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March 27, 2013

Mr. John Nohrstedt U.S. Army Corps of Engineers Engineering and Support Center, Huntsville Attn: CEHNC-FS-IS 4820 University Square Huntsville, Alabama 35816-1822

**SUBJECT:** 

Final Well Decommissioning Report, Seneca Army Depot Activity, Romulus, New York; USACE Contract W912DY-08-D-0003, Delivery Orders 0002 and 0008; and

AFCEE Contract FA8903-04-D-8675, Task Order 31, CRDL-001C

Dear Mr. Nohrstedt:

Parsons Government Services Inc. (Parsons) is pleased to submit the Final Well Decommissioning Report for the Seneca Army Depot Activity in Romulus, Seneca County, New York. This work included the decommissioning of wells at 19 sites at the Depot. This work was performed in accordance with the Scope of Work for Task Orders 0002 and 0008 under Contract W912DY-08-D-0003.

Parsons appreciates the opportunity to provide you with the Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E., Vice President

Program Manager

Enclosures

S. Absolom, SEDA cc:

K. Hoddinott, USACHPPM

R. Battaglia, USACE, NY

T. Battaglia, USACE, NY



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March 27, 2013

Mr. John Hill
U. S. Air Force Center for Engineering and the Environment
3515 S General McMullen, Bldg 171
San Antonio, TX 78226-2018

SUBJECT: Final Well Decommissioning Report, Seneca Army Depot Activity, Romulus, New

York; AFCEE Contract FA8903-04-D-8675, Task Order 31, CRDL-A001C

Dear Mr. Hill:

Parsons Government Services Inc. (Parsons) is pleased to submit the Final Well Decommissioning Report for the Seneca Army Depot Activity in Romulus, Seneca County, New York. This work included the decommissioning of wells at SEAD-4 (the Munitions Washout Facility) and SEAD-11 (the Old Construction Debris Landfill). This work was performed in accordance with the Scope of Work under Contract FA8903-04-D-8675, Task Order 0031.

Parsons appreciates the opportunity to provide you with the Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E., Vice President

Program Manager

Enclosures

cc: J. Chavez, AFCEE/EXA

S. Absolom, SEDA

K. Hoddinott, USACHPPM

R. Battaglia, USACE, NY

T. Battaglia, USACE, NY

## **PARSONS**

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March 27, 2013

Mr. Julio Vazquez U.S. Environmental Protection Agency, Region II Superfund Federal Facilities Section 290 Broadway, 18<sup>th</sup> Floor New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E. New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Remedial Bureau A, Section C 625 Broadway Albany, NY 12233-7015

Mr. Mark Sergott Bureau of Environmental Exposure Investigation, Room 300 New York State Department of Health 547 River Street, Flanigan Square Troy, NY 12180

SUBJECT: Final Well Decommissioning Report, Seneca Army Depot Activity, Romulus, Seneca County, New York; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Government Services Inc. (Parsons) is pleased to submit the Final Well Decommissioning Report for the Seneca Army Depot Activity in Romulus, Seneca County, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006).

Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E., Vice President

Program Manager

Enclosures

cc: M. Powers, TechLaw

S. Absolom, SEDA

R. Battaglia, USACE, NY

J. Nohrstedt, USACE, Huntsville

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T. Battaglia, USACE, NY



US Army, Engineering & Support Center Huntsville, AL

01282



Seneca Army Depot Activity Romulus, NY



## **WELL DECOMMISSIONING REPORT**

ASH LANDFILL OPERABLE UNIT, SEAD-4, SEAD-5, SEAD-11, SEAD-12, SEAD-13, SEAD-24, SEAD-25, SEAD-26, SEAD-27, SEAD-48, SEAD-59, SEAD-63, SEAD-67, SEAD-70, SEAD-71, SEAD-119B, SEAD-121C, & SEAD-122B SENECA ARMY DEPOT ACTIVITY

Contract No. W912DY-08-D-0003 Task Order No. 0008 EPA Site ID# NY0213820830 NY Site ID# 8-50-006

