RESERVE CENTER
HANSCOM A.F.B., MASSACHUSETTS 01731-5290

REPLY TO
ATTENTION OF:

AFRC-AMA-EN (200-1) 21 June 1994

MEMORANDUM FOR COMMANDER, UNITED STATES ARMY RESERVE COMMAND
ATTENTION: AFRC-ENS-E (Mr. Stan Mitchell)

Subject: U.S. Army Reserve Environmental Compliance Assessment System (ECAS) Report - Draft Corrective Action Reports

1. Enclosed is the ECAS Draft Corrective Action Report for the Quintan-Gamelin USARC, Bristol, RI.

2. Our staff will continue to work with the facility personnel to ensure corrective actions are completed. POC is Mr. Gary W. Puryear at (617) 377-4601.

FOR THE COMMANDER:

GARY W. PURYEAR
LTC, EN, USAR
Acting Deputy Chief of Staff
for Engineering

Enclosure

ENVIRONMENTAL COMPLIANCE ASSESSMENT SYSTEM
FINAL ECAS REPORT

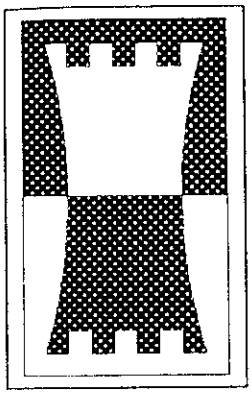
Quintan-Gamelin
United States Army Reserve Center
FFID: RI-21041APO7

94th ARCOM

Asylum Road
Bristol, Rhode Island 02809-1221
Site Visit: 4 December, 1992

Prepared by 416th ENCOM
Fort Devens Facility Engineer Team

Reviewed by:	**Approved by:**	**Authorized by**
05/17/94	21 Jun 94	
Craig Kelley Date	Peter W. Clegg Date	Max Baratz Date
94th ARCOM	Major General, USAR	Major General, USA
Environmental Mgr.	Commander	Acting Commander



416TH ENCOM
Ft. Devens, MA

DRAFT FINDINGS REPORT
ENVIRONMENTAL COMPLIANCE ASSESSMENT FOR ARMY RESERVES

(ECAAR)

Quintan-Gamelin
United States Army Reserve Center
Asylum Road
Bristol, Rhode Island
FFID: RI-21041AP07
Site Visit: 4 December 1992

Prepared by:
416th Engineer Command
Fort Devens Facility Engineer Team

ECAAR Protocol Manual Version Dated June 1991 were used in the preparation of this report.

This document contains information EXEMPT FROM MANDATORY DISCLOSURE under FOIA.

FOR OFFICIAL USE ONLY

16 July 1993

- DRAFT -

Facility Mgr (AFZD-EM/26 Jul 93) (200-1) 1st End GS7 Douglas/jad/253-3150
SUBJECT: Environmental Compliance Assessment Report

Facility Manager, Quinta-Gamelin, US Army Reserve Center, Asylum Road, Bristol, RI 02809-1221 1 Dec 93

FOR HQ, Fort Devens, ATTN: Mr John Delcore, Fort Devens, MA 01433-5190

1. Enclosed find ECAAR for this USAR Center with corrections and copies of memorandums and work orders needed to bring this USAR Center into compliance.

2. The 76th Division reorganized its Rhode Island units effective 1 August 1993. Full time personnel were moved on 12 September 1993. I reported for duty at this facility on 20 September 1993 after I assisted with the move of my former unit to Narragansett, Rhode Island. I was informed by the previous facility manager that this report was not done before the reorganization.

3. It has been difficult to complete as the battalion has just been reorganized and my unit administrator duties have been extremely time consuming; however, with the assistance visit from your office I was able to speed up the process.

4. I feel that we are on the right track to be well on the way to getting this facility into environmental compliance.

5. It should be noted that the current Center Commander had no knowledge of this report until I brought it to his attention.

6. POC: Mr. George A. Douglas, DAC, GS-7, Facility Manager (401) 253-3150

Encl
as

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

DEPARTMENT OF THE ARMY
HEADQUARTERS FORT DEVENS
FORT DEVENS, MASSACHUSETTS
01433-5190

REPLY TO
ATTENTION OF

S: 31 August 1993

AFZD-EM (200-1)

26 July 1993

MEMORANDUM FOR Quinta--Gamelin, US Army Reserve Center, Asylum Rd., Bristol, RI 02809-1221

SUBJECT: Environmental Compliance Assessment Report

1. Enclosed are the findings of an Environmental Compliance Assessment which was conducted at your facility. Please respond by 31 August 1993, in writing, as to what actions have or will be taken to correct these findings.

2. Point of contact is Mr. Keith Girouard, alternate is Mr. John Delcore, Environmental Management Office, Box 19, Fort Devens, MA 01433-5190, extension 3784.

Encl

For RICHARD D. DOTCHIN
LTC, QM
Installation Environmental
Management Officer

DEPARTMENT OF THE ARMY
416TH ENGINEER COMMAND
ENGINEER SUPPORT GROUP-EAST
BUILDING 2212
FORT MEADE, MD 20755-7800

AFRC-ENIL-FE-F (200-1) 18 July 1993

MEMORANDUM FOR COMMANDER, FORT DEVENS, ATTN: AFZD-DPW, FORT DEVENS, MA 01433

SUBJECT: Corrective Action Plan for Draft Environmental Compliance Assessment Report for USAR Center, Bristol, RI

1. Reference: Memorandum, FCEN-CED-E, FORSCOM, 5 Mar 92, Subject: Environmental Compliance Assessment Army Reserve (ECAAR) Program Reporting Requirements (Encl 1).

2. The Fort Devens Team of the Fort Meade Engineer Support Group-East, 416th Engineer Command, conducted an assessment visit at the subject facility on 4 Dec 92 and prepared a draft report (Encl 2).

3. The Engineer Support Group-East is forwarding the report for action involving the preparation of a corrective action plan. Reference 1, paragraph 3b indicates that the Supporting Installation originates this plan. The enclosed report contains suggested corrective actions, which is in accordance with 416th Engineer Command policy to assist the Supporting Installation in preparing the Corrective Action Plan. Request you prepare the Corrective Action Plan and forward the completed plan, in automated and paper copies, to the Fort Meade Engineer Support Group-East.

4. Upon receipt of the Corrective Action Plan, the Fort Meade Engineer Support Group-East will assemble a complete draft report and forward it to FORSCOM with copies to HQ, Fort Devens, the 94th Army Reserve Command, the 76th Division (TNG), and the USAR Center.

5. The POC for report details is LTC Norman L. Bushee, Fort Devens Team Leader, (508) 840-8178 or 840-8393. The POC for report processing by the Engineer Support Group-East is MAJ Ed Irish. The

POC for general communications with the Engineer Support Group-East is SFC Mable Coleman, (301) 677-9733.

2 Encl

PHILIP E. PRISCO
COL, EN
Director

CF:
Commander, 94th Army Reserve Command, ATTN: AFDA-ACC-EN, Engineer Officer, Building 1607, Hanscom AFB, Bedford, MA 01731-5290
Commander, 76th Division (TNG), ATTN:AFKA-GCA-EN, Engineer Officer, 700 South Quaker Lane, West Hartford, CT 06110
Facility Manager, Quintan-Gamelin USARC, Asylum Road, Bristol, RI 02809

Compliance Assessment Ranking Report
Quinta-Gamelin US Army Reserve Center
Bristol, Rhode Island

Number of Scores per Level

Regulatory Compliance

Level 5	0
Level 4	1
Level 3	6
Level 2	1
Level 1	0

Environmental Impacts

Level 5	1
Level 4	1
Level 3	0
Level 2	1
Level 1	5

Regulatory Compliance Issues

Level 5

None

Level 4

1. There are no records in the facility's files indicating that the new 3,000 gallon tank has been registered with the RIDEM nor is there written approval in the facility's files from the RIDEM for the construction of the 3,000 gallon tank.

Level 3

1. The facility must conduct a waste determination of the old paint, pesticides and other materials prior to disposal to determine if the waste is hazardous. The facility must apply for a temporary EPA Identification Number prior to disposal as hazardous waste.

2. All USTs must be maintained and operated by trained personnel in compliance with applicable regulations. Facility personnel and a records review did not indicate personnel received training in accordance with Appendix B of Rhode Island's UST Regulations.

3. The petrometer for the 1,000 gallon tank has not been calibrated for accurate readings. Additionally, there were no records in the facility's files pertaining to the proper operation, warranties or maintenance requirements of the system.

5. Review of the facility files did not reveal a log or any other written documentation indicating that either tank is gauged prior to receiving product.

6. There is no documentation in the facility records stating that the facility is not using high sulfur fuel.

Level 2

1. The 3,000 gallon tank is equipped with a petrometer tank level meter; however, the maximum capacity reading of the meter is 2,500 gallons. The maximum capacity reading does not satisfy the volumetric capacity of the tank.

Level 1

None

Environmental Impact Issues

Level 5

1. A wash rack is located on the west side of the maintenance shop at the reserve center; however, it does not appear on any of the blueprints. According to Lieutenant Col. Diehl the wash rack is equipped with an interceptor, but this information could not be verified. Close examination of the sump area resulted in a pungent diesel odor.

Level 4

1. Stressed vegetation was observed on the north side of the maintenance shop. A request was made on March 31, 1989 to have a site investigation performed to determine the cause of the stressed vegetation. Facility personnel indicated that drums of waste automotive products were once stored at the location.

Level 3

None

Level 2

1. A new 3,000 gallon tank was installed at the subject facility; however, there were no blueprints or other documentation in the facility's files pertaining to the new tank. Therefore, it was not possible to determine if the facility is in compliance with applicable regulations.

Level 1

1. Asbestos was observed on some of the pipes in the maintenance shop.

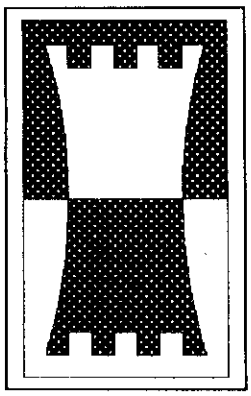
2. According to facility personnel the new septic system has not been cleaned since it was installed in 1988.

3. There is a small amount of DS-2 on-site which will require disposal.

4. A 5-gallon bucket filled with a chemical training agent set was found in a storage cabinet in Room 135. Markings on the drum indicate that the material was packaged in 1979 and contains corrosive materials. Facility personnel did not know if the materials were still being used.

5. Four smoke bombs were found in Office 118, posing a fire hazard.

SECTION 4
MANAGEMENT FINDINGS
(HEALTH/SAFETY, POSITIVE, and CATEGORY III)



416TH ENCOM
Ft. Devens, MA

DRAFT FINDINGS REPORT ENVIRONMENTAL COMPLIANCE ASSESSMENT FOR ARMY RESERVES

(ECAAR)

Quintan-Gamelin
United States Army Reserve Center
Asylum Road
Bristol, Rhode Island
FFID: RI-21041AP07
Site Visit: 4 December 1992

Prepared by:
416th Engineer Command
Fort Devens Facility Engineer Team

ECAAR Protocol Manual Version Dated June 1991 were used in the preparation of this report.

This document contains information EXEMPT FROM MANDATORY DISCLOSURE under FOIA.

FOR OFFICIAL USE ONLY

18 July 1993

- DRAFT -

TABLE OF CONTENTS

Acronym and Abbreviation List

CAA	-	Clean Air Act
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	-	Code of Federal Regulations
CWA	-	Clean Water Act
DEH	-	Directorate of Engineering and Housing
DMR	-	Discharge Monitoring Report
DOD	-	Department of Defense
DOT	-	Department of Transportation
ESA	-	Endangered Species Act
EPA	-	Environmental Protection Agency
ECAAR	-	Environmental Compliance Assessment - Army Reserve
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
FWS	-	Fish and Wildlife Service
ICUZ	-	Installation Compatibility Use Zone
IOSC	-	Installation On-Scene Coordinator
IRT	-	Installation Response Team
MP	-	Management Practice
MSDS	-	Material Safety Data Sheet
MUSARC	-	Major United States Army Reserve Command
NAAQS	-	National Ambient Air Quality Standards
NEPA	-	National Environmental Policy Act
NFPA	-	National Fire Protection Association
NHPA	-	National Historic Preservation Act
NPDES	-	National Pollution Discharge Elimination System
OMS	-	Organizational Maintenance Shop
OSHA	-	Occupational Safety and Health Administration
PCB	-	Polychlorinated biphenyl
POL	-	Petroleum Oil and Lubricants
POTW	-	Publicly Owned Treatment Works
PPM	-	Parts Per Million
RCRA	-	Resource Conservation and Recovery Act
SARA	-	Superfund Amendments and Reauthorization Acts
SCP	-	Spill Contingency Plan
SDWA	-	Safe Drinking Water Act
SHPO	-	State Historic Preservation Officer
SPCCP	-	Spill Prevention, Control and Countermeasure Plan
TCLP	-	Toxic Constituents Leaching Procedure
TSCA	-	Toxic Substances Control Act
TSDF	-	Treatment, Storage, and Disposal Facility

USAR	-	United States Army Reserve
USARC	-	United States Army Reserve Center
UST	-	Underground Storage Tank
VOC	-	Volatile Organic Compound

Glossary of Terms

Category I Finding:

Noncompliance with an existing environmental regulation, compliance agreement, or consent order. These may stem from federal, state, or local requirements.

Category II Finding:

Noncompliance with a future deadline in an environmental regulation, compliance agreement, or consent order. These may stem from federal, state, or local requirements.

Category III Finding:

Findings based on management practices that are not based on regulatory requirements. These include findings based on Army Regulations and DOD directives. Category III findings may be positive or negative.

Health and Safety Findings:

Findings related to OSHA, DOT, and NFPA as indicated in the criteria paragraph of the finding and in the requirements column in the ECAS protocol. Health and Safety findings may be regulatory but are not part of the RCS 1383 reporting process and are not eligible for any environmental funding. Health and Safety findings are not classified as I, II, or III.

CHAPTER 1

EXECUTIVE SUMMARY

This draft findings report presents the results of the environmental compliance assessment conducted by the 416th Engineer Command's Fort Devens Facility Engineer (FE) Team at the Quintan-Gamelin USAR Center in Bristol, Rhode Island on 4 December 1992. The assessment was done in accordance with the U.S. Army's Environmental Compliance Assessment System (ECAS). The purpose of this report is to identify environmental compliance problems to the chain of command and identify alternative corrective actions. This report is intended to provide sufficient information for the chain of command to make informed choices on the appropriate corrective actions for its findings. In particular, it is expected that the Support Installation Commander, through his DEH staff, and the ARCOM/MUSARC commander will coordinate the selection of these actions. After their review of this Draft Findings Report (DFR), the resultant corrective actions that address all compliance deficiencies are to be communicated to the 416th FE team. The FE team will prepare a draft final report containing these corrective actions. The draft final report will then be forwarded to the MACOM for coordination and approval. Concurrent copies will be provided to the Support Installation and the ARCOM/MUSARC.

This Environmental Compliance Assessment has reviewed reserve center activities and conditions. It provides a "snapshot in time" of the center's compliance posture. It does not give any guarantee that a regulator will not find other compliance deficiencies. Instead, it identifies weak areas and a means to correct them without the pressure of a regulatory inspection. ECAS is a proactive program which reviews 17 environmental media listed in Table 1-1 and helps the chain of command identify the resources necessary to bring the reserve center into environmental compliance. Along with corrective actions identified by the chain of command, the FE team may assist in developing the necessary resource documents (RCS 1383 exhibits, DA 4283s, and DD 1391s) to feed existing Army resource systems.

1.1 BACKGROUND

An environmental assessment of the USAR Center was conducted on 4 December 1992 by a team of professionals from the Fort Devens Team of the 416th Engineer Command under the direction of LTC Howard C. Dunn, Jr. The assessment was conducted as a part of the Army's environmental review program using the Environmental Compliance Assessment Army Reserve (ECAAR) protocols. The ECAAR protocols, developed by the Department of the Army, establishes the use of environmental assessments to ensure compliance with all applicable US Federal, state, local, Department of Defense (DoD), and Army environmental regulations.

An overall ECAAR evaluation considers the major environmental compliance protocols or areas pertinent at the facility examined. Each area identifies several items: key legislation,

compliance concerns typical of state/local regulations, DoD and Army regulations, plus management practices. The applicability of each area is determined in advance of the evaluation from information provided by facility personnel. Each protocol is annotated to reflect the most current regulations in effect prior to the evaluation.

This evaluation was conducted using the ECAAR manual dated June 1991 and considered 17 protocols:

1. Clean Air Act (CAA)
2. Clean Water Act (CWA)
3. Safe Drinking Water Act (SDWA)
4. Resource Conservation and Recovery Act, Subtitle C, (RCRA-C)
5. Resource Conservation and Recovery Act, Subtitle D,(RCRA-D)
6. Resource Conservation and Recovery Act, Subtitle I, (RCRA-I) and POL Management
7. Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Acts (CERCLA/SARA)
8. Toxic Substance Control Act (TSCA)
9. Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
10. National Historic Preservation Act (NHPA) and Cultural Resources
11. Endangered Species Act (ESA) and National Resources
12. National Environmental Policy Act (NEPA)
13. Asbestos Management Program
14. Noise Abatement
15. Radon Program
16. Environmental Program Management
17. Hazardous Materials Management

This assessment was conducted by:

LTC Howard C. Dunn, Jr.
MAJ Michael Haire
MAJ Douglas Garner
SFC Bobby Griffis
SFC Stanley Pierce
SSG Michael Hicks
SSG Carl Shoemaker

1.2 SUMMARY OF FINDINGS

The following text briefly summarizes the findings for each compliance protocol. The protocols are discussed in the order that they appear in the report.

1.2.1 Clean Air Act (CAA)

There were no category I or category II findings in this protocol. There were two (2) category III findings. There was no evidence that an emissions inventory had been conducted, and there was no evidence of a CFC & Halon annual report. There were no Health and Safety findings in this protocol.

1.2.2 Clean Water Act (CWA)

There were two (2) category I findings in this protocol. The facility did not have valid SPCCP or ISCP. The facility also does not have containment for oil stored in the boiler room or for the underground storage tanks. There were no category II findings. There were five (5) category III findings. There is no evidence that there is a system to investigate water pollution complaints. There is no oil/water separator for the washrack. There is no Installation On-Scene Coordinator or Installation Response Team. One category III finding relates to missing documentation, and one relates to the lack of safety evaluations/hazardous waste inspections. There were no Health and Safety findings.

1.2.3 Safe Drinking Water Act (SDWA)

There were no category I findings. There were two (2) category III findings in this protocol relating to the lack of a testing/inspection program for the backflow prevention valve on the boiler make-up water line, and missing documentation of water system modifications. There were no category II or Health and Safety findings.

1.2.4 Resource Conservation and Recovery Act, Subtitle C (RCRA-C)

There were two (2) category I findings in this protocol. There were several unlabelled containers of hazardous waste, and hazardous waste accumulation area was not being regularly inspected. There were no category II findings in this protocol. There were two (2) category III findings in this protocol relating to the lack of a Hazardous Waste Management Plan and no annual hazardous waste inventory. There were no Health and Safety findings.

1.2.5 Resource Conservation and Recovery Act, Subtitle D (RCRA-D)

There were no category I, category II, category III, or Health/Safety findings in this protocol.

1.2.6 Resource Conservation and Recovery Act, Subtitle I (RCRA-I) and POL Management

There were two (2) category I findings in this protocol. They related to the UST system not having proper overfill or spill protection, and no UST registration. There were no category II findings. There was one (1) category III finding, concerning the lack of proper release detection systems and substandard UST's. There were no Health and Safety findings.

1.2.7 Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Acts (CERCLA/SARA)

There were no category I, or category II findings in this protocol. There was one (1) category III finding in this protocol. The facility has not been screened for past use of hazardous substances and the potential for contamination, especially since a portion of the site is suspected to have been used as a landfill in the past. There were no Health and Safety findings in this protocol.

1.2.8 Toxic Substance Control Act (TSCA)

There was one (1) category I finding in this protocol. There were no PCB labels found on the main pad-mounted electrical transformer. There were no category II, category III, or Health and Safety findings.

1.2.9 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

There were no category I, category II, category III, or Health and Safety findings.

1.2.10 National Historic Preservation Act (NHPA) and Cultural Resources

There were no category I, category II, category III, or Health and Safety findings.

1.2.11 Endangered Species Act (ESA) and Natural Resources

There were no category I, category II, category III, or Health and Safety findings.

1.2.12 National Environmental Policy Act (NEPA)

There were no category I or category II finding in this protocol. There was one (1) category III finding relating to implementing NEPA requirements. There were no Health and Safety findings.

1.2.13 **Asbestos Management Program**

There were no category I or category II findings in this protocol. There was one (1) category III finding relating to suspected asbestos insulation in the OMS building that may need to be removed. There were no Health and Safety findings.

1.2.14 **Noise Abatement**

There were no category I or category II findings in this protocol. There was one (1) category III finding. The facility requires an Installation Compatible Use Zone (ICUZ) study. There were no Health and Safety findings.

1.2.15 **Radon Program**

There were no category I or category II findings in this protocol. There was one (1) category III finding. The facility needs to be tested for radon. There were no Health and Safety findings.

1.2.16 **Environmental Program Management**

There were no category I or category II findings in this protocol. There were two (2) category III findings. Assistance is required from the Supporting Installation in environmental projects programming (1383 reports) and training of site personnel. Many relevant environmental regulations were not available at the facility. There were no Health and Safety findings.

1.2.17 **Hazardous Materials Management**

There were no category I or category II findings in this protocol. There was one (1) category III finding, which related to the lack of a listing of hazardous materials. There were three (3) Health and Safety findings. Material Safety Data Sheets are not available for each chemical used at the facility, and chemicals were improperly stored.

TABLE 1-1
SUMMARY OF FINDINGS

INSTALLATION: QUINTAN-GAMELIN USARC Fiscal Year: 1993
FFID: RI-21041AP07

SECTION NO.	TITLE	CATEGORY =	REGULATORY 1	REGULATORY 2	REGULATORY HS	MANAGEMENT POS	MANAGEMENT 3	MANAGEMENT HS
1	Clean Air Act		0	0	0	2	0	0
2	Clean Water Act		2	0	0	5	0	0
3	Safe Drinking Water Act		0	0	0	0	2	0
4	Resource Consv. and Rec. C		2	0	0	0	2	0
5	Resource Consv. and Rec. D		0	0	0	0	0	0
6	Resource Consv. and Rec. I		2	0	0	0	1	0
7	Comp. Environ. Response		0	0	0	0	1	0
8	Toxic Substances Control Act		1	0	0	0	0	0
9	Fed. Insect., Fung., and Rod.		0	0	0	0	0	0
10	National Historic Pres. Act		0	0	0	0	0	0
11	Endangered Species Act		0	0	0	0	0	0
12	National Environmental Policy		0	0	0	0	1	0
13	Asbestos Management Program		0	0	0	0	1	0
14	Noise Abatement		0	0	0	0	1	0
15	Radon Program		0	0	0	0	1	0
16	Environmental Program Mgmt.		0	0	0	0	2	0
17	Hazardous Materials Mgmt.		0	0	3	0	1	0
		TOTALS	7	0	3	0	20	0

Data File Name Prefix: C:\ECAS\BRISTL
Date Summary Report Produced: 06/28/93

CHAPTER 2

BACKGROUND AND SCOPE

This section presents the background and scope for the environmental compliance assessment conducted at the Quintan-Gamelin USARC, Bristol, RI.

2.1 BACKGROUND

The background section presents the objectives of the ECAAR program, a description of the facility and its management structure.

ECAAR Objectives

The objectives of ECAAR are to:

- establish the use of environmental compliance assessments as a means of ensuring the Army's compliance with all applicable DoD and Army environmental laws and regulations.

- assure major commands, facility commanders, environmental quality control committees, environmental coordinators, DEH personnel, and natural resource managers that their environmental programs are effectively addressing environmental problems that could:

  - impact mission effectiveness
  - jeopardize the health of facility personnel or the general public
  - significantly degrade the environment
  - expose the Army and its people to avoidable financial liabilities as a result of non-compliance with environmental requirements
  - erode public confidence in the Army and the defense establishment
  - expose individuals to civil and criminal liability.

- secure information that will permit facility commanders to anticipate and prevent future environmental problems.

- enhance management by establishing a system for environmental compliance management

- provide data for use in identifying, programming, and budgeting environmental requirements

- provide accurate and complete information on the status of facility environmental compliance programs.

Facility Description

The Quintan-Gamelin USARC is located on Asylum Road in Bristol, Rhode Island. The facility is situated on approximately 5.3 acres of land. It is abutted on three sides by Colt State Park. To the south is a residential area. The main building and a 2-bay Organizational Maintenance Shop (OMS) were constructed in 1957, and renovated/expanded in 1985. The Reserve Center and OMS are single story buildings of masonry construction. The Center building contains approximately 13,424 square feet of space. The OMS is now used for unit storage and is no longer used for vehicle maintenance. A room within the OMS is referred to as the Paint Shed and is used to accumulate hazardous wastes.

The real property holder and supporting installation is Fort Devens, Massachusetts. The using MUSARC is the 76th Division (TRNG). The units and members of assigned personnel using the facility are as follows:

USAR Unit	Assigned Personnel
1st Bn 76th Regt, 4th Bde, 76th DIV.	94

There are 2 full time ~~military and~~ civilian personnel assigned to the center.

Management Structure

Management of the environmental mission is a shared responsibility led by the Facility Manager and Unit Commanders. We found that most of the environmental categories covered during the ECAAR review are principally managed by the Fort Devens Environmental Management Office (EMO), the 94th ARCOM, and the 76th Division (Training) Engineer staff.

Hazardous Materials Management issues are implemented by several organizations including the Directorate of Engineering and Housing, the Fire Department, and the individual units that store and use hazardous materials.

The facility Commander and his staff are responsible for implementing site specific requirements under direction of their higher headquarters.

2.2 SCOPE

The scope section summarizes the facility activities that were reviewed for each environmental category, and the evaluation process.

Activity Review

2.2.1 Clean Air Act (CAA)

The air emission sources reviewed included the following:

- Facility records
- Facility drawings

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.2 Clean Water Act (CWA)

The water pollution sources reviewed included the following:

- Floor drains
- Unit storage areas
- Storm drainage system
- Facility records
- Facility drawings

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.3 Safe Drinking Water Act (SDWA)

The sources reviewed included the following:

- Potable water system
- Boiler make-up water system
- Facility records
- Facility drawings

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.4 Resource Conservation and Recovery Act, Subtitle C (RCRA-C)

The RCRA-C areas reviewed included the following:

- Facility records
- Unit storage areas

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.5 Resource Conservation and Recovery Act, Subtitle D (RCRA-D)

The RCRA-D areas reviewed included:

- Contract documents for solid waste removal
- Solid waste collection areas

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.6 Resource Conservation and Recovery Act, Subtitle I (RCRA-I) and POL Management

The RCRA-I areas reviewed included the following:

- Facility underground storage tanks
- Facility records
- Facility drawings

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.7 Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Acts (CERCLA/SARA)

The CERCLA/SARA areas reviewed included the following:

- Facility records
- Facility drawings

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.8 Toxic Substance Control Act (TSCA)

The TSCA areas reviewed included the following:

- Main building
- Exterior electrical transformers
- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.9 Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

The FIFRA areas reviewed included the following:

- Main building
- Fence/property line
- Parking lots
- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.10 National Historic Preservation Act (NHPA) and Cultural Resources

- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.11 Endangered Species Act (ESA) and Natural Resources

- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.12 National Environmental Policy Act (NEPA)

- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

2.2.13 Asbestos Management Program

The Asbestos Management Program areas reviewed included the following:

- Facility buildings
- Facility records

In addition, the Facility Manager was interviewed.

2.2.14 Noise Abatement

The Noise Abatement areas reviewed included the following:

- Facility buildings
- Facility records

In addition, the Facility Manager was interviewed.

2.2.15 Radon Program

The Radon Program areas reviewed included the following:

- Facility buildings
- Facility records

In addition, the Facility Manager was interviewed.

2.2.16 Environmental Program Management

The Environmental Program Management areas reviewed included the following:

- Facility records

In addition, the Facility Manager was interviewed.

2.2.17 Hazardous Materials Management

The Hazardous Materials Management areas reviewed included the following:

- Storage areas
- Facility records

In addition, the Facility Manager was interviewed and all buildings and grounds examined.

Applicable Regulations

The ECAAR manual and the regulations of the State of Rhode Island were used as the basis for the environmental assessment of the Quintan-Gamelin USARC. All compliance standards used as the basis for this report were drawn from the aforementioned documents.

Evaluation Procedures

The environmental assessment included a review of facility environmental documentation and inspection of the facility by the assessment team. Personnel interviews were used to provide information. No physical samples were collected at the facility.

SECTION 3
REGULATORY FINDINGS
(CATEGORY I, II, and HEALTH/SAFETY)

2-17.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 02-017 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The unit does not have a valid SPCCP or ISCP. Unit stores petroleum (heating oil) in UST. Unit sent plan to Ft. Devens and is awaiting finalized plan.

CRITERIA: Army installations that store, transport, or dispense petroleum products are required to prepare, according to guidelines, a SPCC Plan and an ISCP. (40 CFR 112.3(a), 112.7, DoD Directive 5030.41, para. D, AR 200-1, para. 8-4, and para. 8-5a through 8-5c)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Ft. Devens EMO/MUSARC
should finalize the ISCP and SPCCP.

STATUS OF CORRECTION: Draft Copy of Plan at Fort Devens

REVIEWER'S COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

DEC '93

NAME: _____

2-26.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 02-026 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: BOILER ROOM
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No containment found for motor oil being stored near the floor drain in the boiler room.

CRITERIA: Appropriate containment diversionary structures, and cleanup equipment to prevent discharged petroleum products from reaching navigable water course is to be readily available on the installation. (40 CFR 112.7(c), and AR 200-1, para. 8-2)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit a work order request to plug the drain, or have this done via Form 44 funding or through the mechanical contractor.

STATUS OF CORRECTION: Work Order #104-3 submitted to Install Removable Floor Drain Plug for Boiler Room.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

4-69.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 04-069 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO

ND PAINT SHED

ITED STATES ARMY RESERVE CENTER

ainers of hazardous waste were not labeled.
iners in the boiler room (suspected
ry container in the paint shed.

mulate as much as 55 gallons of
cutely hazardous waste in containers
ration before complying with the
specific standards are met. (40

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should obtain blank labels from EMO or MUSARC, record appropriate information on labels, and attach them to hazardous waste containers.

STATUS OF CORRECTION: EMO Visit of 8Nov93 stated that container in Boiler Room was Joint Compound Cement. EMO will provide Labels and arrange to dispose of Battery container in the paint shed

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

☆ U.S. GOVERNMENT PRINTING OFFICE: 1988—221-817

FACILITIES ENGINEERING WORK REQUEST – XFA, XFB, XFC

For use of this form, see AR 420–17 and DA Pam 420–6; the proponent agency is the Office of the Chief of Engineers.

ANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	DATE: YR	DATE: MO	DATE: DA	OTHER FUND CITATION	SHORT JOB DESCRIPTION	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BLA
E	A	DS	1014	3				93	11	26		INSTALL A REMOVABLE PLUG ON THE BOILER ROOM FLOOR DRAIN			

ANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX
E	B																		

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Install a removable Plug on Boiler Room Floor Drain

The Drain must be plugged when the Oil Burner is in Operation and removed when the Air Conditioning is in operation.

DESCRIBE WHAT WILL HAPPEN IF WORK IS NOT ACCOMPLISHED

If work is not done it will be in violation of class I environmental finding.

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
EORGE A. DOUGLAS	Bristol USARC	401-253-3150	George C. Douglas

PERSON TO CALL FOR ADDITIONAL INFORMATION

NAME	ORGANIZATION	TELEPHO

FORWARD FOR APPROVAL

APPROVING AUTHORITY	RECOMMENDED ACTION	ENVIRONMENTAL IMPACT	ESTIMATED COST	WORK TO BE PERFORMED	FROM
	☐ APPROVAL ☐ DISAPPROVAL	NO YES ☐ ☐ ENVIRONMENTAL CONSIDERATIONS ☐ ☐ EIS/EIA INITIATED ☐ ☐ EIS/EIA COMPLETED	FUNDED $ ____ WC K $ ____ WC L $ ____ WC ___ $ ____ UNFUNDED $ ____ TOTAL $ ____	☐ IN–HOUSE ☐ SELF–HELP ☐ CONTRACT ☐ TROOP	FACILITIES ENGINEER DATE

APPROVED FOR DESIGN

SIGNATURE ____ DATE ____

SOURCE OF FUNDS

☐ DIRECT
☐ AUTOMATIC REIM
☐ FUNDED REIMB.

REMARKS

APPROVAL ACTION

ANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	ACTION TAKEN	DATE: MO	DATE: DA	FORWARDED TO: DESIGN MO	FORWARDED TO: DESIGN DA	FORWARDED TO: ESTIMATOR MO	FORWARDED TO: ESTIMATOR DA
						A – APPROVED						

SIGNATURE OF APPROVAL AUTHORITY

4-74.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 04-074 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: PAINT SHED
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility manager reported that the hazardous waste accumulation area in the paint shed is not inspected on a scheduled basis.

CRITERIA: Accumulation point managers must conduct regular inspections of their facilities in accordance with written schedules and checklists (40 CFR 265.174 and 265.195 Subparts I and J).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should prepare and implement a weekly inspection of the paint shed to look for leakage and signs of deterioration of hazardous waste containers.

STATUS OF CORRECTION: System was established on 8 Nov 93 and Inspected Sheets made for weekly Inspections (Copy Attached)

REVIEWER'S COMMENTS: Also EMO will provide and assist in packing materials in Labeled Containers

NAME: _____

QUINTAN-Gamelin USARC - Week , HAZARDOUS MATERIAL CONTAINER INSPECTION

DATE	INSPECTOR	REMARKS
8/11/93	J C Cox	EMO - Inspected & Made Recommendations
15/11/93	J C Cox	Chemical Items That Could Be Twisted.
22/11/93	J C Cox	" " "

6-3.1 I ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 06-003 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There was no copy of the registration certificate for the 3000 gallon heating oil underground storage tank at the facility. Rhode Island State Regulations require that the registration certificate be kept on site. This tank was installed approximately 1988.

CRITERIA: Installations are required to comply with applicable state and local requirements (AR 200-1, para. 1-39a(3)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request assistance from EMO and MUSARC to obtain a copy of current tank registration certificate from the RI Department of Environmental Management.

STATUS OF CORRECTION: Request has been submitted to EMO for copies of current Tank Registration Certificate from RI Dept of EM

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

19 November 1993

MEMORANDUM FOR ENVIROMENTAL MANAGEMENT OFFICE, FORT DEVENS, MA 01433

SUBJECT: Request for Assistance to bring the USARC in Compliance

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that Fort Devens Environmental Management Office assist in correcting the below listed findings:

a. Request that EMO conduct or contract for an Air Pollution Emissions inventory to be conducted at this USARC.

b. Request written Hazardous Waste Management Plan from EMO to comply with finding that USARC does not have plan on file.

c. Request that EMO request a copy of current registration certificate from the RI Department of Enviromental Management.

d. Request that this Center be provided with Radon Detection Devices for installation as a self help project.

e. Request that MSDS be provided to this USARC

f. Request that records be screening for past use of Hazardous Substances at this USARC and copies furnished for our files.

2. POC: Mr. George A. Douglas, UA, GS-7

GEORGE A, DOUGLAS
DAC , GS-7
Facility Manager

6-6.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 06-006 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The two UST's at the facility do not have a spill containment or overfill protection. Both tanks are heating oil tanks. According to facility records, the 3000-gallon tank was installed in 1988 and the 1000-gallon tank installed in 1960.

CRITERIA: The filling of a UST must include the prevention of overfilling and spilling of the substance. (40 CFR 280.30(a))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should initiate a work order request to retrofit both tanks with spill containment and overfill protection devices on the tank fill pipes. Alternatively, the 1000 gallon tank (for the OMS) should be removed because heat is no longer needed in the OMS as it is used for storage only.

STATUS OF CORRECTION: Work Order #106-3 submitted for installation of Spill Containment & Overfill Protection Devices for Large 3,000 Tank and for removal of 1,000 gallon Tank.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

FACILITIES ENGINEERING W

For use of this form, see AR 420–17 and DA Pam 420–6

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	DATE: YR	DATE: MO	DATE: DA	OTHER FUND CITATION
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24	25 26	27 28	29 30 31 32 33 34 35 36 37 38 39
XFA		DS	1 0 6	3				9 3	1 1	2 6	F

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFF
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24 25 26 27 28	29 30 31	32 33 34 35 36 37	38 39
B	C										

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Refit 3,000 Oil Tank with Spill Containment & Overfill Protection Devices ; remove the 1000 gallon Tank as the OMS Building is no longer needed except Storage.

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
GEORGE A. DOUGLAS	Bristol USARC	401-253-3150	

FORWARD FOR APPROVAL

TO	RECOMMENDED ACTION	ENVIRONMENTAL IMPACT	ESTIMATED COST	WORK TO BE PERFORMED
APPROVING AUTHORITY	☐ APPROVAL ☐ DISAPPROVAL	NO YES ☐ ☐ ENVIRONMENTAL CONSIDERATIONS ☐ ☐ EIS/EIA INITIATED ☐ ☐ EIS/EIA COMPLETED	FUNDED $ ____ WC K $ ____ WC L $ ____ WC ___ $ ____ UNFUNDED $ ____ TOTAL $ ____	☐ IN-HOUSE ☐ SELF-HELP ☐ CONTRACT ☐ TROOP

APPROVAL ACTION

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	ACTION TAKEN	DATE: MO	DATE: DA	SIGNATURE OF APPROVAL AUTHORITY
1 2 3	4	5 6	7 8 9 10 11	12	13 14	A – APPROVED D – DISAPPROVED	15 16	17 18	
XFC	C								

8-4.1 I FEDERAL FINDING
MANUAL QUESTION NUMBER: 08-004 FINDING ID:
FINDING CATEGORY: CLASS I
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: TRANSFORMER PAD
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The pad mounted transformer was not labeled for PCB content.

CRITERIA: Certain equipment that contains PCBs must be marked with an ML marking. (40 CFR 761.4L and 761.45)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit a work order request to have the transformer tested for PCB contamination and properly labeled.

STATUS OF CORRECTION: Work Order #105-3 submitted to have Electrical Transformers Tested for PCB's and Properly Labeled

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

FACILITIES ENGINEERING WORK REQUEST – XFA, XFB, XFC

For use of this form, see AR 420–17 and DA Pam 420–6; the proponent agency is the Office of the Chief of Engineers.

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	SERIAL NUMBER	FY	TYPE	BUILDING/FACILITY: NUMBER	SUFFIX	DATE: YR	MO	DA	OTHER FUND CITATION	SHORT JOB DESCRIPTION	BUILDIN NUMBER
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24	25 26	27 28	29 30 31 32 33 34 35 36 37 38	39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	
XFA		DS	105	3				93	11	26		Have Electrical Transformers Tested for PCB's	

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	SERIAL NUMBER	FY	TYPE	BUILDING/FACILITY: NUMBER	SUFFIX	BUILDING/FACILITY: NUMBER	SUFFIX	BUILDING/FACILITY: NUMBER	SUFFIX	BUILDING/FACILITY: NUMBER	SUFFIX	BUILDING/FACILITY: NUMBER	SUFFIX	BUILDING/FACILITY: NUMBER
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24 25 26 27 28	29 30 31	32 33 34 35 36 37	38 39 40	41 42 43 44 45 46	47 48 49	50 51 52 53 54 55	56 57 58	59 60 61 62 63 64 65 66 67	68 69 70 71 72 73
XFB	C															

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Have Electrical Transformers Tested for PCB's and Properly Labeled

DESCRIBE WHAT WILL HAPPEN IF WORK IS NOT ACCOMPLISHED

If work is not done it will be a Class I environmental finding

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
GEORGE A. DOUGLAS	Bristol USARC	401-253-3150	Geo A Douglas

PERSON TO CALL FOR ADDITIONAL INFORMATION

NAME	ORGANIZATION	TI

FORWARD FOR APPROVAL

	RECOMMENDED ACTION	ENVIRONMENTAL IMPACT	ESTIMATED COST	WORK TO BE PERFORMED	FROM
-0	☐ APPROVAL ☐ DISAPPROVAL	NO YES ☐ ☐ ENVIRONMENTAL CONSIDERATIONS ☐ ☐ EIS/EIA INITIATED ☐ ☐ EIS/EIA COMPLETED	FUNDED $ ____ WC K $ ____ WC L $ ____ WC ___ $ ____ UNFUNDED $ ____ TOTAL $ ____	☐ IN-HOUSE ☐ SELF-HELP ☐ CONTRACT ☐ TROOP	FACILITIES ENGINEER DATE
APPROVING AUTHORITY					

APPROVED FOR DESIGN

SOURCE O

☐ DIRECT
☐ AUTOMA
☐ FUNDED

SIGNATURE DATE

REMARKS

APPROVAL ACTION

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	SERIAL NUMBER	FY	TYPE	ACTION TAKEN	DATE: MO	DA	SIGNATURE OF APPROVAL AUTHORITY	FORWARDED TO: DESIGN MO	DA	ESTIMATOR MO	DA
1 2 3	4	5 6	7 8 9 10 11	12	13 14		15 16	17 18		19 20	21 22	23 24	25 26
XFC	C					A – APPROVED D – DISAPPROVED							

ORIGINAL – PROJECT FILE COPY

GREEN – FORWARD TO KE

17-5.1 HS FEDERAL FINDING
MANUAL QUESTION NUMBER: 17-005 FINDING ID:
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Material Safety Data Sheets (MSDS) were not available at the facility for all chemicals stored at the facility.

CRITERIA: Material Safety Data Sheets (MSDS) are required for each chemical procured or stored at the installation. (29 CFR 1910.1200, AR 200-1, para. 5-1g(8)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should obtain MSDS from the Supporting Installation EMO and/or supply system, or vendors of chemical supplies.

STATUS OF CORRECTION: Request has been submitted for MSDS

RE

___ _____
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NA

___ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

19 November 1993

MEMORANDUM FOR ENVIROMENTAL MANAGEMENT OFFICE, FORT DEVENS, MA 01433

SUBJECT: Request for Assistance to bring the USARC in Compliance

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that Fort Devens Environmental Management Office assist in ccrrecting the below listed findings:

a. Request that EMO conduct or contract for an Air Pollution Emissions inventory to be conducted at this USARC.

b. Request written Hazardous Waste Management Plan from EMO to comply with finding that USARC does not have plan on file.

c. Request that EMO request a copy of current registration certificate from the RI Department of Enviromental Management.

d. Request that this Center be provided with Radon Detection Devices for installation as a self help project.

e. Request that MSDS be provided to this USARC

f. Request that records be screening for past use of Hazardous Substances at this USARC and copies furnished for our files.

2. POC: Mr. George A. Douglas, UA, GS-7

GEORGE A, DOUGLAS
DAC , GS-7
Facility Manager

17-14.1 HS FEDERAL FINDING
MANUAL QUESTION NUMBER: 17-014 FINDING ID:
FINDING CATEGORY: HEALTH/SAFETY
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Flammable/combustible materials are stored in locations that do not meet fire protection standards. Observed storage areas of flammable/combustible materials are rooms 104, 135 Mess storage, B Co. storage, Center storage, and the arms roo

CRITERIA: Storage cabinets used for the storage of flammable/combustible liquids must meet specific requiremen CFR 1910.106(d)(3))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S should procure flammable materials storage cabinet.

STATUS OF CORRECTION: A search of the above list Combustable materials in

REVIEWER'S COMMENTS: 8Nov93

NAME: _____ DATE: _____

1-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 01-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: ENTIRE SITE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence exists was found that an air pollution emissions inventory has been conducted at the facility.

CRITERIA: Each Army Reserve Facility is required to conduct and maintain an up-to-date emissions inventory listing all stationary sources of air pollution and inspect stationary air pollution sources periodically to assess compliance with applicable standards. (AR 40-5, para 11-4b(2)

FINDING COMMENTS: 2 BECKETT BURNERS
0.4 - 3.0 GPH
MODEL "A," "AF" MP1192

SUGGESTED/ALTERNATI' acility Manager
should request that the Suppo:
Management Office conduct o
inventory.

2 A O SMITH BURNERS
COF-315 · 850 > ERICS
MODEL CHASR

STATUS OF CORRECTION: onduct or Contract
entory

REVIEWER'S COMMENTS:
0.75 - 3.0 GPH

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

19 November 1993

MEMORANDUM FOR ENVIROMENTAL MANAGEMENT OFFICE, FORT DEVENS, MA 01433

SUBJECT: Request for Assistance to bring the USARC in Compliance

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that Fort Devens Environmental Management Office assist in correcting the below listed findings:

a. Request that EMO conduct or contract for an Air Pollution Emissions inventory to be conducted at this USARC.

b. Request written Hazardous Waste Management Plan from EMO to comply with finding that USARC does not have plan on file.

c. Request that EMO request a copy of current registration certificate from the RI Department of Enviromental Management.

d. Request that this Center be provided with Radon Detection Devices for installation as a self help project.

e. Request that MSDS be provided to this USARC

f. Request that records be screening for past use of Hazardous Substances at this USARC and copies furnished for our files.

2. POC: Mr. George A. Douglas, UA, GS-7

GEORGE A, DOUGLAS
DAC , GS-7
Facility Manager

1-31.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 01-031 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: ENTIRE SITE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility does not have a CFC and Halon annual report. There is a refrigeration system and an air conditioning system which may contain CFC's.

CRITERIA: Installations that use chlorofluorocarbons (CFCs) and halons must do a CFC and Halon Annual Report. (DoD Directive 6050.9)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Commander should have a CFC and Halon report prepared annually as required by DOD Dir 6050.9.

STATUS OF CORRECTION: Request has been made to DEH to assist in getting a CFC & Halon Annusl report

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

26 November 1993

MEMORANDUM FOR DEH, FORT DEVENS, MA 01433

Subject: Request for Assistance IAW ECARR performed 4 Dec 92

1. The following items were identified as a result of ECARR performed on 4 Dec 93:

a. IAW AR 200-a, para 10-3, request that an Installation Asbestos Management Plan for this installation be provided this installation.

b. Request that DEH provide this installation records of actions taken to modify water system when this installation was remodeled.

c. Request an ICUZ statement of negligible impact be prepared for this facility.

d. Request that a CFC and Halon report be prepared annually as required by DOD Dir 6050.9.

2. POC: Mr. George A. Douglas, GS-7 401-253-3150

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

2-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 02-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence exists that a system is in place to investigate water pollution complaints and allegations.

CRITERIA: Each installation is required to have a system for investigating water pollution complaints and allegations from individuals and water pollution control authorities. (AR 200-1, para. 3-3g(1) and 3-3g(2))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): Facility Manager should develop and implement a system to investigate water pollution complaints.

STATUS OF CORRECTION:

REVIEWER'S COMMENTS: This Center does not have any close dwelling, however the Bristol Police has a plan for this type of complaint and this Center would report to them for this problem.

NAME: _____ DATE: _____

2-13.1 III GMP FINDING
MANUAL QUESTION NUMBER: 02-013 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The washrack has a drain with no apparent oil/water separator, and it is possible that grease from washing of vehicles may enter soil from collection drain.

CRITERIA: Even where not covered by NPDES permit, stormwater discharge on the installation should be uncontaminated and periodic surveillance of these discharges should be completed. (GMP)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit a work order request to have an oil/water separator installed. Until an oil/water separator is installed, the washrack should not be used.

STATUS OF CORRECTION: This Unit does not have a vehicle that utilizes the Wash Rack Work Order # 101-3 has been submitted for Installation of a Oil Water Separator for this USARC.

REVIEWER'S COMMENTS:

NAME: _____ DATE: _____

☆ U.S. GOVERNMENT PRINTING OFFICE: 1988—221-817

FACILITIES ENGINEERING WORK REQUEST – XFA, XFB, XFC

For use of this form, see AR 420–17 and DA Pam 420–6; the proponent agency is the Office of the Chief of Engineers.

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	DATE: YR	DATE: MO	DATE: DA	OTHER FUND CITATION	SHORT JOB DESCRIPTION	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX
FA		DS	101	3				93	10	28		INSTALL OIL WATER SEPARATOR		

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX
FB	C																

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Install Oil Water Separator in existing outdoor wash rack.

JUSTIFICATION: This constitutes a Class 3 environmental finding.

DESCRIBE WHAT WILL HAPPEN IF WORK IS NOT ACCOMPLISHED

Grease from washing of vehicles may enter soil from collection drain.

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
GEORGE A. DOUGLAS	Bristol USARC	401-253-3150	[signature] 6B-7

PERSON TO CALL FOR ADDITIONAL INFORMATION

NAME	ORGANIZATION	TELEPH

FORWARD FOR APPROVAL

TO	RECOMMENDED ACTION	ENVIRONMENTAL IMPACT (NO / YES)	ESTIMATED COST	WORK TO BE PERFORMED	FROM
APPROVING AUTHORITY	☐ APPROVAL ☐ DISAPPROVAL	☐ ☐ ENVIRONMENTAL CONSIDERATIONS; ☐ ☐ EIS/EIA INITIATED; ☐ ☐ EIS/EIA COMPLETED	FUNDED $ ____ WC K $ ____ WC L $ ____ WC ___ $ ____ UNFUNDED $ ____ TOTAL $ ____	☐ IN–HOUSE ☐ SELF–HELP ☐ CONTRACT ☐ TROOP	FACILITIES ENGINEER ____ DATE

APPROVED FOR DESIGN

SIGNATURE ____ DATE ____

SOURCE OF FUN

☐ DIRECT
☐ AUTOMATIC REI
☐ FUNDED REIMB.

REMARKS

APPROVAL ACTION

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	ACTION TAKEN	DATE: MO	DATE: DA	FORWARDED TO: DESIGN MO	FORWARDED TO: DESIGN DA	FORWARDED TO: ESTIMATOR MO	FORWARDED TO: ESTIMATOR DA
						A – APPROVED						

SIGNATURE OF APPROVAL AUTHORITY

2-20.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 02-020 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence exists of an installation on-scene coordinator (IOSC) or an installation response team (IRT).

CRITERIA: An Installation On-Scene Coordinator (IOSC) and an Installation Response Team (IRT) must be appointed by the installation commander. (AR 200-1, para. 8-4h(12))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager/Commander should appoint an IOSC & IRT, and ensure that periodic spill response training is conducted.

STATUS OF CORRECTION: Additional Duty Orders have been published for the above listed positions.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR SFC GERALD J. CORREIA, 023-38-2002, HHD, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Installation Response Team Member

1. Effective: 1 December 1993 (date), you are appointed as Installation Response Team Member (duty appointment)

vice N/A (rank) (name)

2. Authority: AR 200-1, para. 8-4h(12)

3. Purpose: To be a member of the Installation Response Team and carry out the duties as outlined in the Facility Spill Plan under the supervision of the ISOC.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: None

RONALD J. [illegible]AGAN
LTC, [illegible], USAR
Commander

COPY

DISTRIBUTION:
1 - SFC CORREIA
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR SSG JAMES M. MAGILL, 038-32-9104, HHD, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Installation Response Team Member

1. Effective: 1 December 1993, you are appointed as Installation Response Team Member
(date) (duty appointment)

_____ vice _____
(rank) (name)

2. Authority: AR 200-1, para. 8-4h(12)

3. Purpose: To be a member of the Installation Response Team and carry out the duties as outlined in the Facility Spill Plan under the supervision of the ISOC.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: None

COPY

RONALD [illegible] BRAGAN
LTC, [illegible] USAR
Commander

DISTRIBUTION:
1 - SSG MAGILL
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR MSG WILLIAM F. STEVENS JR. 039-28-2746, HHD, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Unit Installation On-scene Coordinator during USAR Drills

1. Effective: 1 December 1993, you are appointed as Unit Installation On-scene
(date) (duty appointment)
Coordinator during USAR Drills vice N/A
(rank) (name)

2. Authority: AR 200-1, para. 8-4h(12)

3. Purpose: To perform duties as IOSC IAW Facility Spill Plan and supervise the IRT (Installation Response Team) in their duties and ensure that Spill Response Training is Conducted.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: Coordinate all Spills with Mr. George A. Douglas, GS-7 Facility Manager and Full Time IOSC.

RONALD J. BEAGAN
LTC, FA, USAR
Commander

COPY

DISTRIBUTION:
1 - MSG Stevens
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR GS-5 MS. JOAN A. DICECCO, 176-32-2527, HQ, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Installation Response Team Member

1. Effective: 1 December 1993, you are appointed as Installation Response Team Member
(date) (duty appointment)

vice N/A
(rank) (name)

2. Authority: AR 200-1, para. 8-4h(12)

3. Purpose: To be a member of the Installation Response Team and carry out the duties as outlined in the Facility Spill Plan under the supervision of the ISOC.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: None

RONALD J. BEAGAN
LTC, FA, USAR
Commander

COPY

DISTRIBUTION:
1 - GS5 DICECCO
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR GS-7 MR. GEORGE A. DOUGLAS, 035-24-1C75, HQ, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Facility On-scene Coordinator and Installation Response Team Member

1. Effective: 1 December 1993 (date), you are appointed as Facility On-scene Coordinator and (duty appointment)
Installation Response Team Member. vice N/A (rank) (name)

2. Authority: AR 200-1, para. 8-4h(12)

3. Purpose: To perform duties as IOSC IAW Facility Spill Plan and be a member of the IRT (Installation Response Team) in their duties and insure that Spill Response Training is Conducted.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: Coordinate all spills with local authorities, Fort Devens EMO, & State authorities.