**PARSONS** 

**MARCH 2013** 

#### **FINAL**

## WELL DECOMMISSIONING REPORT

# SENECA ARMY DEPOT ACTIVITY ROMULUS, SENECA COUNTY, NEW YORK

## Prepared for:

# U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER HUNTSVILLE, ALABAMA

## U.S. AIR FORCE CENTER FOR ENGINEERING AND THE ENVIRONMENT BROOKS CITY BASE, TEXAS

and

SENECA ARMY DEPOT ACTIVITY ROMULUS, NEW YORK

Prepared by:

#### **PARSONS**

100 High Street Boston, MA 02110

USAESCH Contract Number W912DY-08-D-0003 Task Order No. 0003 & 0008 AFCEE Contract Number FA8903-04-D-8675 Task Order No. 31 CDRL A001D EPA Site ID# NY0213820830 NY Site ID# 8-50-006

March 2013

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#### 1.0 INTRODUCTION

This report documents the decommissioning of 146 groundwater monitoring wells located at the former Seneca Army Depot Activity (SEDA or the Depot) in Seneca County, New York (EPA CERCLIS Site ID: NY0213820830; NYS Inactive Waste Site ID: 8-50-006). The monitoring wells were decommissioned because they are no longer needed for long-term monitoring or continuing environmental sampling and analysis purposes associated with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or State of New York Inactive Hazardous Waste Site investigations and studies that continue at the former Depot as the Army fulfills its federal and state environmental assessment, remediation, and long-term monitoring obligations. SEDA was listed as a Federal Facility on the National Priorities List (NPL) in August of 1990, and since its listing, the Army has worked to identify and quantify the levels of environmental contamination that are present, and when determined to be necessary, remediate identified contamination to mitigate or eliminate potential risks and hazards to the public and environment that may be associated with its presence in the media at, and in the vicinity, of the Depot. Under this work, the Army has conducted environmental assessments and evaluations at 112 known or suspected areas of concern (AOCs) located within the bounds of the Depot. As a result of these assessments and evaluations, 27 suspected AOCs were eliminated from further study and analysis, with oversight agency concurrence and approval, after initial assessments and evaluations indicated that suspected contaminants were not present at levels that posed unacceptable levels of threats or risk. The remaining 76 AOCs were assessed under the CERCLA and other aligned regulatory programs, and findings and conclusions of these assessments have led to remedial action decisions that have been documented in Records of Decision (RODs) that have been approved by, or gained concurrence of, oversight regulatory agencies. Of the AOCs processed to RODs, 30 required no action (NA), 17 required no further action (NFA) once interim actions were completed, and the remaining 29 AOCs are subject to land use controls (LUCs) or other continuing regulatory requirements. Long-term groundwater monitoring required under approved RODs is continuing at four AOCs (SEAD-16, former Abandoned Deactivation Furnace Site; SEAD-17, former Existing Deactivation Furnace Site; SEAD-23, former Open Burning [OB] Grounds; and, SEAD-25, former Fire Training and Demonstration Pad) and one operable unit (the Ash Landfill Operable Unit, SEADs 3, 6, 8, 14 and 15). Environmental assessments and final regulatory action and approval are still pending at the remaining nine AOCs.

The decommissioning of the monitoring wells was performed in accordance with the U.S. Army's (Army's) August 2010 Work Plan titled *Well Decommissioning Plan for SEAD-4*, *SEAD-5*, *Ash Landfill Operable Unit*, *SEAD-11*, *SEAD-12*, *SEAD-13*, *SEAD-24*, *SEAD-25*, *SEAD-26*, *SEAD-27*, *SEAD-48*, *SEAD-59*, *SEAD-63*, *SEAD-67*, *SEAD-70*, *SEAD-71*, *SEAD-119B*, *SEAD-121C*, *and SEAD-122B*, *Seneca Army Depot Activity* (Parsons, 2010). The Work Plan was prepared based on the procedures and recommendations provided in New York State Department of Environmental Conservation's (NYSDEC's) Draft guidance titled *Groundwater Monitoring Well Decommissioning* issued January 8, 2009. The well decommissioning was performed on behalf of the U.S. Army, Seneca Army Depot Activity under Contracts issued by U.S. Army, Engineering and Support Center, Huntsville (USAESCH – W912DY-08-D-0003, Task Orders 2, and 8) and the U.S. Air Force Center