RONALD J. BEAGAN
LTC, FA, USAR
Commander

COPY

DISTRIBUTION:
1 - GS7 GEORGE A. DOUGLAS
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

2-21.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 02-021 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The ISCP is dated 1977. The plan is not tested annually. ISCP's must be reviewed at least once every two years.

CRITERIA: The ISCP is required to be updated every 2 years and approved by a professional engineer. (AR 200-1, para. 8-5d(1))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Supporting Installation and/or the MUARC should have the spill plan updated and have certified by a professional engineer.

STATUS OF CORRECTION: Request has been submitted to Ft Devens EMO for assistance in getting an Updated & Approved ISCP by a professional Engineer

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

30 November 1993

MEMORANDUM FOR EMO, FORT DEVENS, MA 01433

SUBJECT: Request for Updated & Approved ISCP

1. IAW recommendations of ECAAR performed at this USARC on 4 Decemebr 1992 request that Fort Devens Environmental Office provide this Facility with an Updated & Approved ISCP by a professional engineer

2. Request assistance in preparing an annual inventory of Hazardous Wastes, however due to the type of Unit and the type of Facility (No Vehicle Maintenance Performed here) we may not have a need for any Hazardous Waste to be here.

3. IAW recommendations of the ECAAR they stated that facility did not have a listing of hazardous materials storage facilities. If this facility does not have any hazardous materials do we still need this listing?

4. POC: Mr George A. Douglas, GS-7, Facility Manager

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

2-35.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 02-035 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence exists of work place safety evaluation and inspections of handling and storage of hazardous materials.

CRITERIA: The Facility Safety Officer is responsible for conducting work place safety evaluations and inspections of the handling and storage of hazardous materials (AR 200-1 and AR 420-47, para. 3-5).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager/Commander should appoint a Facility Safety Officer to conduct periodic evaluations.

STATUS OF CORRECTION: Additional Duty Orders have been published for the above listed position.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

AFRC-TCT-ADBA (200) 1 December 1993
(DATE)

MEMORANDUM FOR MAJ WILLIAM J. CLEGG III, 032-46-4058, HQ, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Facility Safety Officer

1. Effective: 1 December 1993, you are appointed as Facility Safety Officer
(date) (duty appointment)

vice N/A
(rank) (name)

2. Authority: AR 200-1 and AR 420-47, para.3-5

3. Purpose: To conduct work place safety evaluations and inspections of the handling and storage of Hazardous Materials.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: Inspections will be made on each MUTA-4, and checklist will be completed for turn-in to Facility Manager.

RONALD J. BERGAN
LTC, FA, USAR
Commander

COPY

DISTRIBUTION:
1 - MAJ CLEGG
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

3-3.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 03-003 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence was found of the testing and inspection on a periodic basis of the back flow prevention valve on the boiler make-up water line.

CRITERIA: Installations are required to comply with applicable state, regional, and local requirements. (AR 200-1, para. 1-39a(3))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit a work order request to have the back-flow prevention valve on the boiler make-up water line tested and inspected periodically, and the documentation should be furnished to the facility.

STATUS OF CORRECTION: Work Order #102-3 submitted to Install Back Flow Prevention boiler make-up water line.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

FACILITIES ENGINEERING WORK REQUEST – XFA, XFB, XFC

For use of this form, see AR 420–17 and DA Pam 420–6; the proponent agency is the Office of the Chief of Engineers.

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	DATE: YR	DATE: MO	DATE: DA	OTHER FUND CITATION	SHORT JOB DESCRIPTION	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BL
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24	25 26	27 28	29 30 31 32 33 34 35 36 37 38	39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	66 67 68 69 70 71	72 73 74	75 76 7
XFA		DS	1 0 2	3				9 3	1 0	2 8		INSTALL BACK FLOW PREVENTION VALVE			

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX
1 2 3	4	5 6	7 8 9 10 11	12	13	14 15 16 17 18 19	20 21 22	23 24 25 26 27 28	29 30 31	32 33 34 35 36 37	38 39 40	41 42 43 44 45 46	47 48 49	50 51 52 53 54 55	56 57 58	59 60 61 62 63 64	65 66 67	68 69 70 71 72 73	74 75 76 7
XFB	C																		

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Install back flow prevention valve on the boiler make-up water line.

JUSTIFICATION: It has to be tested and inspected periodically to be in environmental compliance.

DESCRIBE WHAT WILL HAPPEN IF WORK IS NOT ACCOMPLISHED

If work is not done it will be in violation of class 3 environmental finding.

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
GEORGE A. DOUGLAS	Bristol USARC	401-253-3150	

PERSON TO CALL FOR ADDITIONAL INFORMATION

NAME	ORGANIZATION	TELEP

FORWARD FOR APPROVAL

TO: _____ APPROVING AUTHORITY

RECOMMENDED ACTION
- ☐ APPROVAL
- ☐ DISAPPROVAL

ENVIRONMENTAL IMPACT (NO / YES)
- ☐ ☐ ENVIRONMENTAL CONSIDERATIONS
- ☐ ☐ EIS/EIA INITIATED
- ☐ ☐ EIS/EIA COMPLETED

ESTIMATED COST
- FUNDED $ _____
- WC K $ _____
- WC L $ _____
- WC ___ $ _____
- UNFUNDED $ _____
- TOTAL $ _____

WORK TO BE PERFORMED
- ☐ IN-HOUSE
- ☐ SELF-HELP
- ☐ CONTRACT
- ☐ TROOP

FROM: _____ FACILITIES ENGINEER

_____ DATE

APPROVED FOR DESIGN

_____ SIGNATURE _____ DATE

SOURCE OF FU
- ☐ DIRECT
- ☐ AUTOMATIC RI
- ☐ FUNDED REIMI

REMARKS

APPROVAL ACTION

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	ACTION TAKEN	DATE: MO	DATE: DA	FORWARDED TO: DESIGN MO	DESIGN DA	ESTIMATOR MO	ESTIMATOR DA
1 2 3	4	5 6	7 8 9 10 11	12	13	14	15 16	17 18	19 20	21 22	23 24	25 26
XFC	C					A – APPROVED D – DISAPPROVED						

_____ SIGNATURE OF APPROVAL AUTHORITY

3-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 03-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No records found pertaining to modification of water system when the facility was remodeled.

CRITERIA: DEH must keep records of actions taken to correct or repair any part of the distribution system. (40 CFR 141.33(b) and AR 420-46, para. 15)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request that the Supporting Installation DEH furnish facility records of modifications to the water system.

STATUS OF CORRECTION: Request has been made to DEH for records of water system modifications

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

26 November 1993

MEMORANDUM FOR DEH, FORT DEVENS, MA 01433

Subject: Request for Assistance IAW ECARR performed 4 Dec 92

1. The following items were identified as a result of ECARR performed on 4 Dec 93:

a. IAW AR 200-a, para 10-3, request that an Installation Asbestos Management Plan for this installation be provided this installation.

b. Request that DEH provide this installation records of actions taken to modify water system when this installation was remodeled.

c. Request an ICUZ statement of negligible impact be prepared for this facility.

d. Request that a CFC and Halon report be prepared annually as required by DOD Dir 6050.9.

2. POC: Mr. George A. Douglas, GS-7 401-253-3150

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

4-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 04-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No written Hazardous Waste Management plan was available at the facility.

CRITERIA: Each installation will have a written Hazardous Waste Management Plan. (AR 200-1, para. 6-4b).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request EMO/MUSARC assistance in preparing a Hazardous Waste Management Plan.

STATUS OF CORRECTION: Request has been submitted for written Hazardous Waste Management Plan from EMO

REVIEWER'S COMMENTS: Task order #

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

19 November 1993

MEMORANDUM FOR ENVIROMENTAL MANAGEMENT OFFICE, FORT DEVENS, MA 01433

SUBJECT: Request for Assistance to bring the USARC in Compliance

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that Fort Devens Environmental Management Office assist in correcting the below listed findings:

a. Request that EMO conduct or contract for an Air Pollution Emissions inventory to be conducted at this USARC.

b. Request written Hazardous Waste Management Plan from EMO to comply with finding that USARC does not have plan on file.

c. Request that EMO request a copy of current registration certificate from the RI Department of Enviromental Management.

d. Request that this Center be provided with Radon Detection Devices for installation as a self help project.

e. Request that MSDS be provided to this USARC

f. Request that records be screening for past use of Hazardous Substances at this USARC and copies furnished for our files.

2. POC: Mr. George A. Douglas, UA, GS-7

GEORGE A, DOUGLAS
DAC , GS-7
Facility Manager

4-5.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 04-005 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There was no documentation at the facility of an annual inventory of hazardous waste.

CRITERIA: Each installation will conduct an annual inventory of hazardous waste (AR 200-1, para. 6-4c)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request EMO/MUSARC assistance in preparing annual inventory of hazardous wastes.

STATUS OF CORRECTION: Request has been submitted to Ft Devens EMO for assistance in preparing an annual inventory of Hazardous waste.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

30 November 1993

MEMORANDUM FOR EMO, FORT DEVENS, MA 01433

SUBJECT: Request for Updated & Approved ISCP

1. IAW recommendations of ECAAR performed at this USARC on 4 Decemebr 1992 request that Fort Devens Environmental Office provide this Facility with an Updated & Approved ISCP by a professional engineer

2. Request assistance in preparing an annual inventory of Hazardous Wastes, however due to the type of Unit and the type of Facility (No Vehicle Maintenance Performed here) we may not have a need for any Hazardous Waste to be here.

3. IAW recommendations of the ECAAR they stated that facility did not have a listing of hazardous materials storage facilities. If this facility does not have any hazardous materials do we still need this listing?

4. POC: Mr George A. Douglas, GS-7, Facility Manager

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

6-26.1 III FEDERAL FINDING
MANUAL QUESTION NUMBER: 06-026 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The two existing heating oil underground storage tanks are substandard. The 3000-gallon tank lacks overfill protection, spill containment and release detection on the piping. The 1000-gallon tank lacks overfill protection spill containment and release detection. The Facility Manager was not aware of any plans for tank upgrade and/or replacement.

CRITERIA: Substandard systems must be upgraded, closed, or removed from service by Dec. 22, 1998. (40 CFR 280.21(a) through 280.21(c))

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The MUSARC should prepare a plan to upgrade the existing 3000-gallon heating oil tank (installed in 1988) and remove from service the 1000-gallon heating oil tank (installed in 1960).

STATUS OF CORRECTION: Work Order #106-3 submitted for installation of spill Containment & Overflow Protection Devices for Large 3,000 Tank and for removal of 1,000 gallon tank. (See Finding on page 3-6 for copy of work order.)

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

7-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 07-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The facility did not have available a record of screening for past use of hazardous substances.

CRITERIA: Screening for past use of hazardous substances and the potential for contamination is required to be conducted at all major Army installations and subinstallations, and other properties controlled by the Army. (AR 200-1, para. 9-7a)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Supporting Installation EMO and/or the MUSARC should provide to the Facility Manager a record of screening for past use of hazardous substances.

STATUS OF CORRECTION: Request has been made for records of past use of Hazardous Substances at this USARC

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

12-3.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 12-003 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There is no formal policy for implementing NEPA requirements.

CRITERIA: The installation must perform a number of activities in the implementation of NEPA. (40 CFR 1501.2 and AR 200-2 para. 1-4k)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager/Commander should require each unit to appoint a responsible person to monitor unit activities and assure NEPA requirements are met.

STATUS OF CORRECTION: Additional Duty Order published for the above listed Position

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

AFRC-TCT-ADBA (200)

1 December 1993
(DATE)

MEMORANDUM FOR MSG WILLIAM F. STEVENS JR. 039-28-2746, HHD, 1st Bn 76th Regt,
(rank) (name) (SSN)
Asylum Road, Bristol, RI 02809-1221

SUBJECT: Appointment of Unit Activities NEPA Monitor

1. Effective: 1 December 1993, you are appointed as Unit Activities NEPA Monitor
(date) (duty appointment)

vice N/A
(rank) (name)

2. Authority: 40 CFR 1501.2 and AR 200-2 para. 1-4k

3. Purpose: To insure that during unit activities that all requirements of NEPA (National Environmental Policy Act) are met.

4. Period: Until officially relieved or released from appointment or assignment.

5. Special instructions: You will monitor all units activities and insure that no training is programed that would be in violation of NEPA.

RONALD [illegible] BEAMAN
LTC, FA, USAR
Commander

COPY

DISTRIBUTION:
1 - MSG STEVENS
1 - MPRJ
1 - MARKS 220-45a
1 - CDR, 1st Bn 76th Regt
1 - AFRC-TCT-ADSA
1 - Ft Devens - EMO

13-5.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 13-005 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: OMS BUILDING
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: The Corps of Engineers conducted an asbestos survey in September 1990. The results of that survey indicate that the OMS building has possible asbestos pipe insulation.

CRITERIA: Installations are required to prepare, coordinate, and execute an Installation Asbestos Management Plan. (AR 200-1, para. 10-3)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit a work order request to have any asbestos that may exist in the OMS building abated. The Supporting Installation DEH should prepare the Installation Asbestos Management Plan for this facility.

STATUS OF CORRECTION: Work Order # 107-3 submitted for asbestos that may exist in the OMS Building be abated. Request has been made to have DEH prepare the Installation Asbestos Management Plan for this Facility

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

26 November 1993

MEMORANDUM FOR DEH, FORT DEVENS, MA 01433

Subject: Request for Assistance IAW ECARR performed 4 Dec 92

1. The following items were identified as a result of ECARR performed on 4 Dec 93:

a. IAW AR 200-a, para 10-3, request that an Installation Asbestos Management Plan for this installation be provided this installation.

b. Request that DEH provide this installation records of actions taken to modify water system when this installation was remodeled.

c. Request an ICUZ statement of negligible impact be prepared for this facility.

d. Request that a CFC and Halon report be prepared annually as required by DOD Dir 6050.9.

2. POC: Mr. George A. Douglas, GS-7 401-253-3150

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

U.S. GOVERNMENT PRINTING OFFICE: 1988—221-817

FACILITIES ENGINEERING WORK REQUEST – XFA, XFB, XFC

For use of this form, see AR 420–17 and DA Pam 420–6; the proponent agency is the Office of the Chief of Engineers.

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	DATE: YR	DATE: MO	DATE: DA	OTHER FUND CITATION	SHORT JOB DESCRIPTION	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX
XFA		DS	107	3				93	11	26		Request to have Asbestos Abated that may exist in OMS		

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFFIX	BUILDING/FACILITY: NUMBER	BUILDING/FACILITY: SUFF
B	C																		

DESCRIPTION AND JUSTIFICATION OF WORK TO BE ACCOMPLISHED

Request that any asbestos that may exist in the OMS Building be abated

DESCRIBE WHAT WILL HAPPEN IF WORK IS NOT ACCOMPLISHED

If work is not done it will be a Class III environmental finding

REQUESTER INFORMATION

NAME	ORGANIZATION	TELEPHONE NO.	SIGNATURE
GEORGE A. DOUGLAS	Bristol USARC	401-253-3150	George A. Douglas

PERSON TO CALL FOR ADDITIONAL INFORMATION

NAME	ORGANIZATION	TE

FORWARD FOR APPROVAL

TO	RECOMMENDED ACTION	ENVIRONMENTAL IMPACT (NO / YES)	ESTIMATED COST	WORK TO BE PERFORMED	FROM
APPROVING AUTHORITY	☐ APPROVAL ☐ DISAPPROVAL	☐ ☐ ENVIRONMENTAL CONSIDERATIONS ☐ ☐ EIS/EIA INITIATED ☐ ☐ EIS/EIA COMPLETED	FUNDED $ ____ WC K $ ____ WC L $ ____ WC ___ $ ____ UNFUNDED $ ____ TOTAL $ ____	☐ IN-HOUSE ☐ SELF-HELP ☐ CONTRACT ☐ TROOP	FACILITIES ENGINEER DATE

APPROVED FOR DESIGN

SIGNATURE ____ DATE ____

SOURCE OF

☐ DIRECT
☐ AUTOMAT
☐ FUNDED R

REMARKS

APPROVAL ACTION

TRANS CODE	CHANGE	DOCUMENT NUMBER: REQ ID	DOCUMENT NUMBER: SERIAL NUMBER	DOCUMENT NUMBER: FY	DOCUMENT NUMBER: TYPE	ACTION TAKEN	DATE: MO	DATE: DA	FORWARDED TO: DESIGN MO	FORWARDED TO: DESIGN DA	FORWARDED TO: ESTIMATOR MO	FORWARDED TO: ESTIMATOR DA
XFC	C					A – APPROVED D – DISAPPROVED						

SIGNATURE OF APPROVAL AUTHORITY

14-3.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 14-003 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No evidence of an Installation Compatible Use Zone (ICUZ) statement of negligible impact could be found at the facility.

CRITERIA: Installations are required to conduct an ICUZ Study to identify and control noise. (AR 200-1, para. 7-2d and para. 7-5a)

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request from the Supporting Installation DEH that an ICUZ statement of negligible impact be prepared for this facility.

STATUS OF CORRECTION: Request has been made to DEH to prepare ICUZ statement

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

26 November 1993

MEMORANDUM FOR DEH, FORT DEVENS, MA 01433

Subject: Request for Assistance IAW ECARR performed 4 Dec 92

1. The following items were identified as a result of ECARR performed on 4 Dec 93:

a. IAW AR 200-a, para 10-3, request that an Installation Asbestos Management Plan for this installation be provided this installation.

b. Request that DEH provide this installation records of actions taken to modify water system when this installation was remodeled.

c. Request an ICUZ statement of negligible impact be prepared for this facility.

d. Request that a CFC and Halon report be prepared annually as required by DOD Dir 6050.9.

2. POC: Mr. George A. Douglas, GS-7 401-253-3150

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

15-3.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 15-003 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There was no evidence that a Radon test had been performed at the center.

CRITERIA: All Army installations are required to perform radon measurements according to a prescribed prioritized schedule in order to identify Army structures with radon levels above 4 pCi/l with emphasis on identifying Priority I structures with levels greater then 20 Pci/l. (AR 200-1, paras. 11-2a(3), 11-4).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should submit work order request to have the center tested for radon. Facility manager should contact EMO at (508) 796-3002 for detection devices as a self-help project.

STATUS OF CORRECTION: Request has been submitted for Radon Detection Devices from EMO.

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

Facility Manager

19 November 1993

MEMORANDUM FOR ENVIROMENTAL MANAGEMENT OFFICE, FORT DEVENS, MA 01433

SUBJECT: Request for Assistance to bring the USARC in Compliance

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that Fort Devens Environmental Management Office assist in correcting the below listed findings:

a. Request that EMO conduct or contract for an Air Pollution Emissions inventory to be conducted at this USARC.

b. Request written Hazardous Waste Management Plan from EMO to comply with finding that USARC does not have plan on file.

c. Request that EMO request a copy of current registration certificate from the RI Department of Enviromental Management.

d. Request that this Center be provided with Radon Detection Devices for installation as a self help project.

e. Request that MSDS be provided to this USARC

f. Request that records be screening for past use of Hazardous Substances at this USARC and copies furnished for our files.

2. POC: Mr. George A. Douglas, UA, GS-7

GEORGE A, DOUGLAS
DAC , GS-7
Facility Manager

16-2.1 III GMP FINDING
MANUAL QUESTION NUMBER: 16-002 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: Several of the environmental publications which should be maintained at the facility were missing.

CRITERIA: Copies of all relevant Federal, DoD, Army, and state/local regulations should be maintained at the installation.

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The following publications should be obtained if they are not currently available: AR200-1, AR420-47, AR420-74, DOD directive 4165.60, TM 5-603. See Appendix "A" for a complete list of publications which should be available to center personnel either at the DEH, MUSARC, or USARC.

STATUS OF CORRECTION: All Publications have been ordered as of 931129

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

USAAGPC REQUISITION CODE SHEET

SEE CODING SAMPLES ON RI

	ACCOUNT NUMBER	BLANK	SUB-ACCT NO	BLANK	TYPE REQ	BLANK	PUBLICATION OR FORM CATEGORY AND NUMBER	BLANK	CHANGES REQUESTED	BLANK	QUANTITY REQUIRED	BLANK	UNIT OF ISSUE (UI)	BLANK	ZIP CODE OR APO NUMBER
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1	C 0 6 2 4				A		A R 2 0 0 - 1		A L L		0 1		E A		0 2 8 0 9
2	C 0 6 2 4				A		A R 4 2 0 - H 7		A L L		0 1		E A		0 2 8 0 9
3	C 0 6 2 4				A		A R 4 2 0 - 7 4		A L L		0 1		E A		0 2 8 0 9
4	C 0 6 2 4				A		D O D H 4 6 5 . 6 0		A L L		0 1		E A		0 2 8 0 9
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16-14.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 16-014 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: No documentation or other evidence was found to indicate that the facility's environmental requirements were entered into the A106/RCS1383 report process.

CRITERIA: The A-106/RCS 1383 report process must be incorporated into the Army reserve planning, programming, and budgeting system (AR200-1, SEC.12-11(b)).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Commander in
conjunction with tenant units should establish minimum environmental requirements (contained storage area, clean-up materials, etc.) The Facility Manager should work through the MUSARC to have the DEH prepare RCS1383 reports and incorporate unfunded requirements into the Army budget process.

STATUS OF CORRECTION: Request has been submitted to MUSARC

REVIEWER'S COMMENTS: _____

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:
Facility Manager

19 November 1993

MEMORANDUM FOR 76TH DIVISION ENGINEER

SUBJECT: Request that the DEH, Ft Devens, MA prepare RCS1383 Reports

1. IAW recommendations of ECAAR performed at this USARC on 4 Dec 92 request that this facility's environmental requirements be entered into the A106/RCS1383 report process

2. POC: Mr. George A. Douglas, UA, GS-7 (401)253-3150

MR. GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

17-4.1 III ARMY/DOD FINDING
MANUAL QUESTION NUMBER: 17-004 FINDING ID:
FINDING CATEGORY: CLASS III
FINDING TYPE: Negative EXISTING NOV: NO
LOCATION: INSTALLATION WIDE
IFS FACILITY NUMBER:
FACILITY TYPE: USARC - UNITED STATES ARMY RESERVE CENTER

FINDING DESCRIPTION: There is no record at the facility of a listing of hazardous materials storage facilities.

CRITERIA: A master listing of all hazardous materials storage facilities should be maintained at the facility (AR 200-1, Chap. 8).

FINDING COMMENTS:

SUGGESTED/ALTERNATIVE CORRECTIVE ACTION(S): The Facility Manager should request EMO/MUSARC assistance in preparing listing of hazardous materials storage areas.

STATUS OF CORRECTION: Request has been submitted to Ft Devens EMO for assistance which may result in this Facility having no Hazardous Materials.

REVIEWER'S COMMENTS:

SAJ
NO SPCC REQUIRED. INFO WILL BE IN ISCP.

NAME: _____ DATE: _____

DEPARTMENT OF THE ARMY
QUINTA-GAMELIN U. S. ARMY RESERVE CENTER
ASYLUM ROAD, BRISTOL, RHODE ISLAND 02809-1221

REPLY TO
ATTENTION OF:

30 November 1993

Facility Manager

MEMORANDUM FOR EMO, FORT DEVENS, MA 01433

SUBJECT: Request for Updated & Approved ISCP

1. IAW recommendations of ECAAR performed at this USARC on 4 Decemebr 1992 request that Fort Devens Environmental Office provide this Facility with an Updated & Approved ISCP by a professional engineer

2. Request assistance in preparing an annual inventory of Hazardous Wastes, however due to the type of Unit and the type of Facility (No Vehicle Maintenance Performed here) we may not have a need for any Hazardous Waste to be here.

3. IAW recommendations of the ECAAR they stated that facility did not have a listing of hazardous materials storage facilities. If this facility does not have any hazardous materials do we still need this listing?

4. POC: Mr George A. Douglas, GS-7, Facility Manager

GEORGE A. DOUGLAS
DAC, GS-7
Facility Manager

CHAPTER 7

RHODE ISLAND PROJECT FACILITIES

This report section contains the environmental, prehistoric, and historic contexts along with fieldwork results and conclusions/recommendations for further investigation at each of the six Rhode Island 94th RSC project facilities. These facilities include: the Quinta-Gamelin USARC in Bristol, the MG William B. Pendlebury USARC in Cranston, the AMSA 68 in Lincoln/Smithfield, the Fort Greene USARC in Narragansett, the CPT Jonathan H. Harwood USARC in Providence, and the PVT Lloyd S. Cooper III USARC in Warwick.

Quinta-Gamelin USARC (RI001)

Facility Description

The Quinta-Gamelin USARC is located on the north side of Asylum Road in Bristol, Bristol County, Rhode Island (Figure 7-1). The 5.3-acre facility lot, consisting of the reserve center and maintenance shop, was acquired from the town of Bristol in 1956. The reserve center was built into the south side of a hill adjacent to Colt State Park and the Poppasquash Farms National Register Historic District. The reserve center is bordered by woods to the north, the North Cemetery to the east and northeast, a paved bike path (former railbed) to the west, and open land to the south.

Environmental Setting

Topography and Physiographic Zone

The Quinta-Gamelin USARC lies within the Atlantic Seaboard Lowland region of the New England physiographic province. The geomorphic province of southeastern New England is known as the Atlantic Coastal Plain Province and characteristically exhibits a diversity of surficial and bedrock geology that represents an early and complex tectonic history (Cameron and Naylor 1976).

The topography of Rhode Island is predominantly the result of glacial activities that contributed to present-day landforms and drainage patterns. Recent man-made modifications to the landscape have also altered the terrain to some degree.

Bedrock, Surficial Geology, and Soils

Two types of bedrock underlie Bristol, dividing the peninsula into a northern and southern section (Quinn 1971). The northern portion, which includes the facility, is composed of Pennsylvanian age Rhode Island

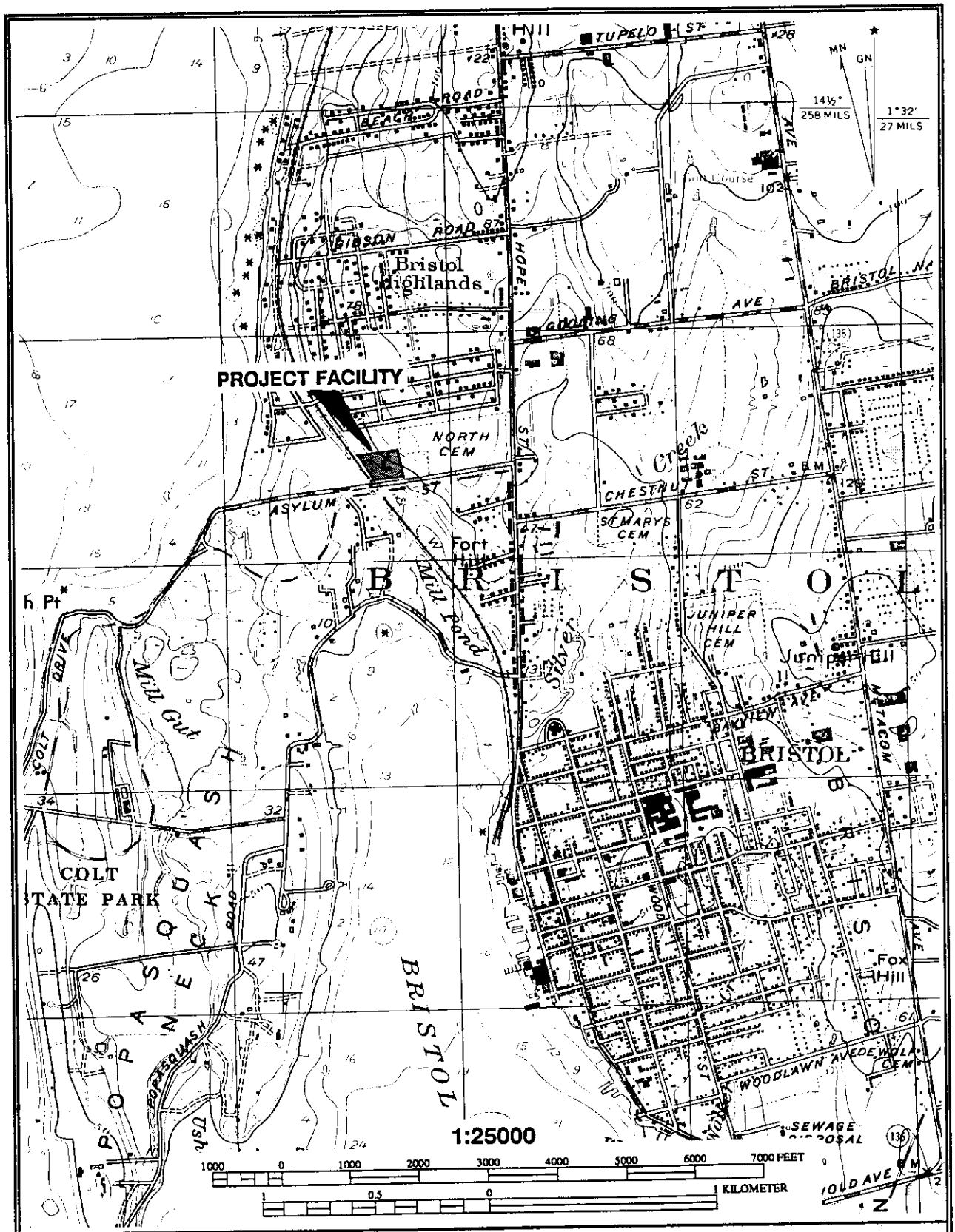


Figure 7-1. Location of the Quinta-Gamelin USARC (RI001) project facility on the Bristol, Rhode Island USGS topographical quadrangle, 7.5 minute series.

Formation sedimentary sandstone, shale, conglomerate, and meta-anthracite coal beds and is common around Narragansett Bay. Associated rocks are quartz-mica, schist, and feldspathic quartzite. Exposed outcrops are often filled with vein quartz. The southern half of Bristol consists of an older plutonic rock of Metacom Granite Gneiss. Overlying these bedrock formations are unconsolidated materials consisting mainly of unsorted glacial till and meltwater-sorted sand, gravel, and silt deposited by glacial activity during the Wisconsin Stage ca. 10,000 to 12,000 B.P. (USDA 1981b). These Narragansett till plains make up the area immediately around the southern and eastern portions of Narragansett Bay. The Narragansett till plains have few bedrock outcrops, and most of the landforms are drumoidal and have been smoothed by glacial action.

Soil formation is the result of physical and chemical processes acting upon parent geological materials (USDA 1981b). In Rhode Island, soils have developed over the past 10,000 to 15,000 years, since the retreat of the Wisconsin ice front. The majority of the facility soils are classified as Udorthents-Urban Land complex (USDA 1981b). These soils have been disturbed up to 2 ft by cutting or filling, or are covered by buildings and pavement. The soils in the northeast corner of the USARC grounds are classified as gently sloping (3 to 8 percent), well-drained Newport silty loams. Nearly level (0 to 3 percent slope), moderately well-drained Pittstown silty loams are found in the western portion of the facility. Poorly drained Stissing silty loams, characterisitic of nearly level slope or depressions, are found in the southwest corner of the Bristol facility. Each of the three naturally occurring soils are formed on glacial upland hills and drumlins in southeast Rhode Island.

Narragansett Bay Drainage

The project facility is located within the Narragansett Bay drainage basin. Narragansett Bay and Rhode Island Sound lie along the southern coast of New England between Long Island, New York, and Cape Cod. The coastline is relatively low but irregular in this region and is characterized by numerous branching bays, salt water ponds and marshes, peninsulas, rugged headlands, islands, sea stacks, rocky shores, and sandy beaches (McMaster 1960). A number of streams in this region discharge into the Narragansett Bay system, including the Providence, Warren, Barrington, and Palmer rivers. The Palmer River drainage system is the principal water source supplying Bristol and the surrounding area. The town of Bristol occupies the southern end of a low-relief peninsula that is flanked on the west by Narragansett Bay and on the east by Mount Hope Bay. The project facility is situated approximately 656 yards east of Narragansett Bay and 602 yards north of Bristol Harbor.

Prehistoric Context

This section presents a general overview of the prehistoric cultural chronology and settlement/subsistence systems in Rhode Island for the past 12,000 years as defined by current archaeological research and the *Rhode Island Historic Preservation Plan* (RIHPC 1986). It also includes a description of local recorded sites that form the prehistoric context for the project facility in Bristol.

The prehistoric database for this section of eastern Rhode Island was compiled initially by avocational interest, and in more recent years by a large number of CRM surveys. The coastal sections of Narragansett Bay have also been the focal point of a number of academic studies. Information collected from all of these sources facilitates the construction of the prehistoric cultural chronology for the Bristol area.

Human activity in the Bristol area during the PaleoIndian Period has been documented through artifact finds, but no intact site areas have been identified to date. A single chert fluted projectile point was collected on the Noble Farm property near the Nayatt section of Barrington. In the Early Archaic Period, warmer post-glacial climatic conditions allowed mixed forest types containing pine and oak to spread into southern New England. Sites dating to this period have been found along major rivers, lakes, and swamps in the coastal plain region of Rhode Island and Massachusetts. Early Archaic artifacts have been identified on Prudence Island (Kerber and Ueki 1981), at the Burr's Hill Site in Warren (Ritchie 1980), and at the Read Farm Site (19-BR-66) in Swansea, Massachusetts. The Eastover Site (RI1739) on Aquidneck Island was occupied during the entire Archaic Period and contained a diagnostic Kirk type projectile point (Davin and Mowchan 1989). Bifurcate-base projectile points are also indicative of the Early Archaic Period.

The Middle Archaic Period is marked by the expansion of a mixed hardwood forest across the region. Human populations expanded in size, and sites dating to this period have been found in a wide variety of environmental settings. Middle Archaic Stark and Neville projectile points recovered at the Eastover Site show a preference for argillite and felsite in the area (Davin and Mowchan 1989).

Late Archaic sites are traditionally found in a variety of settings and reflect varying degrees and types of activities, from broad base to special purpose. Three cultural traditions, the Laurentian, Small Stemmed, and Susquehanna, have been identified within this period. Laurentian deposits are identified by Brewerton projectile points, which were recovered at RI 829 (Kerber and Ueki 1981). Squibnocket triangle points, indicative of the Small Stemmed Tradition, were also recovered at RI 829, as well as at RI 1-65 and RI 1898.

The Transitional Archaic Period, which corresponds to the Susquehanna Tradition, is well represented in area sites. This period is characterized by the use of steatite for bowls and other vessels, Susquehanna Broad and Orient Fishtail projectile points, cremation burials, and a preference for felsite as a lithic material. RI 1755 is a small site in Bristol that contained steatite bowl fragments, a cache of rhyolite bifaces, a charcoal feature with carbonized nut fragments, and a human bone fragment (Morenon 1988). The Blaeser Site (RI 297), located in Barrington, contained Orient Fishtail points, shell, and animal bone (RIHPC site files). This assemblage suggests that during this period people were hunting and fishing, as well as utilizing coastal resources.

The Woodland Period has been strongly associated with coastal adaptation, the use of clay for ceramics, the diversification of food sources, and the advent of horticulture. The Johannis Peninsula Site (RI 1716), located on the Palmer River, was occupied during the Early Woodland Period (3000-1600 B.P.), as suggested by diagnostic Vinette I type pottery (Mowchan 1987). The Weaver Cove Site (RI 1745) contained an Early Woodland Meadowood preform as well as later Woodland deposits.

Middle Woodland materials, including a jasper Jack's Reef projectile point, were collected at the Weaver Cove Site, and two chert Jack's Reef points are present in the Burr's Hill collection. Both these sites show the preference during this period for "exotic" lithics such as jasper from Pennsylvania and cherts from New York and Vermont.

Late Woodland Period occupations are also well represented in the Bristol area. Large, semi-permanent village-like settlements near the coast are indicative of this period. Levanna projectile points, agricultural tools such as hoes, decorated clay ceramics, and shell midden deposits, sometimes associated with human burials are diagnostic of the Late Woodland Period. Late Woodland components were identified at the Read Farm, Eastover, RI 1755, and Kickamuit Spring sites, as well as along the Sakonnet River and Mount Hope Bay. Most of these sites are associated to some degree with shellfish exploitation.

The sites located closest to the USARC project property do not contain much information on temporal affiliation. The Silver Spring Site (RI 1796), located approximately 0.5 mile east of the project area, contained a few pieces of quartz chipping debris. The Paddock Site (RI 1820) and RI 1926, located near Bristol Point a few miles to the southeast, contained low densities of quartz and felsite chipping debris, and no diagnostic tools or features.

Expected Prehistoric Resource

The highest density of sites in the northeast section of Narragansett Bay is located along Bristol Neck and Kickamuit Narrows (RIHPC 1981). Identified site types include multicomponent camp sites, shell middens, lithic workshops, burials, and village sites. Because prehistoric resources have been identified in the immediate project vicinity, it is likely that additional deposits could be located within the project property. Given the intensive use of the Bristol coastal area through most, if not all, of the prehistoric period, expected site types could include any of the types mentioned above.

Historic Context

During the early seventeenth century, the lands of present-day Rhode Island were divided between the Narragansetts and the Wampanoags, two rival Native American tribes of the Algonquin language group. The Narragansetts controlled the lands west of Narragansetts Bay, while the Wampanoags claimed the lands to the east of the Bay. Massassoit, chief of the Wampanoags, controlled the land between Narragansett Bay and Massachusetts Bay. Mount Hope Neck in present-day Bristol, which was known to Europeans as the Mount Hope Lands, was the core of Wampanoag lands and the tribal seat. Other Wampanoag villages were located at Kickemuit, near Kickemuit spring; near the Bristol Narrow; and at Sowams, near the present day village of Warren (Rider 1904; Munro 1880).

One of the earliest visits to Bristol by English settlers dates to 1621 (Bicknell 1908). In an attempt to explore Pokanoket Country (interior Plymouth County), Edward Winslow and Stephen Hopkins followed trails

westward towards Narragansett Bay. After European and Native American contact was made, Massassoit began to sell lands to both the Plymouth and Massachusetts Bay colonies for their new towns. During this time, the Narragansetts were also expanding into Wampanoag territory and selling land to Rhode Island settlers. In an attempt to protect his tribe from the rival tribe, Massassoit sought an alliance with the English. During the 1640s and 1650, he sold a number of large tracts of land to Massachusetts Bay and Plymouth agents. Present-day Bristol and the Mount Hope area were exempt from all land transactions.

For a short time after Massasoit's death, the Wampanoags were ruled by his son, Wamsutta. Metacom (King Philip) became the leader upon Wamsutta's death in 1662 (Rider 1904). He discontinued the practice of selling land to the colonists. Communication between the Native Americans and the Europeans gradually became ambivalent and relations deteriorated over time. Tensions culminated in the outbreak of King Philip's War in June 1675. The fighting that had begun between Chief Metacom of the Wampanoag and the New England Confederation soon involved a number of other Native groups throughout the region (McLoughlin 1986). The Narragansett hoped for neutrality but were eventually drawn into the conflict. On December 19, 1675 the English slaughtered the Narragansett Indians and Wampanoag refugees at the Great Swamp Fight in present-day South Kingston. Metacom's forces absorbed surviving Native Americans and continued frontier warfare throughout New England. Secondary accounts of the war describe over 600 fatalities, the burning of many settlements, and the death of Metacom and his warriors at Cold Swamp in present-day Bristol (e.g., Munro 1880). Remaining Native Americans either were sold into slavery or fled to safety. The end of the war signaled a clear path to further development and the progressive formation of Rhode Island towns.

Both Rhode Island and Plymouth Colony claimed jurisdiction over the Mount Hope Lands after the death of Metacom (Rider 1904). In 1680 Mount Hope was granted to Plymouth Colony and did not officially become a part of Rhode Island until 1747. Plymouth sold territory as part of a 7,000-acre parcel "known by the name of Mount Hope Neck and Poppasquash Neck" to four Boston merchants for 1,100 pounds sterling (Munro 1880). Political and tax incentives were offered to Stephen Burton, Nathaniel Oliver, John Walley, and Nathaniel Byfield, if, as original proprietors, they could attract 60 families to establish permanent residence within one year. They were successful, and Bristol was incorporated as a town in 1681.

The town was laid out with the purpose of functioning as both an agricultural and shipping community. The design included 128 house lots, with waterfront land measuring 1 acre and all others 2 acres. Ten acres of farmland were sold in conjunction with each house lot. A total of 600 acres was kept for common use (e.g., town hall, cemetery, commons). Streets were planned in 8-acre squares. Outlying areas in the western, central, and northeastern sections of Bristol were divided into farms of approximately 100 acres. Seventy families were living in the town by 1690, and most of the farm lands had been claimed.

By 1693, fifteen vessels were registered to Bristol citizens, and a regularly scheduled market day was held to sell surplus produce. The harbor became the center of economic life as fishing and trading increased in importance. Narragansett Bay was at this time an important feeding ground for whales; when schools could be seen from shore, a party of whaling boats was sent out from Bristol Harbor (Howe 1959). The whaling

industry continued until the late eighteenth century, when Revolutionary War maritime military activity caused the whales to feed elsewhere, virtually ending the whaling industry within the Bay.

As an active seaport, Bristol was in a vulnerable position during the Revolutionary War. British and Hessian troops landed in Bristol in 1778 with the intention of destroying the shipyards at Kickemuit River and Bristol Harbor (Cirillo 1980). During this invasion, known locally as the "Burning of Bristol," enemy troops burned over 18 buildings, took prisoners, and stole valuables.

Within two decades after the Revolutionary War Bristol had regained its former status as a prosperous seaport. In 1800, Bristol's population was 1,678, and 42 sea vessels were registered to the townspeople. Items such as beef, pork, salt, fish, potatoes, cheese, flour, soap, candles, rum, and onions were exported from the harbor (Cirillo 1980). Businesses related to local rum distilleries encouraged town merchants and shipowners to become heavily involved in the West Indies triangle trade (Coleman 1969).

In the second half of the nineteenth century, the decline of a short-lived revival in the whaling industry and legislation affecting the triangle trade caused a sharp decline in Bristol's maritime economy (Howe 1959). Agriculture and ship-building became important industries during the same period. The Herreshoff Company, established in 1863, started making sailboats and yachts, then eventually specialized in steam engine and torpedo boats. Export farm products such as onions, carrots, rutabagas, turnips, and geese were sent to Boston and New York during the mid-nineteenth century (Russell 1982).

The lack of a major water source in Bristol prohibited industrial development until steam power became available (Coleman 1969). The first mills were concentrated along the harborfront in the late 1830s. Manufacturing industries, including cotton and wool textile mills, revived Bristol's economy. A sugar refinery, a rubber company, and a coal and lumberyard were established by the mid-nineteenth century. The construction of the Providence, Warren, and Bristol rail line in 1855 positively affected agriculture and industry by offering cheap, efficient overland transportation for freight and passengers (Figure 7-2). The railroad served 56 trading stores and 48 mechanical and manufacturing establishments in Bristol. Bristol also began to attract summer vacationers during the second half of the nineteenth century.

From the 1840s to mid-1900s, three separate waves of immigrants came to Bristol (Cirillo 1980). During this time, Bristol's population rose from 3,490 to 11,953. Irish immigrants, who were the first foreign-born group to settle in the area, found employment as mill workers, servants, and field hands. In the 1880s, a substantial Italian population settled near Wood Street and worked at the National Rubber Company, which had been relocated from the waterfront to a new inland site. A moderate number of Portuguese immigrants made up the last influx of foreign-born citizens to reside in Bristol.

With this significant increase in the population came improved public services. By 1903, the Bristol Gas Light Company was in operation and maintained a pump station (RI 1066) near Silver Creek (Morenon 1988). During this time, the town's primary economic base lay in manufacturing industries, and Bristol was no longer a port of entry. The necessity for land transportation between Aquidneck Island and Bristol became evident, and the Mount Hope Bridge was built by 1929.

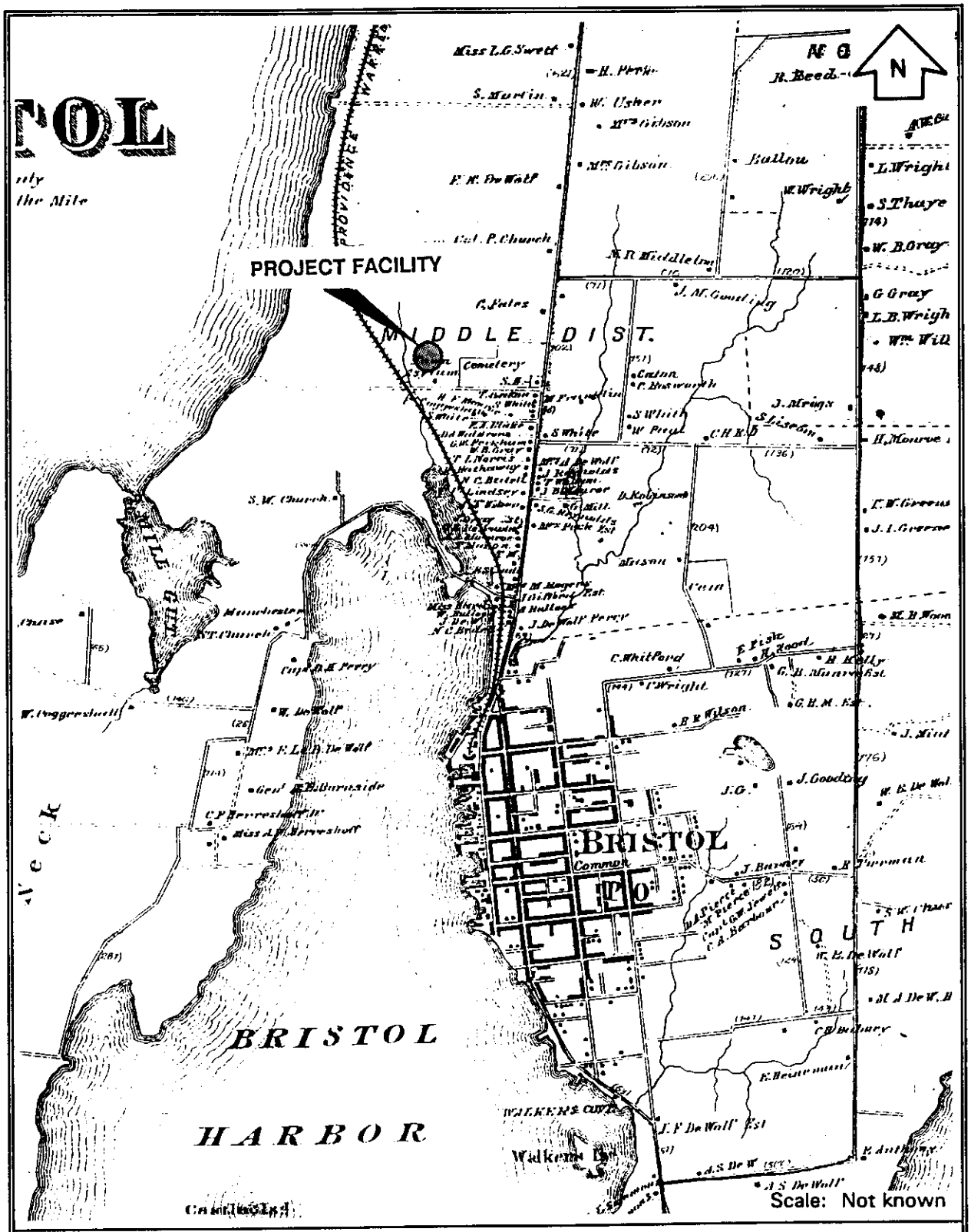


Figure 7-2. 1870 map of Bristol, Rhode Island with the location of the Quinta-Gamelin USARC (RI001) project facility (source: Beers 1870c).

During the second half of the twentieth century, Bristol has become a suburban town associated with the large metropolitan area center of Providence. In 1985, Bristol's population was 20,100 (Rhode Island Department of Economic Development 1987). Almost half of the workforce continues to be associated with manufacturing industries as either machine operators or assemblers. Recreation and summer tourism are also very much a part of Bristol's economy. Both the Poppasquash Farms Historic District and the Bristol Waterfront Historic District are listed in the National and State Registers of Historic Places.

Expected Historic Resources

A review of nineteenth-century maps of Bristol did not reveal the presence of land improvements or structures within the facility boundaries (Walling 1855; Beers 1870c; Sampson 1883; Everts and Richards 1895b). However, given the early historic settlement and network of regional and local trails, the facility has the potential to contain under-documented Native American or Colonial sites dating to the seventeenth and eighteenth centuries. The presence and integrity of any under-documented historic resources within the Bristol facility is dependent upon the degree of previous disturbance related to facility construction and associated earthmoving activity.

Results of Previous Archaeological Studies

The 1979 archaeological survey of the Quinta-Gamelin USARC property reported that the facility was totally disturbed (Hammer 1983). An intensive archaeological survey of the parcel was not recommended.

Results of Validation Survey

The validation survey included a walkover of the Quinta-Gamelin facility to reassess the previous determination of low sensitivity and recommendation for no further work. A total of ten shovel turnovers was used to verify the presence of disturbed soils (Figure 7-3). Four profiles (1, 5, 6, and 10) revealed disturbed fill soils related to the leveling of the slope and underground utilities/drains (see Appendix B). Four profiles (2, 3, 4, and 7) revealed intact soils. The remaining two profiles (8 and 9) revealed very deep topsoils that may be the result of slope wash or filling.

Based on the 1956 survey map, the 1958 facility plan, and shovel turnovers, it was determined that a large portion of the natural sloping topography of the facility had been disturbed as a result of machine grading and filling to create the artificial terrace of the reserve center. The natural wetland that had existed in the southwest corner of the property has been altered as a result of earthmoving and the placement of storm drains that now feed into the wetland. It was determined, however, that the northeast corner and possibly the southern fenceline contained intact soils (see Figure 7-3). Two quartz flakes were surface collected at the base of a stone wall that runs parallel to Asylum Road south of the reserve center (see Appendix A).

Conclusion/Recommendation

Due to the recovery of the quartz flakes, the proximity of Narragansett Bay, and the presence of prehistoric sites in the immediate vicinity (RI 1796, 1820, and 1926), potentially undisturbed sections of the Quinta-Gamelin USARC property possess a moderate to high archaeological sensitivity for containing prehistoric deposits (see Figure 7-3). The remainder of the facility, due to the degree of previous disturbance, steep slope, and wetlands, possesses a low archaeological sensitivity for intact cultural resources. An intensive archaeological survey of the areas having moderate to high sensitivity is recommended. This area encompasses an estimated 22,600 sq ft (2100 sq m).

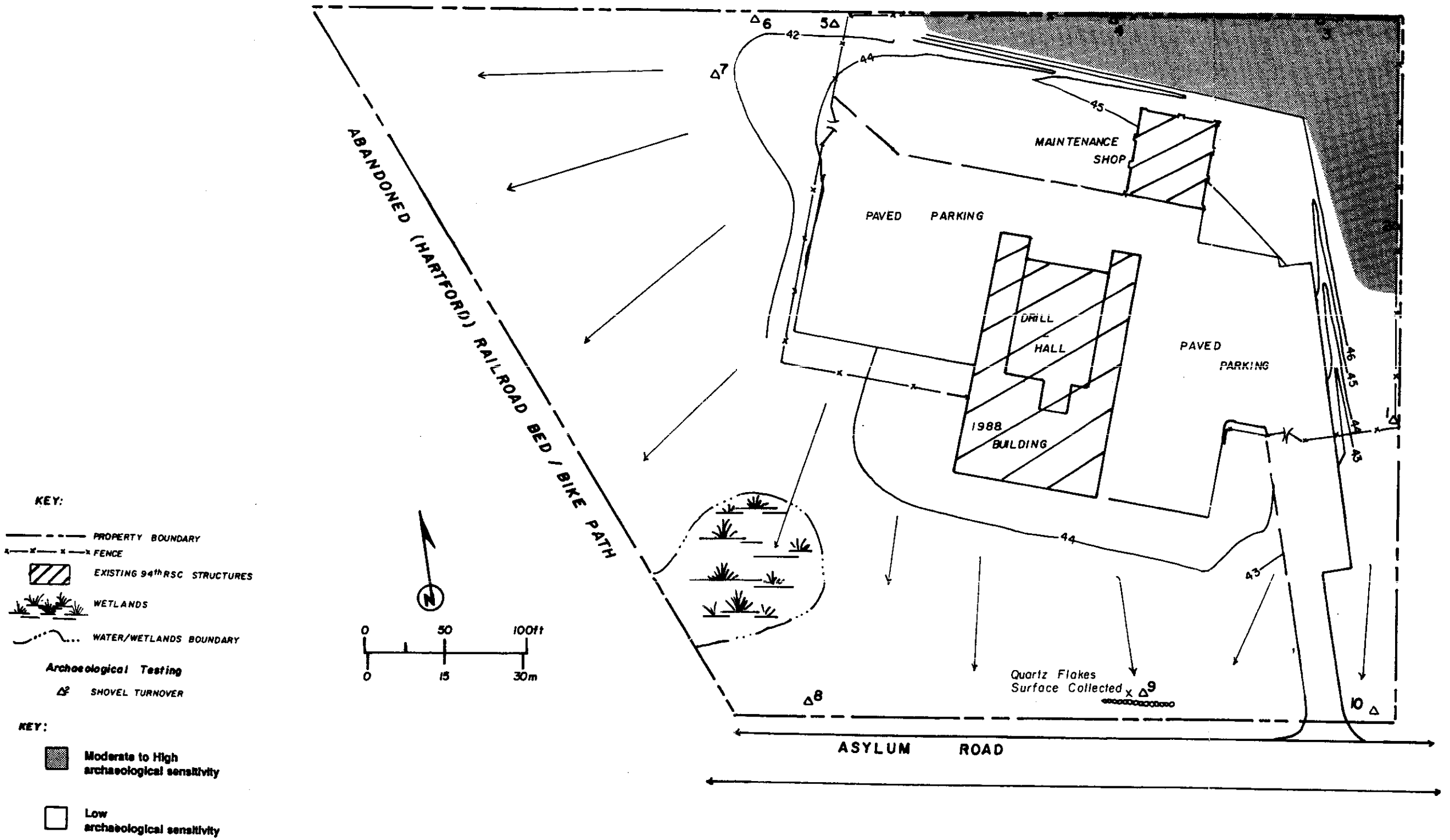


Figure 7-3. Quinta-Gamelin USARC (RI001) project facility, showing the location of shovel turnovers and archaeological sensitivity.