for Engineering and the Environment (AFCEE – FA8903-04-D-8675, Task Order 31) by Parsons Infrastructure & Technology Group Inc. (Parsons) and GeoLogic NY, Inc. Well decommissioning completed at SEAD-4 and SEAD-11 was conducted under work authorized under AFCEE's Contract FA8903-04-D-8675, Task Order 31, while the decommissioning activities completed at SEAD-13 were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 2. Well decommissioning activities completed at all of the other sites were performed under work authorized under USAESCH's Contract W912DY-08-D-0003, Task Order 8.

Wells decommissioned under this work were located at 24 former solid waste management units (SWMU) or AOCs within the Depot. SWMU/AOC descriptions corresponding to the SEAD designations are identified below, along with a brief description of the site's current regulatory status:

- SEAD-3, 6, 8, 14 and 15: The Ash Landfill Operable Unit approved ROD; LUCs and long-term monitoring groundwater monitoring required at designated wells.
- SEAD-4/38: The Munitions Washout Facility/ Building 2079 Boiler Blow Down Pit approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-5: Former Sludge Waste Piles approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-11: Old Construction Debris Landfill approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring.
- SEAD-12: Radioactive Waste Burial Sites regulatory status pending, but no long-term groundwater monitoring anticipated necessary.
- SEAD-13: Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-24: Abandoned Powder Burning Pit approved ROD; NFA with release of land for unrestricted use and unlimited exposures, no required groundwater monitoring required.
- SEAD-25: The Fire Training and Demonstration Pad approved ROD; LUCs and long-term groundwater monitoring required at designated wells.
- SEAD-26: The Fire Training Pit and Area approved ROD; LUCs required, no required continuing long-term groundwater monitoring.
- SEAD-27: Steam Cleaning Waste Tank in Building 360 approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-48: Row E0800 Pitchblende Ore Storage Igloos approved ROD; NFA with land released for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-59: Fill Area West of Building 135 approved ROD; LUCs required no required groundwater monitoring.

- SEAD-63: Miscellaneous Components Burial Site approved ROD; NFA with release for land for unrestricted use and unlimited exposures, no groundwater monitoring required.
- SEAD-67: Dump Site east of Sewage Treatment Plant No. 4 approved ROD; LUCs required no required groundwater monitoring.
- SEAD-70: Fill Area Adjacent to Building T-2110 regulatory status pending, but no long-term groundwater monitoring anticipated.
- SEAD-71: Alleged Paint Disposal Area approved ROD; LUCs required no required groundwater monitoring.
- SEAD-119B: Former Small Arms Range at the Lake Housing Area NA, not a site of interest, no required groundwater monitoring.
- SEAD-121C: Defense Reutilization and Marketing Office (DRMO) Yard approved ROD; LUCs required, no required groundwater monitoring.
- SEAD-122B: Small Arms Range at the Airfield Parcel approved ROD; LUCs required, no required groundwater monitoring.

The locations of the affected SEADs are shown on **Figure 1.** Wells decommissioned under this work were either not needed, or designated by the Army as being unlikely to be needed, for continuing monitoring of groundwater quality or conditions at sites where they were installed. Wells designated for decommissioning at SEAD-25 and the Ash Landfill Operable Unit (SEADs 3, 6, 8, 14, & 15) are not included amongst the wells that have been included in the continuing long-term monitoring programs implemented and continuing at these sites. The Army does not anticipate that long-term groundwater monitoring will be required at SEAD-12 or SEAD-70, as past investigations and studies have not suggested that groundwater quality is of concern at either of these sites; however, if future monitoring of groundwater is required at one or both of these sites, once proposed plans or RODs are negotiated and finalized, then new wells will be installed as needed to satisfy the requirements of the defined groundwater monitoring program.