U.S. ARMY RESERVE
STORMWATER-POLLUTION PREVENTION PLAN
(SWP3)

Quinta-Gamelin U.S. Army Reserve Center
Organizational Maintenance Shop
Bristol, Rhode Island
RI001

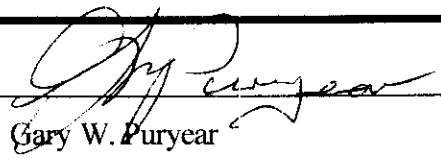
Drafted by

U.S. GEOLOGICAL SURVEY
Water Resources Division
Massachusetts-Rhode Island District

for

94th REGIONAL SUPPORT COMMAND
Devens, Massachusetts

06/28/2000

SWPPP Certification (RIPDES.V.G)
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
Signature: 
Typed name: Gary W. Puryear
Title: Environmental Manager
Telephone numbers: (978) 796-2238

Acronyms and Abbreviations	
AST	Aboveground-Storage Tank
BMP	Best Management Practice
CFR	Code of Federal Regulations
DCSOPS (T)	Deputy Chief of Staff, Operations (Training Division)
MEP	Military Equipment Park
NPDES	National Pollutant Discharge Elimination System
NSWD	Non-Stormwater Discharge
OF	Outfall
OMS	Organizational Maintenance Shop
POV	Privately Owned Vehicle
PPM	Potentially Polluting Material
PPT	Pollution Prevention Team
RIDEM	Rhode Island Department of Environmental Management
RIPDES	Rhode Island Pollution Discharge Elimination System
RSC	94th Regional Support Command, Devens, Massachusetts
SOP	Standard Operating Procedure
SWP3	Stormwater-Pollution Prevention Plan
USARC	U.S. Army Reserve Center
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	Underground-Storage Tank

TABLE OF CONTENTS

1.0 INTRODUCTION

The Clean Water Act of 1987 [40 Code of Federal Regulations (CFR) 122] requires Federal installations that discharge stormwater whose quality may be affected by industrial activities to implement plans to control the quality of stormwater discharges. This "*Stormwater-Pollution Prevention Plan*" (SWP3) was developed in response to these requirements. The plan identifies sources of potential pollution, describes "*Best Management Practices*" (BMPs) designed to minimize pollution through prevention and source control, and recommends actions for this facility. The SWP3 also discusses stormwater-runoff drainage, identifies point-source outfalls into local surface waters, and provides non-stormwater discharge certification of stormwater outfalls.

1.1 FACILITY PERMIT

The State of Rhode Island, in which this facility is located, has National Pollutant Discharge Elimination System (NPDES) permitting authority. Stormwater permitting in the State is administered by the Rhode Island Department of Environmental Management (RIDEM), Office of Water Resources, Providence, Rhode Island (Stormwater Permit Manual, Thompson Publishing Group, Inc., written commun., January 1995). The RIDEM representative is Eric Beck (401) 222-6820, ext. 7202.

As of December 8, 1999, the U.S. Environmental Protection Agency's (USEPA's) final Phase II stormwater rule allows for a "No-exposure" exemption for facilities that have no discharge of stormwater contaminated by exposure to industrial activities. For more information about Phase II, see USEPA 64 FR 68721 and call the RIDEM representative. The RIDEM is required to publish Phase II regulations by December 8, 2000, and may offer the "No-exposure" exemption 90 days after this date.

1.2 FACILITY DESCRIPTION

The Quinta-Gamelin U.S. Army Reserve Center (USARC) and Organizational Maintenance Shop (OMS) are on Asylum Road in Bristol, Rhode Island (*PLATES 1, 2, 3*). The facility encompasses about 5.17 acres at an elevation of about 60 feet above the National Geodetic Vertical Datum of 1929 (figure 1.2). Geographic coordinates for the OMS are latitude 41°41′18″ North and longitude 71°17′11″ West.

The 2nd Simulation Exercise Group currently is stationed at the Quinta-Gamelin USARC. The primary mission of the unit is to evaluate command, staff-combat, and medical units using computer-generated programs. Vehicle maintenance currently is not performed at the facility. Military vehicles are not stored on the property.

1.3 PLAN DEVELOPMENT

The U.S. Geological Survey (USGS), Water Resources Division, drafted this plan. Information and illustrations included in the plan were developed from site inspections and from the 94th Regional Support Command (RSC) and USGS databases.

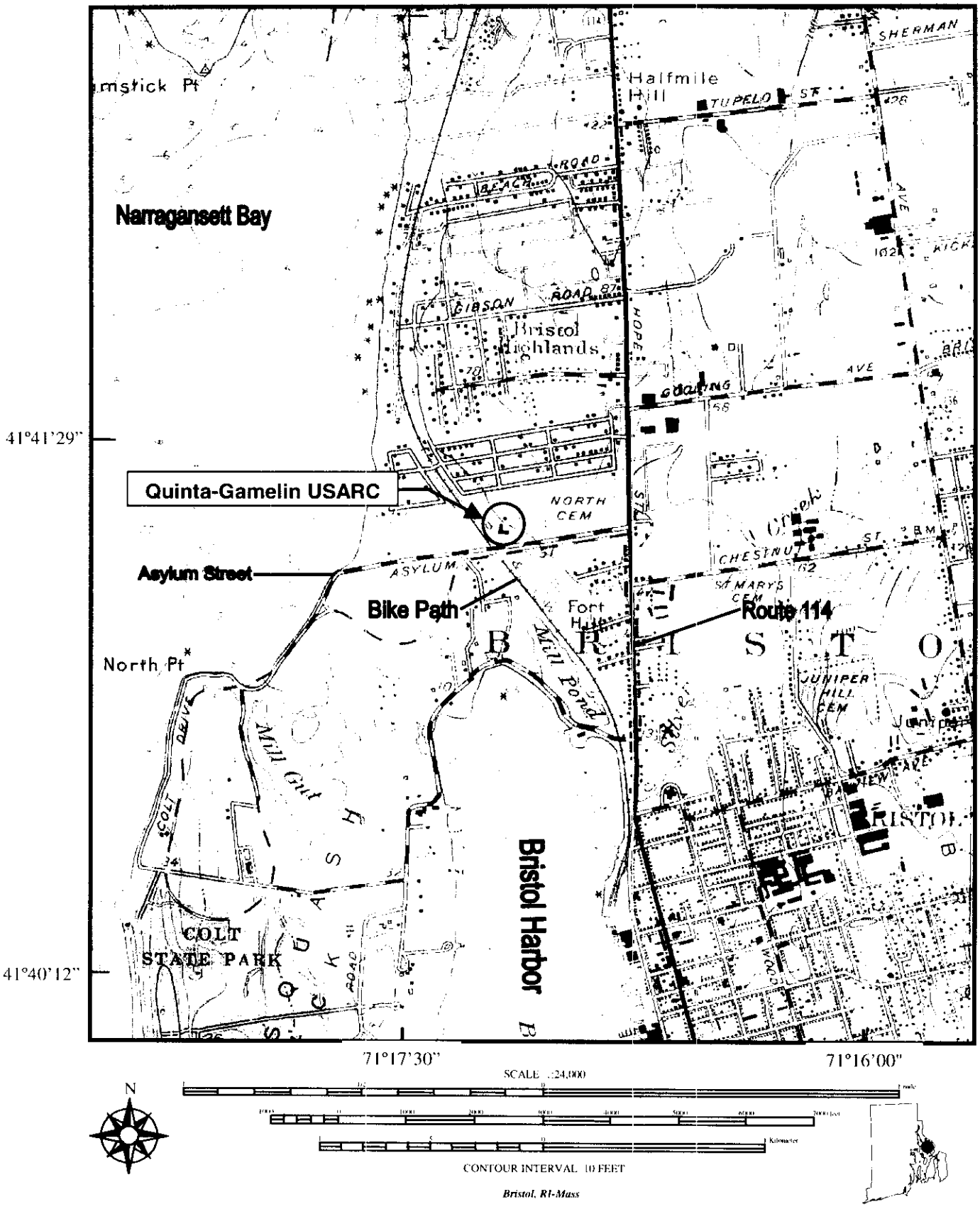
1.0 Introduction-*Continued*

1.4 PLAN REVISIONS

The SWP3 should be updated annually or more often, if required. Many elements of the plan are presented in maps and tables describing (1) sites where potential pollution of stormwater might occur, (2) stormwater-pollution risks from those sites to surface waters of the State, and (3) BMPs that prevent or control stormwater pollution. Detailed notes and sketches should be made during periodic stormwater inspections to facilitate the annual plan revision.

1.0 Introduction-*Continued*

Figure 1.2--Location Map (source: USGS).



2.0 POLLUTION-PREVENTION TEAM [RIPDES.IV.E.2.a]

The Pollution-Prevention Team (PPT) is responsible for implementing and evaluating the effectiveness of the SWP3 at this facility. Personnel should officially be appointed to the team. Table 2.0 lists the members of the PPT and shows their respective duties. Additional members may be appointed to the PPT as needed.

Table 2.0—Pollution-Prevention Team Members and Duties.

Team member	Duties
94th Regional Support Command - Chief Environmental Division (978) 796-2238	• Reviews and approves the SWP3 and any modifications or updates to the plan in coordination with State and Federal regulators. • Provides guidance and information as requested. • Performs annual site compliance inspection.
Regional Facility Manager – Rhode Island (401) 253-0451	• Reviews and approves the SWP3 and any modifications or updates to the plan.
Quinta-Gamelin USARC Facility Coordinator (401) 253-3150	• Implements the stormwater-pollution prevention program at the facility. • Schedules meetings of the PPT. • Signs documents and certificates required in the SWP3. • Prepares cost estimates for implementation plans for advanced and baseline BMPs at the facility. • Submits requisitions and work orders and promotes self-help initiatives. • Conducts monthly stormwater inspections and files inspection reports. • Serves as official emergency-response spill coordinator for the facility. • Inspects hazardous material and waste-storage areas, updates records on those areas, monitors waste generation, and monitors the transfer of such materials among units. • Informs Commanding Officer and 94th RSC of problems and equipment and training needs.

3.0 ASSESSMENT [RIPDES.IV.E.1]

As required by the RIDEM General Permit, the site assessment includes a description of potential sources of pollutants that may affect stormwater discharges or which may cause the discharge of pollutants from the facility during dry weather. All activities and materials that may be potential pollutant sources are identified. Pollutant sources are referenced to stormwater outfalls to aid in conducting the risk assessment, implementing BMPs, and updating the SWP3.

3.1 SITE MAP [RIPDES.IV.E.1.a]

The RIDEM stormwater regulations require that a facility site map be developed as part of the SWP3. Required elements of the map include locations of industrial activities, stormwater structures, and the directions of stormwater runoff. The site map (figure 3.1) shows primary stormwater-drainage directions, outfalls, and the location of buildings and facilities. Stormwater-control structures, pollutant sources, and areas at high risk for pollution are labeled with site map codes.

3.2 DRAINAGE [RIPDES.IV. E.1.a]

Site observation of the Quinta-Garnelin USARC property identified no stormwater outfalls (figure 3.1) that could be subject to USEPA stormwater regulations. Two unregulated outfalls (OF-1 and OF-2) were identified on the property. A third outfall (OF-3) currently is not functioning but has the potential to become an unregulated outfall after some work is done to the facility storm-sewer system.

OF-1 is a low-lying area under the security fence northwest of the OMS (*PLATE 21*). OF-1 drains a portion of the grass area northwest of the OMS (*PLATE 22*). No regulated activities occur within the drainage area of OF-1. Runoff flowing under the fence at OF-1 enters a large grass area outside the security fence, still within the property line, where it either infiltrates the ground or evaporates. Under some conditions runoff may be directed southwest toward a pond near the western property line.

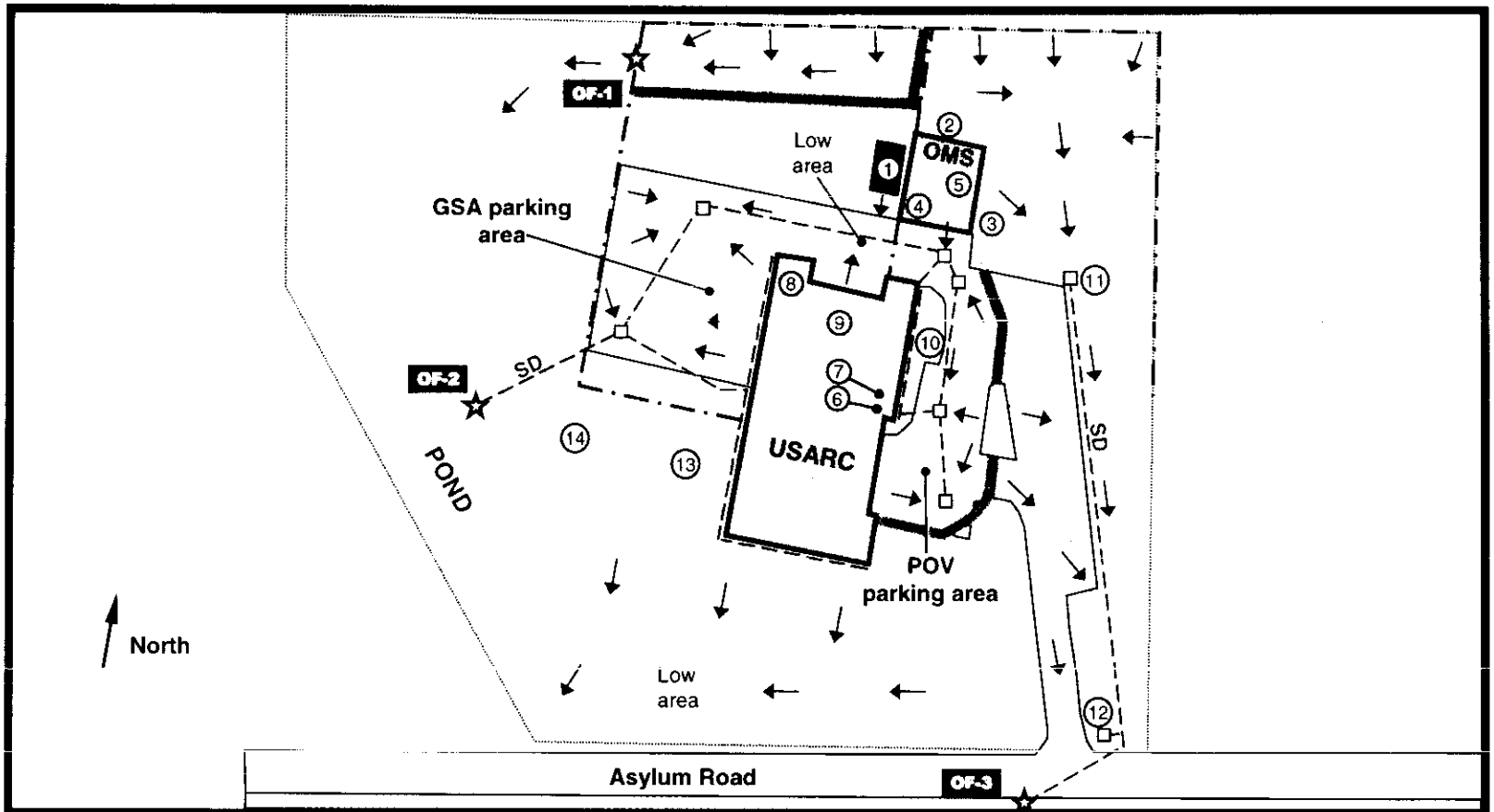
OF-2 is a culvert pipe outlet in the woods west of the USARC (*PLATE 23*). The easiest access to this outfall is from the East Bay Bike Path (*PLATE 26*) that crosses Asylum Road near the western property line. OF-2 drains the privately owned vehicle (POV) parking area east of the USARC (*PLATE 19*), the drive-through area between the OMS and the USARC, and the GSA parking area west of the USARC (*PLATE 20*). There currently are no regulated activities within the drainage area of OF-2. Runoff flowing through OF-2 is directed into a pond near the western property line (*PLATES 24, 25*). Two locations were observed where the pond has the potential to flow into a gravel drainage swale east of the bike path during extremely wet conditions (*PLATES 27, 28*). The drainage swale can be seen in plates 26 and 27. Runoff entering the drainage swale is directed south along the bike path into a storm-sewer system on Asylum Road. The storm-sewer system directs runoff into an open channel south of Asylum Road. Runoff in the open channel is directed into Mill Pond and continues to flow south into the Bristol Harbor. During most storms runoff from OF-2 enters the pond and does not travel to Bristol Harbor. Runoff in the gravel drainage swale typically infiltrates the ground or evaporates.

Forty-five feet on either side of the East Bay Bike Path is the property of Colt State Park, according to the Park Manager. The pond is thought to be on the property of both the Quinta-Gamelin USARC and Colt State Park depending the amount of water in storage at a particular time.

3.0 Assessment-*Continued*

OF-3 is a culvert pipe outlet in the grass median between the westbound and eastbound lanes of Asylum Road (*PLATE 29*). The drainage pathway from OF-3 down the grass median toward the lowest point near the bike path crossing can be seen in plate 30. OF-3 currently is not functioning because of problems with the storm-sewer system on the eastern side of the facility. The storm drain near the corner of Asylum Road and the facility entrance (**site 12**, *PLATE 16*) is scheduled to have the debris removed, according to the Facility Manager. A storm drain near the northeastern corner of the facility access road was observed on an As-built drawing (**site 11**, *PLATE 15*). Field observation shows that it is completely buried under mud and grass. It is recommended that this storm drain be found using a metal detector. Once found, it is recommended that the storm drain be cleaned and the storm-sewer pipe connecting this drain to OF-3 be cleaned if necessary. After the cleaning, OF-3 will drain the grass area east of the OMS that currently ranges from very damp to standing water depending on weather and soil conditions. Stormwater runoff from the access road and the grass area east of the access road are included in the drainage area of OF-3. There are no regulated activities that occur within the drainage area of OF-3. Stormwater runoff leaving the facility through OF-3 is directed into the grass median on Asylum Road and flows downhill toward the bike path crossing. Runoff then enters the storm-sewer system that directs it into the open channel that flows into Mill Pond and then the Bristol Harbor.

3.0 Assessment-*Continued*



SITE MAP CODE GUIDE

1-Vehicle-wash rack
2-1,000-gallon UST
3-Propane tanks
4-Storage area
5-Classroom
6-Speedy Dry (boiler room)
7-Rolling spill kit (boiler room)
8-Spill kit
9-Classroom
10-3,000-gallon UST
11-Storm drain buried
12-Storm drain with debris
13-Waste-water septic tank
14-Leach field

KEY

Stormwater Runoff
Drainage Divide
Security Fence
Unregulated Outfall OF-1
Storm-sewer system (SD)
Property Line
Paved
Grass
Building
Storm Drain

Figure 3.1—Quinta-Gamelin USARC Site Map

Not to scale 5/18/00
Drafted by Jean P. Campbell, Hydrologist
Reviewed by Emitt C. Witt, Supervisory Hydrologist

3.0 Assessment-*Continued*

3.3 STRUCTURES [RIPDES.IV. E.1.a]

There are two storm-sewer systems at the Quinta-Gamelin USARC. One system drains most of the paved areas at the facility and includes roof drainage from the USARC. The second system east of the access road currently is not functioning. There are plans to get this system operational, according to the Facility Manager. A floor drain was observed in the USARC boiler room (*PLATE 9*). Condensation from the air conditioning unit and water from one of two hot water heaters enters this drain and is directed into the storm-sewer system that leads to OF-2.

The facility has a 5,000-gallon septic tank (**site 13**, *PLATE 17*) leading to a distribution box and leach field (**site 14**, *PLATE 18*). The As-built drawings showed that the leach field at site 14 was connected to the existing leach field during the project to expand the USARC building.

3.4 POTENTIALLY POLLUTING MATERIALS [RIPDES.IV.E.1.d]

Exposed potentially polluting materials (PPMs) include any hazardous materials that are exposed to precipitation and/or stormwater runoff (i.e., during storage, active use, or loading/unloading). A lack of cover and containment during loading/unloading or storage of PPMs commonly results in exposure to stormwater runoff. If vehicle maintenance is performed at this facility in the future, maintenance personnel should maintain an inventory tracking system for PPMs. An electronic copy of the PPM inventory, in spreadsheet format, is provided to facilities where vehicle maintenance is being performed as part of the stormwater assessment. The inventory must be continuously updated and include the locations of materials and approximate quantities on hand.

3.5 POTENTIAL SOURCES OF POLLUTANTS [RIPDES.IV. E.1.d]

An inventory of areas at Quinta-Gamelin USARC where industrial activities could potentially pollute stormwater runoff was compiled from facility plans, staff interviews, and field reconnaissance. Industrial activities such as vehicle fueling and maintenance are not conducted at this facility. Therefore, associated activities such as loading and unloading of PPMs and the generation of waste products as a result of vehicle maintenance are not a concern at this time.

The OMS is not considered to be a hazardous-waste generator by the USEPA and has not been issued a generation number. A small flammables storage cabinet, recently purchased, was observed in the boiler room (*PLATE 10*). The cabinet will be moved to the supply room and used to store windshield washer fluid for GSA vehicles and other chemicals as needed.

The facility is heated by propane gas, so no PPMs are stored at the facility to heat the OMS or USARC. Two propane tanks used to heat the buildings at this facility are east of the OMS (**site 3,** *PLATE 13*). Two underground-storage tanks (USTs), formerly used to store fuel oil for heating the facility, will be removed in the summer of 2000. A 1,000-gallon UST is located north of the OMS (**site 2**, *PLATE 12*). A 3,000-gallon UST is located east of the USARC (**site 10**, *PLATE 14*). Both USTs have had excess fuel removed from the tanks, according to the Facility Manager.

3.6 SIGNIFICANT SPILLS AND LEAKS [RIPDES.IV.E.1.e]

There have not been any significant (reportable) spills or leaks during the last 3 years at the Quinta-Gamelin USARC, according to the Facility Coordinator.

3.0 Assessment-*Continued*

3.7 NON-STORMWATER DISCHARGES [RIPDES.IV.E.1.i & 2.k]

Unauthorized connections discharging pollutants to stormwater runoff or inappropriate management practices result in non-stormwater discharges (NSWDs) to storm-sewer systems, open drainage ditches, and outfalls. Sources of unauthorized NSWDs must be identified and permitted, or eliminated, except for flows in compliance with a Rhode Island Pollutant Discharge Elimination System (RIPDES) permit. Stormwater-pollution prevention measures should be adopted and implemented, where necessary, to minimize pollutants in these discharges.

There are no regulated outfalls that require certification at the Quinta-Gamelin USARC. The three unregulated outfalls did not have a NSWD on May 16, 2000. A NSWD certification is provided in the Appendix (table 6.0). The Facility Coordinator must sign the certification (RIPDES.V.F).

3.8 STORMWATER-MONITORING DATA [RIPDES.IV.E.1.h]

Stormwater sampling has not occurred at this facility, according to the Facility Manager. Sampling of stormwater, if required, should be conducted at regulated outfalls as mandated by the USEPA. Stormwater sampling and analysis must be performed by qualified individuals adhering to a specific quality-assurance/quality-control program. Stormwater monitoring currently is not required for vehicle-maintenance activities in USEPA-regulated states and most states with NPDES permitting authority, like Rhode Island.

3.9 RISK SUMMARY [RIPDES.IV.E.2.b]

An initial assessment of areas at the Quinta-Gamelin USARC with a potential for pollution from stormwater runoff has been prepared as part of the SWP3. The assessment should be considered a "snapshot" in time and must be updated annually or more often, as necessary. The following narratives summarize conditions observed during the December 7 and 8, 1999, site assessment. An additional site visit was conducted on May 16, 2000. Sites identified as having a potential for stormwater pollution are summarized in table 3.9. Locations of these sites are shown in figure 3.1.

BUILDINGS AT THE FACILITY

The OMS has been remodeled into a training and storage area. Bay 1 currently is used as storage area (**site 4**, *PLATE 4*). No PPMs were observed in the area designated as storage area. Bay 2 currently is a classroom (**site 5**, *PLATE 5).*

The USARC has a maintenance bay in the northern end of the building. This maintenance bay has also been remodeled and contains a classroom (**site 9**, *PLATE 6).* A spill kit was observed in the northwestern corner of the USARC (**site 8**). A floor drain was observed in the boiler room. Condensation from the air conditioning unit and water from one of two hot water heaters may enter this drain and is directed into the storm-sewer system that leads to OF-2. A rolling spill kit (**site 7,** *PLATE 8*) and a container of Speedy Dry® (**site 6**, *PLATE 7*) were observed in the boiler room during the assessment.

The OMS and USARC currently pose no risk to surface waters of the State of Rhode Island. A storm drain is located downhill from the door to bay 2 in the OMS. Preventing spills from entering this storm drain should be a priority if vehicle maintenance is performed at this facility in the future.

3.0 Assessment-*Continued*

PAVED PARKING AREAS

The asphalt parking area east of the USARC is used for POVs (*PLATE 19*). The parking area west of the USARC currently is used for parking GSA vehicles (*PLATE 20*). Both of these parking areas direct stormwater runoff into a storm-sewer system that leads to OF-2. The GSA parking area was formerly used for parking military vehicles, according to the Facility Coordinator. If the GSA parking area is used for storing military vehicles in the future, protecting storm drains in this area from potential leaks should be a priority. OF-2 will become a regulated outfall if the GSA parking area is used as a military equipment park (MEP).

VEHICLE-WASH RACK

The drainage pathway from the vehicle-wash rack (**site 1**, *PLATE 11*) was not detailed on any of the As-built drawings available at the facility. No outlet pipe was observed in the wash rack catch basin during the site inspection. Standing water and debris were observed in the bottom of the catch basin. It is recommended that the catch basin be cleaned before the wash rack is used so that the drainage pathway can be verified. Wash water from a vehicle-wash rack must pass through an oil/water separator into the sanitary-sewer system to be in compliance.