A complete list of the groundwater wells decommissioned at each SWMU/AOC and data documenting their former location is provided in **Table 1-1**. Additional information pertinent to the decommissioning method is also summarized in the table.

#### 2.0 AREA OF CONCERN DESCRIPTION AND STATUS

Specific information pertinent to the environmental conditions at the former SWMU/AOCs where groundwater monitoring wells were decommissioned are presented below, along with summaries of any submitted reports and the proposed or approved plans for each.

## SEADs 3, 6, 8, 14 and 15: The Ash Landfill Operable Unit

The Ash Landfill Operable Unit is located in the west-central portion of the Depot and encompasses an area of approximately 46.7 acres. From 1941 to 1974, uncontaminated trash was burned in a series of burn pits near the former incinerator building (Building 2207). Building 2207 was demolished in 2007. According to a U.S. Army Environmental Hygiene Agency (USAEHA) Interim Final Report, Groundwater Contamination Survey No. 38-26-0868-88 (USAEHA, 1987), the ash from the refuse burning pits was buried in the Ash Landfill (SEAD-6) from 1941 until the late 1950s or early 1960s. According to an undated aerial photograph of the incinerator during operation, the active area of the Ash Landfill extended at least 500 feet north of the incinerator building, near a bend in a dirt road. A fire destroyed the incinerator on May 8, 1979, and the landfill was subsequently closed. Post-closure, the landfill was apparently covered with native soil of various thicknesses, but was not closed with an engineered cover or cap. Other areas at the site were used as a grease pit and for burning debris, and for the burial of non-combustible materials at a site on the south and west sides of the intersection of Smith Farm and North South Base Line roads.

Site investigations of the Ash Landfill identified a groundwater plume comprised primarily of chlorinated VOCs including trichloroethene and its daughter degradation products (dichloroethenes and vinyl chloride) in the shallow aquifer beneath the site and indicated that it was migrating towards the boundary of the Depot. The Army conducted an interim remedial measure in 1998 in which a 650-foot long permeable reactive wall containing zero-valence reactive iron granules was installed near the Depot's fence line to intercept the identified plume. The wall was installed as a demonstration program to show that the reactive wall could be effective in reducing concentrations of chlorinated ethenes through reactive dechlorination.

As such, the ROD for the Ash Landfill (Parsons, 2005a) required the installation of three in-situ permeable reactive barrier walls, and maintenance of the proposed walls and the existing wall for migration control of the groundwater plume. Further within the final *Remedial Design Report for the Ash Landfill Operable Unit* (Parsons, 2006a) the Army indicated that groundwater monitoring, including plume monitoring and biowall performance monitoring, would be performed as part of the Ash Landfill OU post-closure operations. Performance monitoring was required to measure groundwater contaminant concentrations and the effectiveness of the reactive barrier walls remedy for the Ash landfill OU. Monitoring wells currently being sampled as part of the continuing long-term monitoring (LTM) program at the Ash Landfill OU include MW-56, MWT-22, MWT-23, MWT-24, MWT-25, MWT-26, MWT-27, MWT-28, MWT-29, MWT-7, PT-17, PT-18A, PT-22, and PT-24. Four additional wells (i.e., MW-48, MW-60 PT-16, and PT-20) were retained for groundwater elevation contour map purposes, while MW-58D was retained as it has USGS monitoring equipment

currently installed within it. Other wells at the site are no longer needed and were scheduled for decommissioning.

The locations of monitoring wells decommissioned at the Ash Landfill are shown on Figure 2.

## SEAD-4/38: The Munitions Washout Facility/Building 2079 Boiler Blow Down Pit

The SEAD-4 site consists of two parcels of land that encompass approximately 47.5 acres that sit on opposite sides of Seneca Road in the southwestern portion of the former Depot. The portion of SEAD-4 located to the north and east of Seneca Road sits atop and on the southwestern face of a downwardly sloping hill that flattens out near Seneca Road. This portion of SEAD-4 previously contained numerous paved and dirt access roads, several buildings, assorted out structures, and manmade drainage ditches once associated with the former Munitions Washout operations, many of which have now been demolished and removed. One of the buildings previously located within the northern portion of SEAD-4 was Building 2079, which was a boiler house that was used to produce steam in support of SEAD-4's munitions washout operations. Building 2079 was demolished by the Army in 2007. Prior to 1980, boiler blow down liquids were discharged into an earthen pit outside of Building 2079, where they were allowed to infiltrate into the ground or flow over the surface until they were captured in SEAD-4's drainage ditches. The location where the boiler blow down liquid was discharged outside of Building 2079, which is fully surrounded by the greater area of SEAD-4, was designated by the Army as SEAD-38.

The southwestern portion of SEAD-4 is and has predominantly been undeveloped over time. Unoccupied closed buildings and building remnants are located adjacent to the southwestern edge of Seneca Road, but these give way to unoccupied and undeveloped areas as one crosses this portion of the site from Seneca Road to the railroad line that bounds the site to the west. Numerous earthen drainage ditches lead to the south and west towards the location of a former lagoon that once was located in this portion of the site, but which was drained and removed during the soil excavation and disposal remedial action conducted at this AOC.

The approved ROD for SEAD-4/38 (Parsons, 2008b) required the excavation and off-site disposal of soil, ditch soil, and lagoon soil that were contaminated with concentrations of select metals (e.g., chromium, lead, vanadium) that posed potential risk to certain ecological receptors. As part of the remedial action, the former on-site lagoon was dewatered to facilitate the excavation of the contaminated lagoon soil, and once the contaminated lagoon soil was removed, the location of the lagoon was regraded to promote positive flow away from its former location. Other excavation areas that could not be graded to promote positive drainage or that were more than 4 feet in depth near the

<sup>&</sup>lt;sup>1</sup> Boiler blow down is a maintenance operation used to reduce scale buildup resulting from mineral deposits within boiler pipes where water is converted to steam. Minerals contained within the boiler feed water do not vaporize along with the water and deposit in the boiler tube, producing scale that reduces the efficiency of the boiler operation and which can cause corrosion or clogging of the pipes. Blowdown liquids are used to lift the scale deposits and flush them out of the system.

road or site buildings were backfilled with clean fill. Backfill used was chemically characterized and the analytical results were compared to the NYSDEC Unrestricted Use soil cleanup objectives (SCOs) for volatile and semivolatile organic compounds, to approved soil cleanup objective levels for lead and chromium, and to approved residual metal concentrations found at the site for other metals. The ROD (Parsons, 2008b) also documented that other site conditions previously identified as a concern (i.e., prior presence of contaminated debris in Buildings 2073, 2076, 2078, 2084, and 2085 and the demolition and removal of Building 2079) had been removed and had achieved desired goals specified in the ROD.

The ROD further noted that several VOCs and metals had been identified at concentrations exceeding EPA or/and NYSDEC standards in the groundwater at SEAD-4/38; however, the noted elevated concentrations were observed only in a single round of sampling (i.e., not confirmed by during follow-up sampling rounds at the same location). The ROD concluded that the referenced VOCs and metals did not pose significant risks to potential receptors at SEAD-4/38 based on the baseline risk assessment and therefore, the approved remedy for the site did not require groundwater treatment or monitoring.

Section 3.1.9 of the *Final Remedial Design Work Plan and Design Report for SEAD-4* (Parsons, 2008c) indicated that long-term monitoring of the groundwater was not an element of the proposed remedial action at the site, and as such, the 13 groundwater monitoring wells located at site were designated for decommissioning in accordance with NYSDEC's guidance.

The locations of monitoring wells that were decommissioned at SEAD-4/38 are shown on Figure 3.