There currently is no risk to surface waters of the State of Rhode Island from the vehicle-wash rack because it is not being used. The risk to surface water if the wash rack is reopened for use is unknown because the drainage pathway has not been confirmed.

3.0 Assessment-*Continued*

Table 3.9–Risk summary.

Storm drain no.	Location	Pollutant activity	Potentially pollutive materials	Outfall/Receiving water	Exposure type[1]	Rating/ Reason[2]
1	West of OMS	Vehicle washing (if used)	POL residue	Needs to be verified before use	G	No risk/c, g
2	North of OMS	POL storage, unloading	Fuel oil	None/Groundwater	E	No risk/g, h
10	East of USARC	POL storage, unloading	Fuel oil	None/Groundwater	E	No risk/g, h

[1] **Exposure type:**

A No exposure to precipitation or stormwater runoff.
B Direct exposure to precipitation due to lack of covering during storage.
C Direct exposure to stormwater runoff due to lack of containment during storage.
D Some indirect exposure to precipitation due to wash rack drainage system.
E Direct exposure to precipitation and runoff due to spills/leaks during material transfer.
F Direct exposure of wash rack drainage system to storm runoff due to lack of berming.
G Direct exposure of wash rack to precipitation due to lack of covering.
H Direct exposure to precipitation and stormwater runoff due to undetected leak during temporary storage.

[2] **Rating/Reason key:**

a Lack of preventive maintenance and visual inspection program.
b Lack of containment, allowing exposure to stormwater runoff.
c Lack of covering, allowing exposure to precipitation.
d Lack of employee training and/or awareness.
e Lack of spill kits, drip pans, sorbant, and/or other spill equipment.
f Proximity to storm-drain inlet or other conveyance.
g Not a point-source discharge to surface waters of the State.
h Potential for spills/leaks into exposed areas during material transfer.

4.0 BEST MANAGEMENT PRACTICES PLAN [RIPDES.IV.A]

Best Management Practices are measures and controls that can reduce potential stormwater pollution from industrial-activity pollutant sources. These BMPs are classified as "*baseline*" or "*advanced*" and they may be either inexpensive or costly to implement. Baseline BMPs include inspection programs and a contingency plan that attempts to identify and eliminate conditions and practices that could cause stormwater pollution. Advanced BMPs are techniques, equipment, or structures that eliminate contact between stormwater runoff and PPMs.

In the following sections, foundations are established for a BMPs program at the Quinta-Gamelin USARC. Most of these sections do not apply to the Quinta-Gamelin USARC because vehicle maintenance is not performed at this facility. These sections can be used for future reference or if the status of the facility changes. Baseline and advanced BMPs necessary for the implementation of the facility stormwater program are discussed and listed in table 4.0. The stormwater-inspection checklist (table 5.1b) should be used to monitor potential problems and to select BMPs.

4.1 BASELINE BEST MANAGEMENT PRACTICES

Baseline BMPs are relatively simple inspection programs and contingency plans that are implemented at a facility. The Facility Coordinator will perform monthly stormwater inspections. The 94th RSC is responsible for updating the spill plan, ensuring that Quinta-Gamelin USARC personnel receive environmental training, and conducting an annual compliance inspection of the facility. The following baseline programs are discussed briefly in this chapter and are included in the stormwater-inspection checklist provided in table 5.1b.

4.1.1 Good Housekeeping [RIPDES.IV.E.2.d]

Good housekeeping addresses cleanliness and orderliness of work and storage areas. Practicality guides the appropriate implementation of good-housekeeping practices.

4.1.2 Preventive Maintenance [RIPDES.IV.E.2.c]

Preventive maintenance involves an inspection of all vehicles and equipment for conditions that could lead to leaks or spills of PPMs. A technical inspection for fluid leaks or drips should be done for all incoming military vehicles and equipment. Military vehicles and equipment stored at the facility should be inspected daily for fluid leaks and drips. Maintenance equipment, oil/water separators (when present), storage tanks and drums, pipes, and pumps should be included in the technical inspection.

4.1.3 Spill Prevention and Response [RIPDES.IV.E.2.e]

The facility spill plan should be reviewed and revised by the 94th RSC for the Quinta-Gamelin USARC. The Facility Coordinator has the responsibility to serve as emergency-response spill coordinator in the event of a spill or leak. The Facility Coordinator should designate an alternate emergency coordinator when he/she is not present. The Facility Coordinator (or alternate) has the responsibility to ensure the spill is immediately contained, proper spill reporting procedures are followed, and the 94th RSC is immediately informed.

4.0 Best Management Practices Plan-*Continued*

4.1.4 Visual Inspections [RIPDES.IV.E.2.i]

A formal visual-inspection program is used to ensure that good housekeeping and preventive maintenance are actively practiced, and that a spill plan and spill-containment equipment are readily available at the facility. The Facility Coordinator should conduct a monthly visual inspection of the motor pool using the stormwater-inspection checklist. The 94th RSC should perform annual compliance inspections using the stormwater-inspection checklist.

4.1.5 Sediment and Erosion Control [RIPDES.IV.E.2.g]

The RIDEM General Permit requires identification of areas having a high potential for significant soil erosion and selection of measures (BMPs) to mitigate soil loss. Significant soil erosion was not observed at this facility.

4.1.6 Environmental Training [RIPDES.IV.E.2.h]

Headquarters, U.S. Army Reserve Command, has developed a video-based stormwater-training package. Annual stormwater training is mandated by Deputy Chief of Staff, Operations (Training Division) [DCSOPS (T)] for all reservists assigned to a facility with a stormwater permit. All civilian personnel who work within regulated areas also are required to attend this training. The training, using several videos supplied by the U.S. Army Reserve Command, can be implemented in two or more sessions during the year.

4.2 ADVANCED BEST MANAGEMENT PRACTICES

Advanced BMPs are techniques, equipment, structures, or construction practices that prevent hazardous materials or wastes from reaching the environment in stormwater runoff. All Army Reserve maintenance facilities employ advanced BMPs. Implementation of new advanced BMPs or maintenance and upkeep of existing advanced BMPs usually requires requisitions, work orders, or self-help initiatives. Identification, implementation, and upkeep of advanced BMPs involves communication among the Facility Coordinator, senior officers, and 94th RSC staff. The Facility Coordinator has the responsibility to work with unit, and 94th RSC personnel to identify necessary advanced BMPs and provide proper maintenance and upkeep for existing advanced BMPs. Also, the Facility Coordinator has the responsibility to inform senior officers of advanced BMP needs, and to submit and follow up on requisitions and work orders for those BMPs selected.

Table 4.0 details the status of the BMP program at the facility. Baseline and advanced BMPs can be prioritized according to need and scheduled by the PPT. "Recommended" BMPs in table 4.0 should be endorsed by the PPT as goals for 2001. The Facility Coordinator should initial and date the block indicating that the recommended BMP is accepted and is being implemented.

4.0 Best Management Practices Plan-*Continued*

Table 4.0—Best Management Practices.

Best management practice (BMP)	BMP type[1]	Implemented	Recommended improvements	Implemented by	Implementation date
Keep work areas and outside areas clean, free of easily spilled materials, and free of sediment and loose soil	GH	X			
Ensure that maintenance buildings and storage buildings are in good condition	GH	X			
Clean spilled materials with dry sweep or rags, not with water	GH	X			
Post good-housekeeping visual aids at the facility	GH		X		
Formally train military and civilian maintenance personnel in good-housekeeping practices	GH/TG		X		
Ensure that updated spill plan, emergency coordinator, and spill equipment are available at the facility during working hours	SPR		X		
In the event of a significant spill or leak during off-duty hours, the designated spill coordinator should refer to the spill plan	SPR		X		
Provide formal training in emergency spill response to all military and civilian maintenance personnel	SPR/TG		X		
Conduct a monthly visual inspection of the facility using the stormwater-inspection checklist. Sign, date, and retain with SWP3	VI		X		
Identify conditions that could cause stormwater pollution and report potential problems to the 94th RSC	VI		X		
Perform an annual stormwater-compliance inspection	VI		X		
Provide stormwater training for all military and civilian maintenance personnel	TG		X		
Find storm drain near northeastern corner of facility access road using a metal detector (**site 11**)	BBMP		X		
Clean storm drain (**site 11**) and storm-sewer pipe as necessary	ABMP		X		
Clean wash rack invert before using	ABMP		X		
Verify drainage pathway of vehicle-wash rack and bring into compliance with RIDEM regulations	ABMP		X		

[1]BMP type:

GH	Good Housekeeping	SPR	Spill Prevention and Response	SEC	Sediment Erosion and Control	BBMP	Baseline Best Management Practice
PM	Preventive Maintenance	VI	Visual Inspections	TG	Training	ABMP	Advanced Best Management Practice

5.0 IMPLEMENTATION [RIPDES.V.A]

This section establishes inspection and record-keeping programs that will bring the facility into compliance. Included in this chapter are a guide for implementing a stormwater program, a stormwater-log sheet for record keeping, a stormwater-inspection checklist to be used when performing monthly and annual stormwater inspections, and an annual compliance schedule. Table 5.0 presents key elements required to implement and evaluate the stormwater-management program, and includes columns for approval and scheduling of such activities by senior officials.

Table 5.0–Key elements to implement and evaluate the stormwater-management program.

Elements to implement stormwater-management program	By	Date
Assign top priority to: (1) correcting problems identified during the initial site assessment; and (2) establishing a stormwater-inspection and personnel-training program.		
Record significant stormwater-management activities on the stormwater-log sheet.		
The Facility Coordinator will perform monthly inspections. If the Facility Coordinator cannot correct the problem, recommendations for corrective actions will be made to the 94th RSC.		
Monthly inspection checklists will be reviewed, signed, and dated by the Facility Coordinator, and filed for future reference by compliance inspectors.		
Periodic stormwater-inspection reviews will be performed by the 94th RSC. Recommended corrective actions and employee training needs should be discussed.		
The Facility Coordinator should discuss equipment, construction, and training needs with senior officers and the 94th RSC. The Facility Coordinator should submit requisitions and work orders through proper channels.		
Employee training should be conducted.		
Advanced BMPs should be implemented.		
Personnel from the 94th RSC will conduct the annual compliance evaluations for the stormwater-management program and stormwater-plan reviews.		

5.1 STORMWATER-LOG SHEET AND -INSPECTION CHECKLIST [RIPDES.IV.E.2.j]

The stormwater-log sheet (table 5.1a) and stormwater-inspection checklist (table 5.1b) for facility operations are provided on the following pages. The log sheet and checklist are a permanent record of stormwater-management activities conducted at this facility. Items such as stormwater inspections, PPM spills, or activities related to implementation and maintenance of BMPs should be recorded on the log sheet. The inspection checklist is designed to reinforce the existing BMP program by assessing the effectiveness of implemented measures and controls. Regularly (monthly) updating logs and checklists will aid the facility in tracking pollutant sources, risks, and BMPs. The original documents should be signed and dated, and kept with the SWP3 at the facility for future reference during plan revisions or inquiries by 94th RSC, State, or Federal inspectors.

5.0 Implementation-*Continued*

Table 5.1a—Stormwater-log sheet.

Date	Initials	Narrative
Example: 1-1-00	EFD	PPM spill occurred at waste-oil aboveground-storage tank (AST). Twenty gallons spilled and 12 gallons recovered. Remaining spillage drained into sanitary-sewer system.

5.0 Implementation-*Continued*

Table 5.1b—Stormwater-inspection checklist.

Unit name:	Building name: Quinta-Gamelin USARC	Date:
Problems noted:		
Inspector's name:	Signature:	

Yes	No	Inspection item
		Do you see any evidence of recently spilled materials, either solid or liquid?
		Do you see any evidence of illegal dumping in storm-sewer system or storm drains?
		Are PPMs exposed to precipitation or stormwater runoff?
		Are drums, PPM storage structures, and secondary-containment units secure and properly labeled?
		Is a contract in place for the proper collection and disposal of spent PPMs generated at the OMS?
		Are military vehicles and equipment stored outdoors free of excessive mud and dirt?
		Do you see excess trash, unswept or cluttered work areas, or materials that can be easily spilled?
		Are there spots, pools, or other traces of PPMs on the ground?
		Do you see any leaking military vehicles, drums, tanks, dumpsters, or other equipment?
		Does standing water have an oil sheen or discoloration?
		Is vehicle/equipment washing or steam cleaning performed at the vehicle-wash rack?
		Has the vehicle-wash rack been brought into compliance with RIDEM regulations?
		Is an updated spill plan or standard operating procedure (SOP) posted on the shop bulletin board?
		Is spill-containment equipment readily accessible?
		Are monthly visual inspections performed and documented?
		Does stormwater runoff enter and cause problems inside shop and storage buildings?
		Is there any active soil erosion at the facility?
		Are there areas of standing water at the facility?
		Are any non-stormwater discharges entering the storm-sewer system or drainage ditches?
		Do outdoor PPM storage structures prevent contact with precipitation or stormwater runoff?
		Are secondary-containment units in use at new and used PPM storage areas?
		Are drip pans in use at the facility? Estimated percentage of vehicles with drip pans: _____%.
		Are conex boxes or milvans used to store new or used PPMs at this facility? If yes, please give the number of conex boxes or milvans in use: _____
		Are visual aids such as stormwater posters and warning signs displayed at the facility?
		Is environmental training provided for personnel working at the facility?

Corrective actions needed:		
Reviewer's name:	Signature:	Date:

5.0 Implementation-*Continued*

5.2 ANNUAL COMPLIANCE INSPECTION [RIPDES.IV.E.3]

The SWP3 should be updated annually or more often, as required. The 94th RSC is charged with conducting compliance evaluations and updating the plan. Major tasks include (1) reviewing updated site information (including stormwater-log sheets and stormwater-inspection forms), (2) reinspecting industrial-activity and pollutant-source areas and outfalls, (3) updating information about those areas and the PPMs inventory, (4) conducting non-stormwater-discharge inspections of outfalls, (5) re-evaluating the use of BMPs and recommending additional controls (if necessary), and (6) convening the PPT to review stormwater issues and problems. The compliance update also allows the PPT to assess and update training needs. Table 5.2 provides information on conducting the evaluations.

Table 5.2–Annual compliance schedule.

Compliance element	Conducted by	Start date	Completion date
Review monthly stormwater-inspection checklists completed by the Facility Coordinator			
Review site assessment in SWP3 and update as necessary (outfalls, sources, PPMs, site map)			
Review implementation status of BMPs in SWP3 and update as necessary			
Based on updates to implemented BMPs, update recommended BMPs			
Review and update regulatory information in the SWP3 if necessary			
Conduct NSWD assessment and certification of regulated outfalls			
Conduct stormwater sampling of regulated outfalls if required. (Consult RIDEM and RIDEM General Permit for information.)			
Complete report of compliance findings and sample results, and file			

6.0 APPENDIX

Table 6.0–Non-stormwater discharge certification.

Non-stormwater discharge certification			Completed by: Agency: Date:		Team Comprised of MARC, USGS, YRD 16 May 2006	
Date of test or evaluation	Outfall directly observed during the test	Method used to test or evaluate the discharge	Describe test results for the presence of non-stormwater discharge	Identify potential significant sources	Agency conducting test or evaluation	Recommended action
	None					

I certify that periodic NSWD inspections will be performed at the Quinta-Gamelin USARC and conducted in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information that is collected. Additionally, I certify the NSWD information listed in this table is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Title of Certifying Authority	B. Area Code and Telephone Number
C. Signature Certifying Authority	D. Date Signed

6.0 Appendix-*Continued*

Figure 6.0—Photolog.

PLATE 1: Asylum Road, facing west

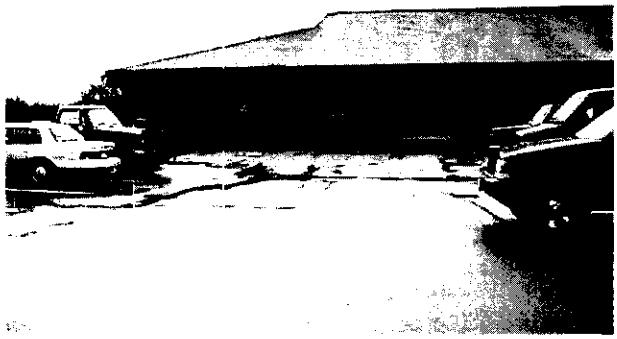


PLATE 2: Quinta-Gamelin U.S. Army Reserve Center, Bristol, Rhode Island

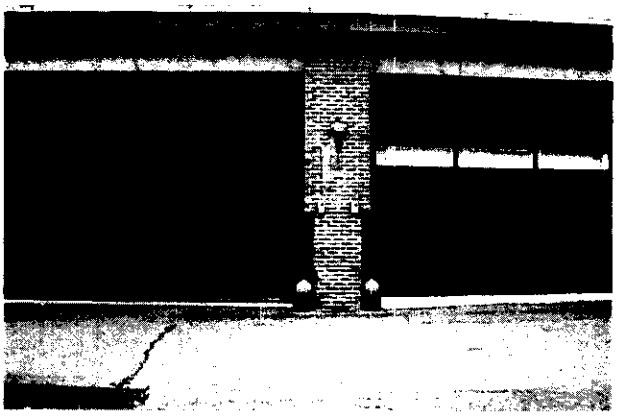


PLATE 3: Organizational Maintenance Shop (OMS)

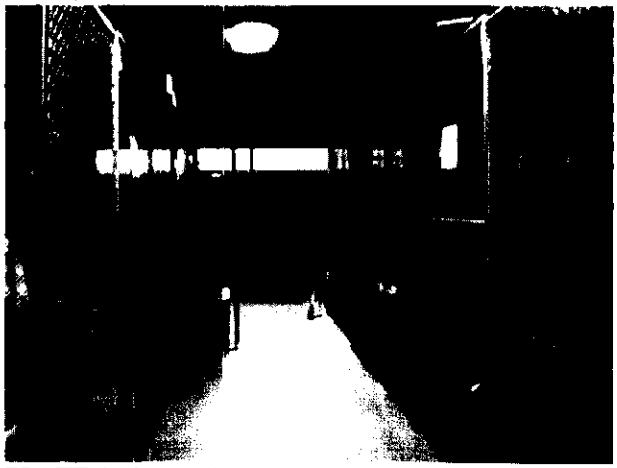


PLATE 4: Storage in OMS (**site 4**)

PLATE 5: Classroom inside OMS (**site 5**)

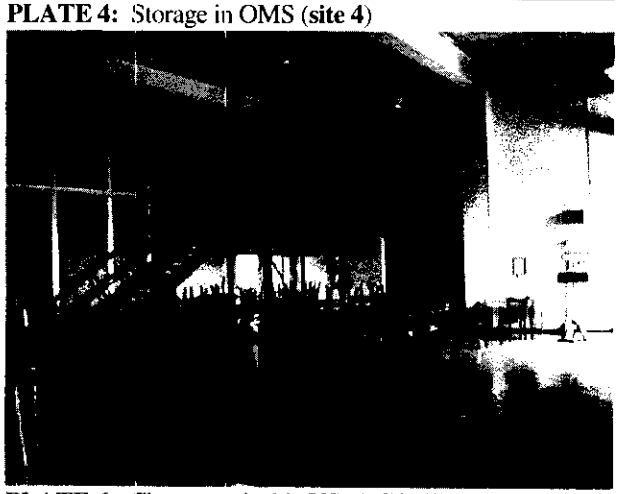


PLATE 6: Classroom inside USARC building (**site 9**)

6.0 Appendix-*Continued*

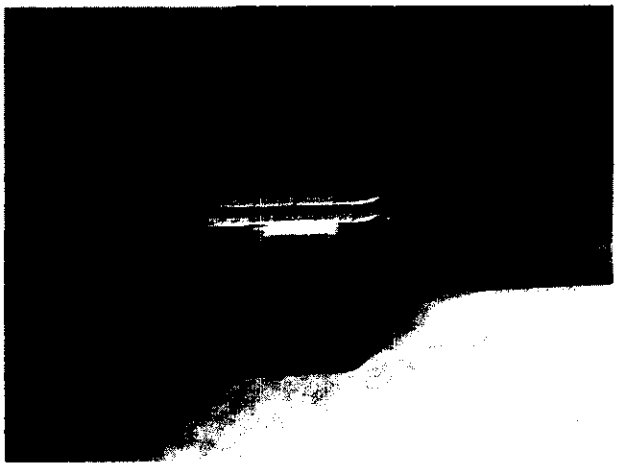


PLATE 7: Speedy Dry® in USARC boiler room (**site 6**)

PLATE 8: Rolling spill kit in USARC boiler room (**site 7**)

PLATE 9: Floor drain in USARC boiler room

PLATE 10: New flammables storage cabinet

PLATE 11: Unused vehicle-wash rack (**site 1**)

PLATE 12: 1,000-gallon UST north of the OMS (**site 2**)

6.0 Appendix-*Continued*

PLATE 13: Propane Tanks (**site 3**)

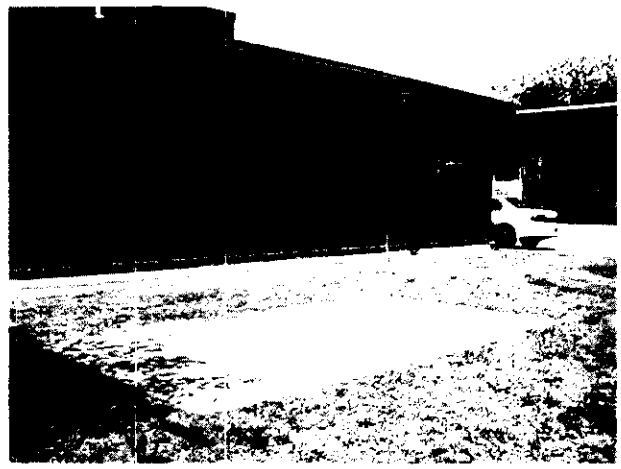


PLATE 14: 3,000-gallon UST east of USARC (**site 10**)

PLATE 15: Approximate location of buried storm drain (**site 11**) and contributing area to drain

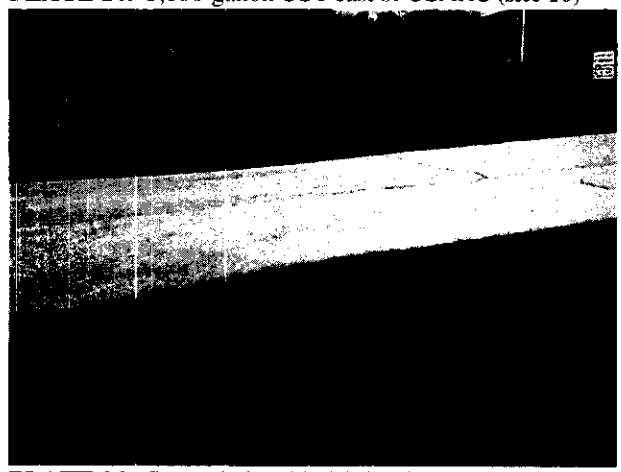


PLATE 16: Storm drain with debris (**site 12**)

PLATE 17: 5,000-gallon septic tank (**site 13**)

PLATE 18: Distribution box and leach field (**site 14**)

6.0 Appendix-*Continued*

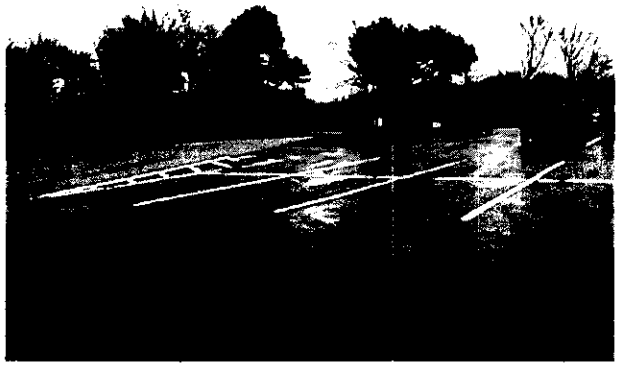


PLATE 19: POV parking area, facing southeast

PLATE 20: GSA parking area, facing southeast

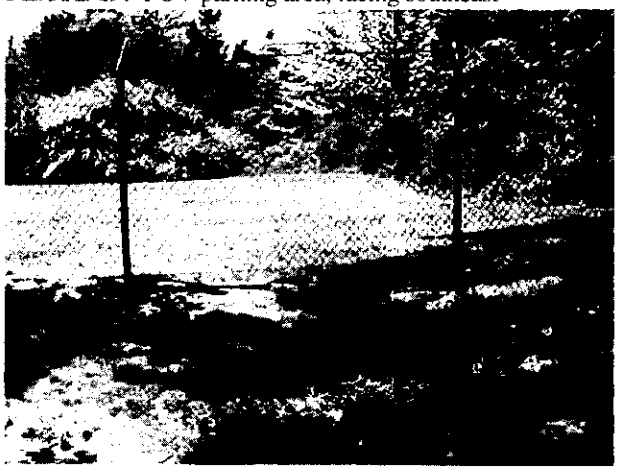


PLATE 21: (OF-1) - Unregulated

PLATE 22: Contributing area to OF-1

PLATE 23: (OF-2) - Unregulated

PLATE 24: Pond near western property line, facing west – discharge from OF-2 enters pond near here

6.0 Appendix-*Continued*

PLATE 25: Pond near western property line, facing east

PLATE 26: East Bay Bike Path and gravel drainage swale, facing northwest

PLATE 27: Potential discharge area from pond into the gravel drainage swale

PLATE 28: Second potential discharge area from pond into gravel drainage swale

PLATE 29: (OF-3) - Unregulated

PLATE 30: Drainage pathway from OF-3 down grass median between westbound and eastbound lanes of Asylum Road

Appendix E

Regulatory Database Search Reports

STATE OF RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
235 PROMENADE STREET
PROVIDENCE, RI 02908
(401) 222-2797

TELEFAX TRANSMITTAL COVER SHEET
RI DEM FAX NUMBER: (401) 222-3813

DATE: 08/16/2006

TO: Osaguona Ogbebor
CH2MHILL

FROM: Gregory Yekhtikian, Ext. 7521

RE: U.S. Army Reserve Center
Asylum Road
Bristol, Rhode Island
RI DEM UST Facility ID #01663

MESSAGE: I am faxing a copy of the 1988 Certificate of Closure for the 3,000 gallon fuel oil UST. I am also faxing the 2000 scheduling letter, cover letter from the Department of the Army, and RI DEM UST Closure Inspection Checklist for the removal of one (1) 3,000 gallon fuel oil UST and one (1) 1,000 gallon fuel oil UST.

Please direct any questions on the 2000 closures to Michael Cote of RI DEM Office of Waste Management (401-222-2797 ext. 7118).