#### SEAD-5: Former Sewage Sludge Waste Piles

SEAD-5 is a rectangular parcel of land encompassing approximately 3.1 acres in the east-central portion of the Depot. SEAD-5 is located approximately 600 feet west of Building 135 and approximately 3,000 feet west-southwest of the Depot's main entrance on State Route 96. During the 1980s, sewage sludge from the Depot wastewater treatment plants (WWTPs) located in Buildings 4 and 715 was stockpiled at SEAD-5; sludge generated from the WWTPs was removed from drying beds near the buildings and transported to SEAD-5 bi-monthly where it was staged until its disposal. Portions of SEAD-5 were also used as part of the Depot's former Public Works storage and staging area for heavy equipment, materials, and supplies. At present some of the land within and surrounding SEAD-5 continues to be used by the Seneca County Highway Department as a staging and storage area for its equipment and supplies.

During 2009, a soil cover, required per terms of an approved ROD (Parsons, 2009b) for the site, was constructed over a portion of SEAD-5 where soils were determined to contain levels of carcinogenic polyaromatic hydrocarbons (cPAHs) at levels that posed potential risk or health hazards to future commercial and industrial users of the property. The soil cover was constructed of reclaimed soil originating from non-time critical removal actions conducted at other sites within the Depot, a demarcation barrier (i.e., colored "snow fence"), and 1-foot of borrow material (i.e., bank run sand, gravel, and crushed concrete) derived from on- and off-site sources. All soil and borrow material was

tested and compared to NYSDEC Restricted Commercial Use SCOs prior to its use. The soil cover overlies an area encompassing approximately 1.6 acres of land within SEAD-5 that is located adjacent to, and extends south of, the unnamed dirt road that runs along SEAD-5's northern bound. This unnamed road originates at the intersection of Administration Avenue, 4<sup>th</sup> Avenue, and South Street in the former Administration Area of the Depot, which is northeast of SEAD-5, and travels westward toward what previously was the location of the abandoned munitions deactivation furnace (SEAD-16) to the west. Provisions of the SEAD-5 ROD (Parsons, 2009b) prohibit unauthorized excavations or other activities that might compromise the integrity of the soil cover, prohibits use of the land for residential purposes, and prohibits access to and use of groundwater at the site. Long-term monitoring of the groundwater at SEAD-5 was not required as data provided indicated that the groundwater quality at the site was consistent with the regional groundwater quality. On this basis, all of the wells located at SEAD-5 were designated for decommissioning.

The locations of monitoring wells decommissioned at SEAD-5 are shown on **Figure 4**.

#### SEAD-11: Old Construction Debris Landfill

The former Old Construction Debris Landfill (SEAD-11) was located in the southwestern portion of the Seneca Army Depot Activity. During its existence, SEAD-11 measured approximately 4 acres in size. Prior to the interim removal action (IRA), which was conducted between October 2006 and January 2007 and during which all buried debris and fill was excavated and transported off-site for disposal at a licensed landfill, SEAD-11 was characterized as a terraced area of elevated topography that was set on the western face of downwardly sloping terrain that ends near the Depot's outer security fence line, in the vicinity of the former airfield's northwestern end. The current SEAD-11 site is vacant, and generally follows the pre-disposal activity sloping terrain that existed in this portion of the Depot prior to the Army's occupation.

After completion of the IRA at SEAD-11, the Army and the EPA selected and documented a remedial decision of No Further Action for SEAD-11 in the ROD (Parsons, 2009d) for the site, with release of the property for unrestricted use and unlimited exposures. On this basis, groundwater monitoring is no longer required at this site and the seven groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-11 are shown on **Figure 5**.

#### SEAD-12: Radioactive Waste Burial Sites

The former Radiological Waste Burial Sites (SEAD-12) are located in the north-central portion of SEDA in the former secured Weapons Storage Area (WSA). Investigation of SEAD-12 originally began as the investigation of two separate areas, formerly designated as SEAD-12A (Radioactive Waste Burial Site – northeast corner of the Q) and SEAD-12B (Radioactive Waste Burial Site – northeast of Buildings 803, 804, and 805). SEAD-12A encompassed an area measuring approximately 1,500 feet long by 900 feet wide that was suspected to have included up to five separate, small burial pits. SEAD-12B encompassed an area measuring 300 feet long by 300 feet wide, and was suspected to have included a 5,000 gallon storage tank and a small dry waste pit.