NUMBER OF PAGES INCLUDING THIS COVER SHEET: 5

PLEASE CONFIRM RECEIPT OF FAX: YES __ NO √

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF GROUNDWATER AND FRESHWATER WETLANDS
291 Promenade Street
Providence, Rhode Island 02908
(401) 277-2234

1663

FACILITY ID 1663

New Tank to be inst

CERTIFICATE OF CLOSURE FOR UNDERGROUND STORAGE FACILITIES

In compliance with Chapter 46-12 of the Rhode Island General Laws, as amended, and the Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials,

Armory / Reserves

owner/operator of an underground storage facility located at

Asylum Rd
Bristol

is issued this Certificate of Closure indicating that the storage tanks described below have been taken out of service permanently, in compliance with the Regulations for Underground Storage Facilities Used for Petroleum Products and Hazardous Materials.

TANK ID NUMBER	VOLUME	STORED MATERIAL	DATE LAST USED	STATUS OF TANK F=Filled R=Removed
1	3000	Heating	5/1/88	R
			/ /	
			/ /	
			/ /	
			/ /	

Signed this 16th day of May, 1988

Reviewed by: Peter Sullivan

Approved: for S. Morin
Chief, Division of Groundwater and Freshwater Wetlands
Department of Environmental Management

CLOSE1 _____

CLOSE2 _____

CLOSE2 _____

#1663

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767 TDD 401-831-5508

Robert Gagnon, Fac. Mgr.
Quinta-Gamelin U.S. Army Reserve Center
Asylum Road
Bristol, RI 02809

September 29, 2000

RE: Underground Storage Tank Closure (UST # 1663)
Quinta-Gamelin U.S. Army Reserve Center
Asylum Road
Bristol, RI 02809

Dear Mr. Gagnon;

The Office of Waste Management has reviewed the Permanent Closure Application For Underground Storage Tank(s) for the above referenced property. The following UST(s) are approved to be closed on Thursday, October 5, 2000.

UST ID#	VOLUME/ GALS.	STORED MATERIAL	REMOVED/ FILLED
003	3,000	#2 fuel oil	removal
002	1,000	#2 fuel oil	removal

All USTs are to be removed and handled as described in the closure application. This approval letter along with a copy of the UST Closure Application must accompany the tank(s) during transit to the proper disposal facility.

Your contractor is required to contact the DEM inspector, Michael Cote , on the day of the UST closure for verification. If you have any questions or need additional information feel free to contact at (401) 222-2797, extension 7118 .

Sincerely,

Bruce T. Catterall, P.E.
Supervising Engineer
Office of Waste Management

Cc: A. Ramos, OWM
M. Cote
Resource Controls(Nobis Engineering.)

DEPARTMENT OF THE ARMY
HEADQUARTERS, 94TH REGIONAL SUPPORT COMMAND
50 SHERMAN AVENUE
DEVENS, MASSACHUSETTS 01433-4000

REPLY TO
ATTENTION OF:

AFRC-CMA-EN-E (200-1)

7 September, 2000

Chief, David Sylvaria
Town of Bristol, Fire Department
75 River Street, P.O. Box 775
Bristol, RI 02809

RE: Removal of 3,000-gallon and 1,000-gallon Underground Heating Oil Tank
Quinta-Gamelin U.S. Army Reserve Center, Bristol, RI - USARC
Asylum Road

Dear Chief Sylvaria,

The U.S. Army Reserve 94th Regional Support Command (94th RSC) plans to remove the above-referenced heating oil tanks in late-September. They are being removed because both the existing Reserve Center (RC) and Organizational Maintenance Shop (OMS) buildings have been converted to natural gas.

However, due to scheduling conflicts with activities at the Reserve Center, we would like to have the contractor expedite the schedule to remove the tanks tentatively during the week of September 18, 2000. Pending concurrence from you and Nancy Langlois of the Rhode Island Department of Environmental Management (RIDEM), we will be able to meet this schedule.

As such, attached please find the RIDEM Permanent Closure Application for Underground Storage Tanks requiring your signature.

Also, attached please find a pre-paid, pre-addressed Fed Ex label to submit the application to Nancy Langlois at RIDEM following your signature.

In order to allow as much notice as possible for RIDEM's approval of the expedited schedule, could you please fax a copy of this to me at (978) 796-2606 or to Nancy Langlois (RIDEM) at fax # (401) 222-3813).

Also, attached please find a pre-paid, pre-addressed FedEx label to submit the application to Nancy Langlois at RIDEM. Your assistance will be greatly appreciated.

If you have any questions, please call me at Steve Lombardi at (978) 796 - 2607.

Regards,

Stephen D. Lombardi, ENSR
Technical Support to the 94th RSC

Attachments

Cc: Nancy Langlois, RIDEM

Rhode Island Department of Environmental Management
Underground Storage Tank Section
UST CLOSURE INSPECTION CHECKLIST

UST Facility ID#: 1663 LUST#: _____

Site/Street: Quinta - Gamelin Army Res. Asylum Rd Bristol

Contractor: Resource Control

Consultant: Nobis

Contact: Robert Gagnon 253-0451

Condition of Tank/Piping: not present

Condition of Soils:

Other Observations:

Groundwater Present: __YES __NO Sheen Present: __YES __NO

Free Product Visible: ___YES ___NO Measurement: _____

Site Sketch:

RESULTS OF INSPECTION/ACTION REQUIRED

__ Minor Staining, Soils Removed

__ Soils Required Excavation, contained, disposed of in accordance with state regulations

__ Site Investigation Report Required w/ groundwater monitoring wells

__ Other

__ Additional Tanks Found/Fees Owed: _____

✓ Closure Assessment Required

__ Leak/release observed, notification to LUST Program

__ Issue Certificate of Closure
No Further Action Recommended

Inspector: Michael Cote

Signature: Michael Cote Date: 10-5-00

The EDR Radius Map
with GeoCheck®

Quinta-Gamelin USARC
ASYLUM ROAD
BRISTOL, RI 02809

Inquiry Number: 01714247.206r

July 28, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

ASYLUM ROAD
BRISTOL, RI 02809

COORDINATES

Latitude (North):	41.687525 - 41° 41' 15.1''
Longitude (West):	71.285949 - 71° 17' 9.4''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	309748.7
UTM Y (Meters):	4617395.0
Elevation:	47 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	41071-F3 BRISTOL, RI
Most Recent Revision:	1975

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 6 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
US ARMY RESERVE TRAINING CENTER ASYLUM RD BRISTOL, RI	UST	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
Delisted NPL ---------- National Priority List Deletions

EXECUTIVE SUMMARY

NPL RECOVERY	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
RCRA-TSDF	Resource Conservation and Recovery Act Information
RCRA-LQG	Resource Conservation and Recovery Act Information
RCRA-SQG	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SWF/LF	Solid Waste Management Facilities
AST	Aboveground Storage Tanks
MANIFEST	Manifest information
SPILLS	Oil & Hazardous Material Response Log/Spill Report
AUL	ELUR Listing
BROWNFIELDS	Brownfields Site List
NPDES	Permit and Facility Data
AIRS	Air Emissions Listing
LEAD	Lead Inspections Database

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/15/2006 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ALBIN MANUFACTURING INC.	***47 GOODING AVENUE***	***1/2 - 1 NE***	***A7***	***8***

STATE AND LOCAL RECORDS

The State Hazardous Waste Sites records. The data come from the Dept. of Env. Management.

A review of the SHWS list, as provided by EDR, and dated 04/05/2006 has revealed that there are 7 SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
RICCOTTI'S Facility Status: Inactive	9-11 GOODING AVENUE	1/2 - 1 NE	3	6
STRIP MALL Facility Status: Active	15 GOODING AVENUE	1/2 - 1 NE	4	6
ROMARINE, INC. Facility Status: Active	24 VERNDALE CIRCLE	1/2 - 1 NE	5	7
MAISANO OIL Facility Status: Inactive	***45 GOODING AVE***	***1/2 - 1 NE***	***A6***	***7***
RYDER C.E. CORPORATION Facility Status: Inactive Facility Status: Inactive	47 GOODING AVENUE	1/2 - 1 NE	A8	16

Lower Elevation	Address	Dist / Dir	Map ID	Page
TOPSIDE LOUNGE, INC. Facility Status: Inactive	***805 HOPE ST***	***1/2 - 1 SSE***	***9***	***16***
NATIONAL GRID - HOPE ST MGP Facility Status: Active	HOPE / WASHINGTON STR	1/2 - 1 SSE	10	17

EXECUTIVE SUMMARY

LUST: Leaking Underground Storage Tank Facilities.

A review of the LUST list, as provided by EDR, and dated 04/05/2006 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SUNOCO STATION	1064 HOPE STREET	1/4 - 1/2 E	2	6

Facility Status: Active; Investigation/Remed. Required
Facility Status: Inactive; Investigation/Remed. Complete,No Further Action Required

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
BRISTOL NIKE CONTROL (PR-38C) NO FILE	SHWS
BRISTOL NIKE LAUNCH (PR-38L)	SHWS
BRISTOL NIKE LAUNCHER AREA	SHWS
GOETZ SAILBOATS	SHWS, AUL
GEORGE PATTON ASSOCIATES	SHWS, AUL
BUTTONWOOD INDUSTRIAL - MINER	SHWS
JACK'S SALVAGE & AUTO PARTS	SHWS
PERRY-WOOD STREET DUMP	SHWS
THAMES STREET	SHWS, SPILLS, AUL
BRISTOL HARBOR (C80123)	CERCLIS, FINDS
TOWN OF BRISTOL SANITARY	SWF/LF
WATKINSON AUTOMOTIVE	UST

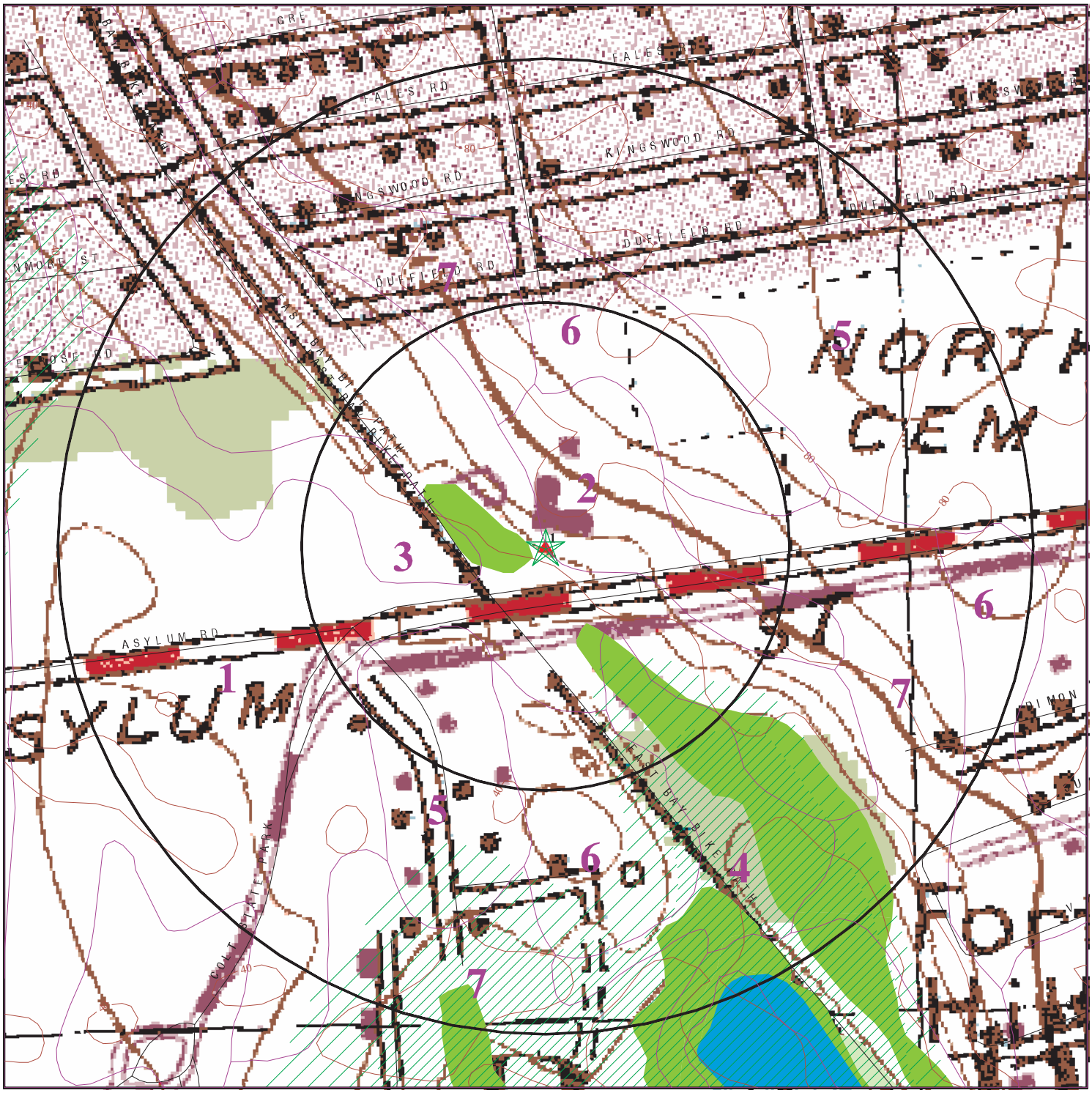
OVERVIEW MAP - 01714247.206r

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Quinta-Gamelin USARC	CLIENT: CH2M Hill
ADDRESS: ASYLUM ROAD BRISTOL RI 02809	CONTACT: Mary Beth Jacques INQUIRY #: 01714247.206r
LAT/LONG: 41.6875 / 71.2859	DATE: July 28, 2006

DETAIL MAP - 01714247.206r



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Quinta-Gamelin USARC	CLIENT: CH2M Hill
ADDRESS: ASYLUM ROAD BRISTOL RI 02809	CONTACT: Mary Beth Jacques
LAT/LONG: 41.6875 / 71.2859	INQUIRY #: 01714247.206r DATE: July 28, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL RECOVERY		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	1	NR	1
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
ICIS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
State Haz. Waste		1.000	0	0	0	7	NR	7
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	1	NR	NR	1
UST	X	0.250	0	0	NR	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
MANIFEST		0.250	0	0	NR	NR	NR	0
SPILLS		TP	NR	NR	NR	NR	NR	0
AUL		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
NPDES		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
LEAD		TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **US ARMY RESERVE TRAINING CENTER** **UST** **U001211995**
Target Property **ASYLUM RD** **N/A**
BRISTOL, RI

Actual: 47 ft.

UST:

Facility ID:	1663	Tank ID:	1
Tank Status:	Permanently Closed	Tank Capacity:	3000 Gals
Tank Substance:	HEATING OIL NO.2	Date Installed:	1971-03-01 00:00:00
Facility ID:	1663	Tank ID:	2
Tank Status:	Permanently Closed	Tank Capacity:	1000 Gals
Tank Substance:	HEATING OIL NO.2	Date Installed:	1971-03-01 00:00:00
Facility ID:	1663	Tank ID:	3
Tank Status:	Permanently Closed	Tank Capacity:	1000 Gals
Tank Substance:	HEATING OIL NO.2	Date Installed:	1971-03-01 00:00:00

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2 **SUNOCO STATION** **LUST** **S102068307**
East **1064 HOPE STREET** **N/A**
1/4-1/2 **BRISTOL, RI**
1891 ft.

Relative: Higher

Actual: 61 ft.

LUST:

Project Number: 0204A-LS
Project Date: 1/3/2004
Tank Status: Active; Investigation/Remed. Required

Project Number: 0204-LS
Project Date: 9/14/1988
Tank Status: Inactive; Investigation/Remed. Complete, No Further Action Required

---

3 **RICCOTTI'S** **SHWS** **S103246864**
NE **9-11 GOODING AVENUE** **N/A**
1/2-1 **BRISTOL, RI**
2813 ft.

Relative: Higher

Actual: 94 ft.

HWS:

Facility Status: Inactive
Project Code: RCTI-HWM
Project Code Desc: State
Project Date: 7/26/1996

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4 **STRIP MALL** **SHWS** **S104280464**
NE **15 GOODING AVENUE** **N/A**
1/2-1 **BRISTOL, RI**
2970 ft.

Relative: Higher

Actual: 77 ft.

HWS:

Facility Status: Active
Project Code: STRP-HWM
Project Code Desc: State
Project Date: 10/4/1999

5
NE
1/2-1
3520 ft.

ROMARINE, INC.
24 VERNDALE CIRCLE
BRISTOL, RI

SHWS

S103349908
N/A

Relative:
Higher

Actual:
87 ft.

HWS:
Facility Status: Active
Project Code: ROM-HWM
Project Code Desc: State
Project Date: Not reported

A6
NE
1/2-1
3705 ft.

MAISANO OIL
45 GOODING AVE
BRISTOL, RI 02809

RCRA-SQG
SHWS
FINDS
MANIFEST

1000801610
RID987492303

Site 1 of 3 in cluster A

Relative:
Higher

Actual:
93 ft.

RCRAInfo:
Owner: BUCKLEY & SCOTT INC
(401) 421-4541
EPA ID: RID987492303

Contact: IRVING HANDRIGAN
(401) 253-7550

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HWS:
Facility Status: Inactive
Project Code: MAI-HWM
Project Code Desc: State
Project Date: Not reported

RI MANIFEST:

Manifest Docket Number:	MAG120336
Waste Description:	OILY MAT
Quantity:	10.00
WT/Vol Units:	Y
Item Number:	1
Transporter Name:	CYN
Transporter EPA ID:	MAD082303777
ID:	320515
GEN Cert Date:	10/22/1992 0:00:00
Transporter Recpt Date:	Not reported
Transporter 2 Recpt Date:	Not reported
TSDF Recpt Date:	Not reported
EPA ID:	RID987492303
Number Of Containers:	0
Container Type:	Not reported
Waste Code1:	MA01
Waste Code2:	Not reported
Waste Code3:	Not reported

MAISANO OIL (Continued) **1000801610**

Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	JET LINE
TSDF ID:	MAD062179890
Data Source:	Not reported
Date Imported:	Not reported
Transporter 2 Name:	Not reported
Transporter 2 ID:	Not reported
Quantity in LBS.:	0
Fee Reported:	Not reported
Manifest Docket Number:	MAG120440
Waste Description:	OILY MAT
Quantity:	12.00
WT/Vol Units:	Y
Item Number:	1
Transporter Name:	CYN
Transporter EPA ID:	MAD082303777
ID:	320518
GEN Cert Date:	10/22/1992 0:00:00
Transporter Recpt Date:	Not reported
Transporter 2 Recpt Date:	Not reported
TSDF Recpt Date:	Not reported
EPA ID:	RID987492303
Number Of Containers:	0
Container Type:	Not reported
Waste Code1:	MA01
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	JET LINE
TSDF ID:	MAD062179890
Data Source:	Not reported
Date Imported:	Not reported
Transporter 2 Name:	Not reported
Transporter 2 ID:	Not reported
Quantity in LBS.:	0
Fee Reported:	Not reported

A7
NE
1/2-1
3742 ft.

Relative:
Higher

Actual:
99 ft.

ALBIN MANUFACTURING INC.
47 GOODING AVENUE
BRISTOL, RI 02809

Site 2 of 3 in cluster A

RCRA-SQG **1000210010**
FINDS **RID050323260**
CORRACTS
CERC-NFRAP
MANIFEST
CT MANIFEST
NY MANIFEST

ALBIN MANUFACTURING INC. (Continued) **1000210010**

CERCLIS-NFRAP Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Code: NFRAP
NPL Status: Not on the NPL
Site Description: NFRAP Low Score
CERCLIS-NFRAP Assessment History:

Assessment:	DISCOVERY	Completed:	07/30/1991
Assessment:	PRELIMINARY ASSESSMENT	Completed:	09/30/1992
Assessment:	SITE INSPECTION	Completed:	08/14/2003
Assessment:	ARCHIVE SITE	Completed:	08/19/2003

CERCLIS-NFRAP Alias Name(s):
C.E. RYDER CORP.

CORRACTS Data:

EPA Id: RID050323260
Region: 01
Area Name: ENTIRE FACILITY
Actual Date: 10/04/2000
Corrective Action: CA210SF - CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA
2002 NAICS Title: Not reported

EPA Id: RID050323260
Region: 01
Area Name: ENTIRE FACILITY
Actual Date: 11/23/1992
Corrective Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
2002 NAICS Title: Not reported

RCRAInfo Corrective Action Summary:
Event: CA Responsibility Referred To A Non-RCRA Federal Authority, Corrective Action at the facility or area referred to CERCLA.
Event Date: 10/04/2000

Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 11/23/1992

RCRAInfo:
Owner: CLARKE RYDER
(401) 253-8554
EPA ID: RID050323260

Contact: KENNETH UPHAM
(401) 253-8554

Classification: Small Quantity Generator
TSDF Activities: Not reported

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Violation Status: Violations exist

Regulation Violated: 5.04, 262.33
Area of Violation: GENERATOR-PRE-TRANSPORT REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.02, 262.34
Area of Violation: GENERATOR-PRE-TRANSPORT REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.02, 264.175
Area of Violation: CONTAINER MGT=SAT'LITE ACCUMS/CONTAINER
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.02, 265.173
Area of Violation: CONTAINER MGT=SAT'LITE ACCUMS/CONTAINER
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.05
Area of Violation: GENERATOR-OTHER REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.02, 265.16
Area of Violation: PERSONNEL TRAINING RECORDS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.02,262.34(a)(4), 265 Sub D
Area of Violation: CONTINGENCY PLAN
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Regulation Violated: 5.01
Area of Violation: GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.06, 262.40
Area of Violation: GENERATOR-MANIFEST REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: 5.09
Area of Violation: GENERATOR-MANIFEST REQUIREMENTS
Date Violation Determined: 12/29/1999
Actual Date Achieved Compliance: 05/12/2000

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/17/2000
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/02/1989
Actual Date Achieved Compliance: 03/18/1999

Enforcement Action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 03/28/1989
Penalty Type: Final Monetary Penalty

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/02/1989
Actual Date Achieved Compliance: 03/18/1999

Enforcement Action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 03/28/1989
Penalty Type: Final Monetary Penalty

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/09/1987
Actual Date Achieved Compliance: 03/18/1999

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/28/1984
Actual Date Achieved Compliance: 02/26/1985

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/29/1984
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 08/21/1984
Actual Date Achieved Compliance: 03/18/1999

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Enforcement Action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 10/12/1984
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 08/21/1984
Actual Date Achieved Compliance: 03/18/1999

There are 16 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-PRE-TRANSPORT REQUIREMENTS	20000512
	GENERATOR-PRE-TRANSPORT REQUIREMENTS	20000512
	CONTAINER MGT=SAT'LITE ACCUMS/CONTAINER	20000512
	CONTINGENCY PLAN	20000512
	PERSONNEL TRAINING RECORDS	20000512
	CONTAINER MGT=SAT'LITE ACCUMS/CONTAINER	20000512
	GENERATOR-OTHER REQUIREMENTS	20000512
	GENERATOR-GENERAL REQUIREMENTS	20000512
	GENERATOR-MANIFEST REQUIREMENTS	20000512
	GENERATOR-MANIFEST REQUIREMENTS	20000512
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19990318
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19990318
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19990318
Non-Financial Record Review	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19850226
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19990318
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19990318

FINDS:

Other Pertinent Environmental Activity Identified at Site:

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RI MANIFEST:

Manifest Docket Number: RIB0009192
Waste Description: FLAM SOL
Quantity: 290.00
WT/Vol Units: P
Item Number: 1
Transporter Name: GM GANNON
Transporter EPA ID: RID051508034
ID: 361280
GEN Cert Date: 11/22/1989 0:00:00

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Transporter Recpt Date:	Not reported
Transporter 2 Recpt Date:	Not reported
TSDF Recpt Date:	Not reported
EPA ID:	RID050323260
Number Of Containers:	0
Container Type:	Not reported
Waste Code1:	F003
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	CHEM PAK
TSDF ID:	RID084802842
Data Source:	Not reported
Date Imported:	Not reported
Transporter 2 Name:	Not reported
Transporter 2 ID:	Not reported
Quantity in LBS.:	0
Fee Reported:	Not reported

Manifest Docket Number:	RIB0009193
Waste Description:	FLAM SOL
Quantity:	290.00
WT/Vol Units:	P
Item Number:	1
Transporter Name:	GM GANNON
Transporter EPA ID:	RID051508034
ID:	361281
GEN Cert Date:	12/11/1989 0:00:00
Transporter Recpt Date:	Not reported
Transporter 2 Recpt Date:	Not reported
TSDF Recpt Date:	Not reported
EPA ID:	RID050323260
Number Of Containers:	0
Container Type:	Not reported
Waste Code1:	F003
Waste Code2:	Not reported
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	CHEM PAK
TSDF ID:	RID084802842
Data Source:	Not reported
Date Imported:	Not reported
Transporter 2 Name:	Not reported
Transporter 2 ID:	Not reported
Quantity in LBS.:	0
Fee Reported:	Not reported

Manifest Docket Number:	CTF1001576
Waste Description:	PAINT MAT/ACETONE

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Quantity:	110.00
WT/Vol Units:	G
Item Number:	1
Transporter Name:	UNITED IND SVS
Transporter EPA ID:	CTD021816889
ID:	106072
GEN Cert Date:	3/29/2001 0:00:00
Transporter Recpt Date:	Not reported
Transporter 2 Recpt Date:	Not reported
TSDF Recpt Date:	Not reported
EPA ID:	RID050323260
Number Of Containers:	0
Container Type:	Not reported
Waste Code1:	F005
Waste Code2:	F003
Waste Code3:	Not reported
Waste Code4:	Not reported
Waste Code5:	Not reported
Waste Code6:	Not reported
Comment:	Not reported
Fee Exempt Code:	Not reported
TSDF Name:	UNITED OIL RECOVERY INC
TSDF ID:	CTD021816889
Data Source:	JAN
Date Imported:	8/14/2001 9:00:35
Transporter 2 Name:	Not reported
Transporter 2 ID:	Not reported
Quantity in LBS.:	880
Fee Reported:	Not reported

CT MANIFEST:

Year:	2004
Manifest ID:	CTF1052292
TSDF EPA ID:	CTD021816889
TSDF Name:	UNITED OIL RECOVERY, INC.
TSDF Address:	14 WEST MAIN STREET
TSDF City,St,Zip:	MERIDEN, CT 06451
TSDF Country:	USA
TSDF Telephone:	(203)238-6745
Transport Date:	07/20/04
Transporter EPA ID:	CTD021816889
Transporter Name:	UNITED OIL RECOVERY, INC.
Transporter Country:	USA
Transporter Phone:	(203)238-6745
Trans 2 Date:	/ /
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
Trans 2 Address:	Not reported
Trans 2 City,St,Zip:	CT
Trans 2 Country:	USA
Trans 2 Phone:	Not reported
Generator EPA ID:	RID050323260
Gererator Phone:	4012537300
Generator Address:	47B GOODING AVE
Generator City,State,Zip:	BRISTOL, RI 02809
Generator Country:	USA

ALBIN MANUFACTURING INC. (Continued) **1000210010**

Special Handling:	Not reported
Discrepancies:	Not reported
Date Shipped:	07/20/04
Date Received:	07/26/04
Last modified date:	01/26/05
Last modified by:	CYF
Comments:	Not reported

Click this hyperlink while viewing on your computer to access
16 additional CT MANIFEST: record(s) in the EDR Site Report.

NY MANIFEST:

Document ID:	NYA3449474
Manifest Status:	C
Trans1 State ID:	RI12810
Trans2 State ID:	Not reported
Generator Ship Date:	860807
Trans1 Recv Date:	860807
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	860808
Part A Recv Date:	860813
Part B Recv Date:	860814
Generator EPA ID:	RID050323260
Trans1 EPA ID:	RID000769711
Trans2 EPA ID:	Not reported
TSDF ID:	NYD080469935
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Quantity:	01265
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100
Year:	86
Facility Type:	Generator
EPA ID:	RID050323260
Facility Name:	C E RYDER CORPORATION
Facility Address:	47 GOODING AVENUE
Facility City:	BRISTOL
Facility Zip 4:	Not reported
Country:	Not reported
County:	Not reported
Mailing Name:	C E RYDER CORPORATION
Mailing Contact:	Not reported
Mailing Address:	47 GOODING AVENUE
Mailing City:	BRISTOL
Mailing State:	RI
Mailing Zip:	02809
Mailing Zip4:	Not reported
Mailing Country:	Not reported
Mailing Phone:	401-253-8554

Click this hyperlink while viewing on your computer to access
additional NY MANIFEST: detail in the EDR Site Report.

A8
NE
1/2-1
3742 ft.

Relative:
Higher

Actual:
99 ft.

RYDER C.E. CORPORATION — **SHWS** — **S106113894**
47 GOODING AVENUE — **N/A**
BRISTOL, RI

Site 3 of 3 in cluster A

HWS:
Facility Status: **Inactive**
Project Code: RCEC-HWM
Project Code Desc: State
Project Date: 3/31/2003

Facility Status: **Inactive**
Project Code: RCEC-SFA
Project Code Desc: Cercla
Project Date: 7/30/1991

9
SSE
1/2-1
4047 ft.

Relative:
Lower

Actual:
8 ft.

TOPSIDE LOUNGE, INC. — **SHWS** — **U003207925**
805 HOPE ST — **LUST** — **N/A**
BRISTOL, RI — **UST**
AUL

HWS:
Facility Status: **Inactive**
Project Code: TOPS-HWM
Project Code Desc: State
Project Date: 4/10/1997

LUST:
Project Number: 0221-LS
Project Date: 3/12/1997
Tank Status: **Inactive; Investigation/Remed. Complete, No Further Action Required**

RI AUL:
ELUR Date : 1998-03-02
Count Of Town : 1
Facility Size (Acres) : 0.88

UST:

Facility ID:	18179	Tank ID:	1
Tank Status:	Permanently Closed	Tank Capacity:	1500 Gals
Tank Substance:	GASOLINE	Date Installed:	2001-04-25 00:00:00
Facility ID:	18179	Tank ID:	2
Tank Status:	Permanently Closed	Tank Capacity:	1500 Gals
Tank Substance:	UNKNOWN	Date Installed:	2001-04-25 00:00:00
Facility ID:	18179	Tank ID:	3
Tank Status:	Permanently Closed	Tank Capacity:	3000 Gals
Tank Substance:	GASOLINE	Date Installed:	2001-04-25 00:00:00
Facility ID:	18179	Tank ID:	4
Tank Status:	Permanently Closed	Tank Capacity:	3000 Gals
Tank Substance:	GASOLINE	Date Installed:	2001-04-25 00:00:00
Facility ID:	18179	Tank ID:	5
Tank Status:	Permanently Closed	Tank Capacity:	1000 Gals
Tank Substance:	GASOLINE	Date Installed:	2001-04-25 00:00:00

TOPSIDE LOUNGE, INC. (Continued) **U003207925**

Facility ID: 18179
Tank Status: Permanently Closed
Tank Substance: GASOLINE
Tank ID: 6
Tank Capacity: 7000 Gals
Date Installed: 2002-07-01 00:00:00

10
SSE
1/2-1
4457 ft.

NATIONAL GRID - HOPE ST MGP **SHWS** **S104180136**
HOPE / WASHINGTON STREET **N/A**
BRISTOL, RI

Relative:
Lower

Actual:
2 ft.

HWS:
Facility Status: Active
Project Code: NECB-HWM
Project Code Desc: State
Project Date: 1/27/1994

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BRISTOL	S106953660	BRISTOL NIKE CONTROL (PR-38C) NO FILE	ROUTE 136, METACOM AVE	02809	SHWS
BRISTOL	S106953661	BRISTOL NIKE LAUNCH (PR-38L)	ROUTE 136, METACOM AVE	02809	SHWS
BRISTOL	S106953662	BRISTOL NIKE LAUNCHER AREA	ROUTE 136, METACOM AVE	02809	SHWS
BRISTOL	S106953663	GOETZ SAILBOATS	BALLOU BLVD.-VACANT LOT W/O #)	02809	SHWS, AUL
BRISTOL	1001230439	BRISTOL HARBOR (C80123)	BRISTOL HARBOR	02809	CERCLIS, FINDS
BRISTOL	S104410700	GEORGE PATTON ASSOCIATES	BROAD COMMON ROAD	02809	SHWS, AUL
BRISTOL	S106113891	BUTTONWOOD INDUSTRIAL - MINER	40-45 BUTTONWOOD / FRANKLIN	02809	SHWS
BRISTOL	S107673486	JACK'S SALVAGE & AUTO PARTS	625 HETACON AVENUE	02809	SHWS
BRISTOL	S100037773	TOWN OF BRISTOL SANITARY	MINTURN ROAD	02809	SWF/LF
BRISTOL	S103246863	PERRY-WOOD STREET DUMP	PERRY-WOOD STREET	02809	SHWS
BRISTOL	U001213581	WATKINSON AUTOMOTIVE	STATE ST	02809	UST
BRISTOL	S104308174		THAMES STREET	02809	SHWS, SPILLS, AUL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 05/05/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL RECOVERY: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 05/23/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/23/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/21/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 01/12/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 40

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 07/25/2006
Next Scheduled EDR Contact: 10/23/2006
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/19/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 01/19/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 33

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/26/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 04/25/2005
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/24/2006
Next Scheduled EDR Contact: 10/23/2006
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/28/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 32

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/06/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005
Date Data Arrived at EDR: 11/28/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 63

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 06/21/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/13/2006
Date Made Active in Reports: 05/19/2006
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6064
Last EDR Contact: 07/06/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Quarterly

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 07/13/2005
Date Made Active in Reports: 08/17/2005
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/29/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 03/31/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 05/11/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 11

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/13/2006
Date Data Arrived at EDR: 04/21/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005
Date Data Arrived at EDR: 02/08/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 19

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2006
Date Data Arrived at EDR: 03/29/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/27/2006
Date Data Arrived at EDR: 05/02/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 28

Source: EPA
Telephone: N/A
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 07/21/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: State Hazardous Waste Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 04/05/2006
Date Data Arrived at EDR: 04/25/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-3872
Last EDR Contact: 06/26/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Quarterly

SWF/LF: Solid Waste Management Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/05/2006
Date Data Arrived at EDR: 04/25/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/26/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Leaking Underground Storage Tank Facilities

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/05/2006
Date Data Arrived at EDR: 04/25/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-3872
Last EDR Contact: 06/26/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Quarterly

UST: Underground Storage Tank Facility Master List

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/16/2006
Date Made Active in Reports: 04/03/2006
Number of Days to Update: 18

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/15/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Quarterly

AST: Aboveground Storage Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 04/03/2006
Date Data Arrived at EDR: 04/03/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 38

Source: Department of Environmental Management
Telephone: 401-222-3872
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Semi-Annually

MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 09/30/2005
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

SPILLS: Oil & Hazardous Material Response Log/Spill Report

Date of Government Version: 11/15/2004
Date Data Arrived at EDR: 02/04/2005
Date Made Active in Reports: 03/24/2005
Number of Days to Update: 48

Source: Dept. of Environmental Management
Telephone: 401-222-3872
Last EDR Contact: 07/14/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Varies

AUL: ELUR Listing

Environmental Land Use Restriction is the legal document placed in land evidence records that restricts a property to certain uses that are consistent with the approved Remediation Action Work Plan.

Date of Government Version: 06/05/2006
Date Data Arrived at EDR: 06/06/2006
Date Made Active in Reports: 07/10/2006
Number of Days to Update: 34

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Site List

Brownfields are real properties where the expansion, redevelopment or reuse may be complicated by the actual or potential presence of a hazardous substance, pollutant, or contaminat.

Date of Government Version: 10/02/2003
Date Data Arrived at EDR: 10/07/2003
Date Made Active in Reports: 10/21/2003
Number of Days to Update: 14

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Semi-Annually

NPDES: Permit and Facility Data
A listing of permitted wastewater facilities

Date of Government Version: 05/23/2006
Date Data Arrived at EDR: 06/08/2006
Date Made Active in Reports: 07/10/2006
Number of Days to Update: 32

Source: Department of Environmental Management
Telephone: 401-222-4700
Last EDR Contact: 05/18/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Varies

AIRS: Air Emissions Listing
A listing of facilities with air emissions.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 05/04/2006
Date Made Active in Reports: 06/12/2006
Number of Days to Update: 39

Source: Department of Environmental Management
Telephone: 401-222-2808
Last EDR Contact: 07/24/2006
Next Scheduled EDR Contact: 10/23/2006
Data Release Frequency: Varies

LEAD: Lead Inspections Database
The listing includes Highest Risk Premises which are properties declared unsafe for habitation by children under age six (6), and Properties with Multiple Poisonings, which are properties that have been the source of multiple lead poisonings and are not currently lead safe.

Date of Government Version: 04/04/2006
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 40

Source: Department of Health, Environmental Lead Program
Telephone: 401-222-1417
Last EDR Contact: 07/19/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 06/14/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 04/24/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 8

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/05/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/02/2006
Date Data Arrived at EDR: 05/31/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/31/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 05/04/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/17/2006
Number of Days to Update: 61

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 05/15/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/25/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Provider Listing
Source: Department of Children, Youth & Families
Telephone: 401-528-3624

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Classification Data
Source: Dept. of Administration/Statewide Planning
Telephone: 401-222-6483

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

QUINTA-GAMELIN USARC
ASYLUM ROAD
BRISTOL, RI 02809

TARGET PROPERTY COORDINATES

Latitude (North):	41.687525 - 41° 41' 15.1''
Longitude (West):	71.285949 - 71° 17' 9.4''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	309748.7
UTM Y (Meters):	4617395.0
Elevation:	47 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	41071-F3 BRISTOL, RI
Most Recent Revision:	1975

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

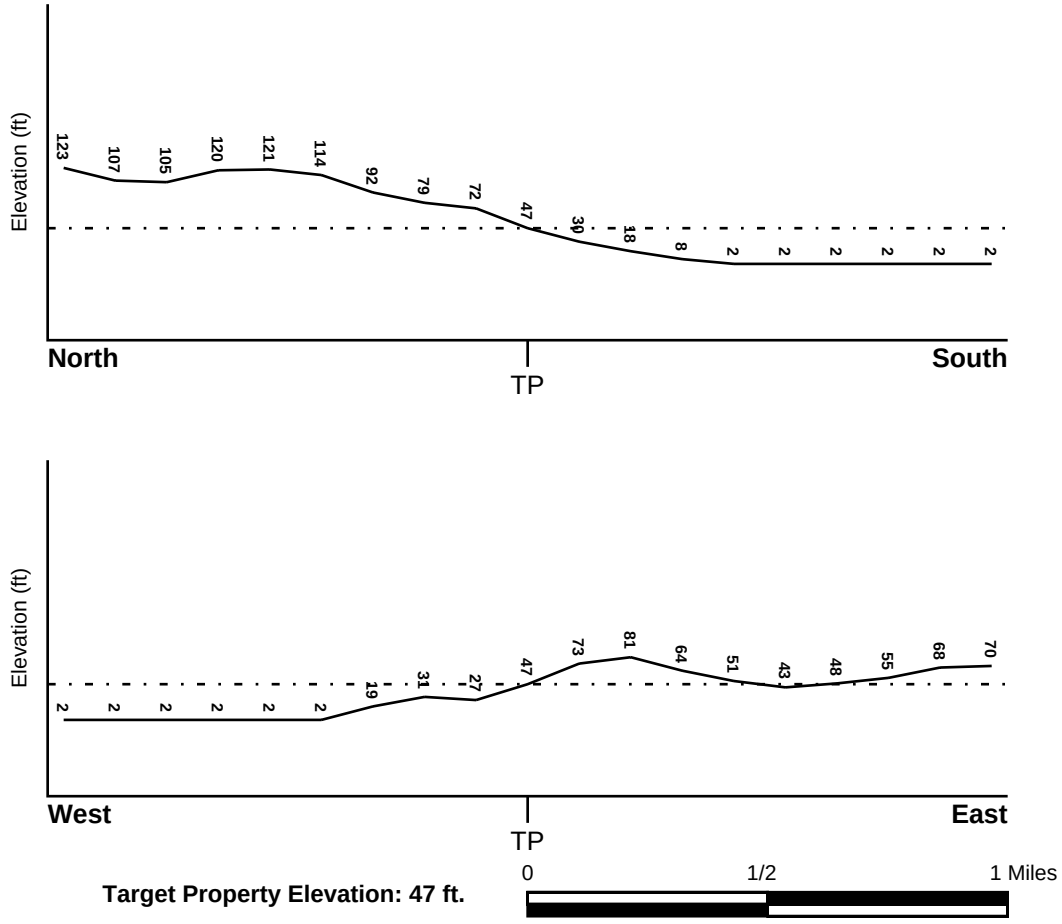
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 47 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
BRISTOL, RI	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	44001C0013F
Additional Panels in search area:	44001C0011F 44001C0010F 44001C0014F

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BRISTOL	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

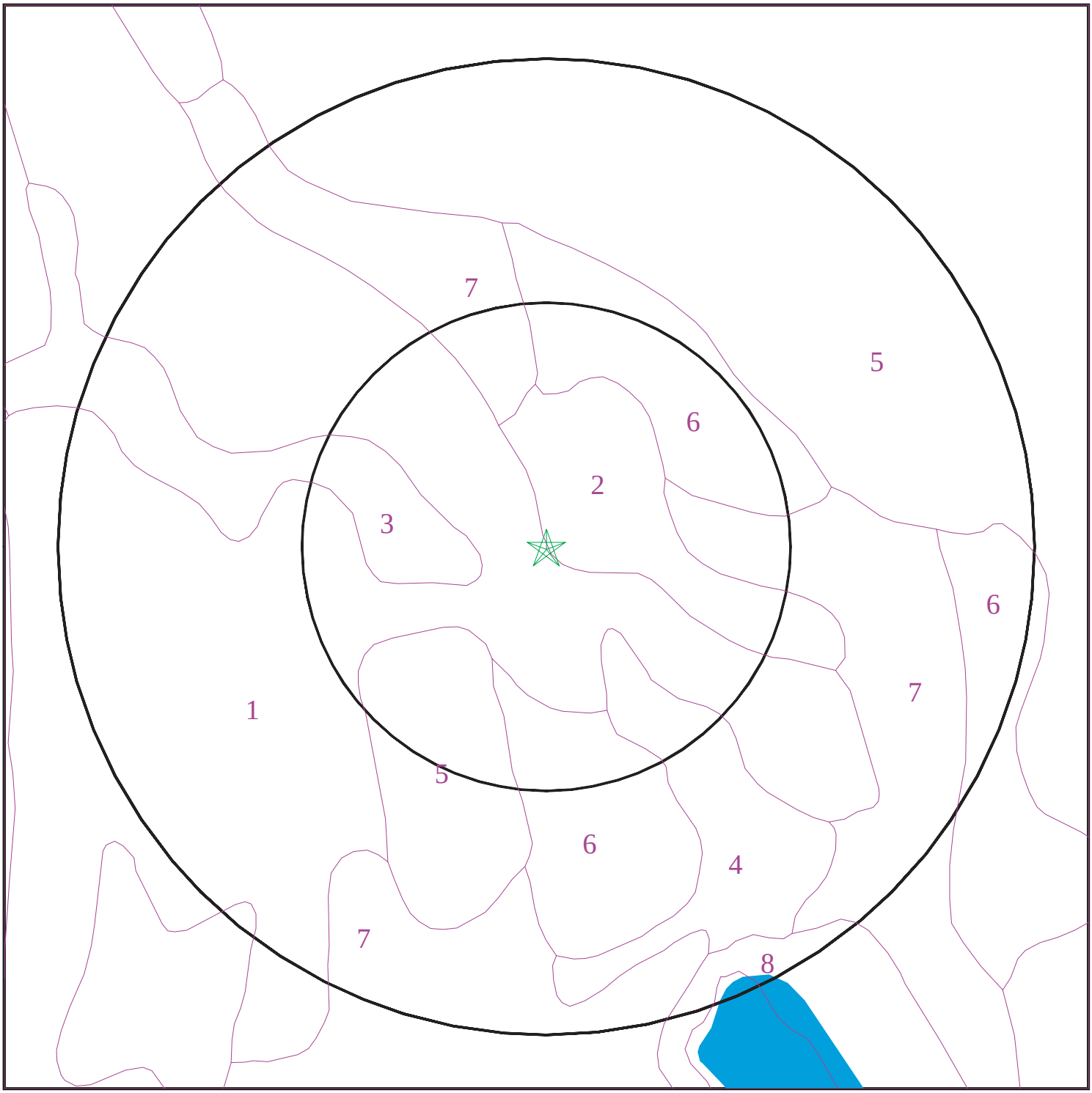
Era:	Paleozoic
System:	Pennsylvanian
Series:	Pennsylvanian
Code:	PP *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 01714247.206r



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Quinta-Gamelin USARC	CLIENT:	CH2M Hill
ADDRESS:	ASYLUM ROAD BRISTOL RI 02809	CONTACT:	Mary Beth Jacques
LAT/LONG:	41.6875 / 71.2859	INQUIRY #:	01714247.206r
		DATE:	July 28, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: PITTSTOWN

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	28 inches	silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	28 inches	60 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 0.60 Min: 0.06	Max: 6.00 Min: 4.50

Soil Map ID: 2

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil has not been ranked with a hydric criteria.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

Soil Map ID: 3

Soil Component Name: STISSING

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 3.60
2	8 inches	15 inches	channery - silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 3.60
3	15 inches	60 inches	channery - silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel. COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel.	Max: 0.20 Min: 0.06	Max: 6.00 Min: 3.60

Soil Map ID: 4

Soil Component Name: MANSFIELD

Soil Surface Texture: mucky - silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly. Soils are wet to the surface most of the time. Depth to water table is less than 1 foot, or is ponded.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	mucky - silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Organic Clay or Organic Silt.	Max: 2.00 Min: 0.60	Max: 6.50 Min: 4.50
2	8 inches	15 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 5.10
3	15 inches	60 inches	gravelly - fine sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.20 Min: 0.00	Max: 7.30 Min: 5.10

Soil Map ID: 5

Soil Component Name: NEWPORT

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	24 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
3	24 inches	65 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.20 Min: 0.00	Max: 6.00 Min: 4.50

Soil Map ID: 6

Soil Component Name: NEWPORT

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	24 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
3	24 inches	65 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.20 Min: 0.00	Max: 6.00 Min: 4.50

Soil Map ID: 7

Soil Component Name: PITTSTOWN

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained. Soils have a layer of low hydraulic conductivity, wet state high in the profile. Depth to water table is 3 to 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	28 inches	silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	28 inches	60 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 0.60 Min: 0.06	Max: 6.00 Min: 4.50

Soil Map ID: 8

Soil Component Name: MATUNUCK

Soil Surface Texture: hemic material

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly. Soils are wet to the surface most of the time. Depth to water table is less than 1 foot, or is ponded.

Hydric Status: Soil meets the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	12 inches	hemic material	A-8	Highly organic soils, Peat.	Max: 20.00 Min: 6.00	Max: 7.80 Min: 5.10
2	12 inches	18 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 7.80 Min: 5.10
3	18 inches	72 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 20.00	Max: 7.80 Min: 5.10

Soil Map ID: 9

Soil Component Name: NEWPORT

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	24 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60	Max: 6.00 Min: 4.50
3	24 inches	65 inches	channery - silt loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.20 Min: 0.00	Max: 6.00 Min: 4.50

Soil Map ID: 10

Soil Component Name: WATER

Soil Surface Texture: Not reported

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil has not been ranked with a hydric criteria.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

No Layer Information available.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 01714247.206r

County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location

EPA Designated Sole Src. Aq.

N

SITE NAME:	Quinta-Gamelin USARC	CLIENT:	CH2M Hill
ADDRESS:	ASYLUM ROAD BRISTOL RI 02809	CONTACT:	Mary Beth Jacques
LAT/LONG:	41.6875 / 71.2859	INQUIRY #:	01714247.206r
		DATE:	July 28, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: RI Radon

Radon Test Results

County	Total Sites	Avg	Std Dev	# Sites<4 pCi/L	# Sites>=4&<20 pCi/L	# Sites>20 pCi/L	Max
BRISTOL	455	2.11	2.15601	395	60	0	15.5

Federal EPA Radon Zone for BRISTOL County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 02809

Number of sites tested: 5

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.600 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	2.760 pCi/L	80%	20%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Classification Data
Source: Dept. of Administration/Statewide Planning
Telephone: 401-222-6483

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Community and Non-Community Wells
Source: Department of Environmental Management
Telephone: 401-277-2234
Public wells serving at least 25 residents or 15 service connections year round. Public wells serving at least 25 persons at least 60 days of the year.

EPA-Approved Sole Source Aquifers in Rhode Island
Source: EPA
Sole source aquifers are defined as an aquifer designated as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for the area and for which there are no reasonable alternative sources should the aquifer become contaminated.

OTHER STATE DATABASE INFORMATION

RADON

State Database: RI Radon
Source: Department of Health
Telephone: 401-222-2438
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

Fax To: CH2M Hill
Contact: Mary Beth Jacques
Fax : 404-229-9152
Date: 07/28/2006

Fax From: Bart Sobieralski
EDR
Phone: 1-800-352-0050

EDR PUR-IQ® Report

"the intelligent way to conduct historical research"

for
Quinta-Gamelin USARC
ASYLUM ROAD
BRISTOL, RI 02809
Lat./Long. 41.687525 / 71.285949
EDR Inquiry # 01714247.206r

The EDR PUR-IQ report facilitates historical research planning required to complete the Phase I ESA process. The report identifies the *likelihood* of prior use coverage by searching proprietary EDR-Prior Use Reports® comprising nationwide information on: city directories, fire insurance maps, aerial photographs, historical topographic maps, flood maps and National Wetland Inventory maps.

Potential for EDR Historical (Prior Use) Coverage - Coverage in the following historical information sources may be used as a guide to develop your historical research strategy:

1. City Directory: Coverage may exist for portions of Bristol County, RI.

2. Fire Insurance Map: When you order online any EDR Package or the EDR Radius Map with EDR Sanborn Map Search/Print, you receive site specific Sanborn Map coverage information at no charge.

3. Aerial Photograph: Aerial photography coverage may exist for portions of Bristol County. Please contact your EDR Account Executive for information about USGS photos available through EDR.

4. Topographic Map: The USGS 7.5 min. quad topo sheet(s) associated with this site:

Historical: Coverage exists for Bristol County

Current: Target Property: TP | 1975 | 41071-F3 Bristol, RI

EDR's network of professional researchers, located throughout the United States, accesses the most extensive national collections of city directory, fire insurance maps, aerial photographs and historical topographic map resources available for BRISTOL, RI. These collections may be located in multiple libraries throughout the country. To ensure maximum coverage, EDR will often assign researchers at these multiple locations on your behalf. Please call or fax your EDR representative to authorize a search.

EDR - HISTORICAL SOURCE(S) ORDER FORM

CH2M Hill
Mary Beth Jacques
Account # 1592163

Quinta-Gamelin USARC
ASYLUM ROAD
BRISTOL, RI 02809
Bristol County
Lat./Long. 41.687525 / 71.285949
EDR Inquiry # 01714247.206r

Should you wish to change or add to your order, fax this form to your EDR account executive:

Bart Sobieralski
Ph: 1-800-352-0050 Fax: 1-800-231-6802

Reports

___ EDR Sanborn Map® Search/Print

___ EDR Fire Insurance Map Abstract

___ EDR Multi-Tenant Retail Facility® Report

___ EDR City Directory Abstract

___ EDR Aerial Photo Decade Package

___ USGS Aerial 5 Package

___ USGS Aerial 3 Package

___ EDR Historical Topographic Maps

___ Paper Current USGS Topo (7.5 min.)

___ Environmental Lien Search

___ Chain of Title Search

___ NJ MacRaes Industrial Directory Report

___ EDR Telephone Interview

Shipping:

___ Email
___ Express, Next Day Delivery — RUSH SERVICE IS AVAILABLE
___ Express, Second Day Delivery
___ Express, Next day Delivery — Customer Account — Acct # _____
___ Express, Second Day Delivery — Customer Account — Acct # _____
___ U.S. Mail

Thank you

The EDR-City Directory
Abstract

Quinta-Gamelin
Asylum Road
Bristol, RI 02809

Inquiry Number: 1728001.1

Friday, August 04, 2006

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1984 through 2005. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: August 4, 2006

Target Property:
Asylum Road
Bristol, RI 02809

Year	Uses	Source
1984	Address Not Listed in Research Source	Cole Criss-Cross Directory
1991	Address Not Listed in Research Source	Cole Criss-Cross Directory
1998	Address Not Listed in Research Source	Cole Criss-Cross Directory
2005	Street Not Listed in Research Source	Cole Criss-Cross Directory

Adjoining Properties

SURROUNDING

Multiple Addresses
Bristol, RI 02809

Year	Uses	Source
1984	Address Not Listed in Research Source	Cole Criss-Cross Directory
1991	Address Not Listed in Research Source	Cole Criss-Cross Directory
1998	*Asylum Road*	Cole Criss-Cross Directory
	Address not listed in research source (1)	Cole Criss-Cross Directory
	Address not listed in research source (10)	Cole Criss-Cross Directory
	Bristol Sports (48)	Cole Criss-Cross Directory
	Address not listed in research source (100)	Cole Criss-Cross Directory
	No other listings on Asylum Road	Cole Criss-Cross Directory
2005	Street Not Listed in Research Source	Cole Criss-Cross Directory