After the completion of preliminary site investigations at SEAD-12A and SEAD-12B in 1995, the bounds of SEAD-12 were expanded based on the similarity of the chemicals found at the two historic SEADs and the general history of the overall WSA, which suggested that similar constituents were likely to exist throughout the larger area. The re-defined SEAD-12 encompassed 360 acres including all property north of Service Road No. 4 except that which was designated as SEAD-63, the Miscellaneous Components Burial Site, located partway along the western edge of the WSA. Land located north of Service Road Number 2 was used for disposal of laboratory and maintenance wastes and military components. This portion of SEAD-12 also includes Buildings 802 through 807, 810, 812 and 825, which were part of the WSA facility at SEDA. The eastern, western, and southern portions of SEAD-12 are primarily open fields and include Buildings 813 through 817, 819, and 823.

The results of the remedial investigation generally indicated that groundwater contamination, exclusive of the presence of trichloroethylene and dichloroethylene in one well (MW12-37), was not a significant concern within SEAD-12. The groundwater contamination identified at MW12-37 was addressed during an interim removal action in the area surrounding this well, and during this action, the affected well was removed (Parsons, 2006c). Based on this action, the Army does not foresee a future need to monitor groundwater at this site, and on this basis all wells were scheduled for decommissioning.

The locations of monitoring wells decommissioned at SEAD-12 are shown on **Figures 6a** and **6b**.

## SEAD-13 IRFNA Disposal Site

The former Inhibited Red Fuming Nitric Acid (IRFNA) Disposal site (SEAD-13) encompasses approximately 3 acres and included two separate disposal areas, (SEAD-13 East and SEAD-13 West) located on the eastern and western sides of the southern end of the Depot's Duck Pond, respectively, near the entrance of its source tributary. The ground surface in both areas is less than 2 feet above the water level of the Duck Pond. SEAD-13 East is bound by mostly deciduous trees and the East-West Baseline Road to the north, by deciduous trees and grassland to the east and south, and by the Duck Pond to the west. SEAD-13 West is bound by grassland and low brush to the north, west and south, and by the Duck Pond to the east.

Historically, SEAD-13 was used during the early 1960s to dispose of unserviceable IRFNA, an oxidizer used in missile liquid propellant systems. Each barrel of unserviceable IRFNA was emptied through a water pressure-powered, stainless steel ejector that was fitted onto one barrel at a time while water was flowing through the ejector. The mixture of IRFNA and water was discharged to the disposal pit through a long polyethylene hose that discharged beneath the surface of the pit being used. The discharged IRFNA/water solution mixed with the limestone in the pit to facilitate the neutralization of the acid.

The approved ROD for SEAD-13 (Parsons, 2007) specified that No Further Action in conjunction with the implementation and maintenance of a land use control that prohibited access to and use of the groundwater at the site. The groundwater access and use restriction for SEAD-13 was imposed as a result of the groundwater concentrations of nitrate, aluminum, and manganese that were detected at the

site; however, there was no data collected that indicated that the contaminated groundwater extended beyond the bounds of the AOC, or discharged into the Duck Pond. The groundwater use/access LUC will remain in effect until concentrations of identified hazardous substances beneath the AOC are reduced to levels that allowed for unrestricted use and unlimited exposures. The ROD for SEAD-13 did not require groundwater monitoring, and on this basis groundwater monitoring is no longer required at this site and the groundwater monitoring wells located at the site were designated for decommissioning.

The locations of monitoring wells decommissioned at SEAD-13 are shown on **Figure 7**.

## SEAD-24: Abandoned Powder Burning Pit

The former SEAD-24 site is located in the west-central portion of SEDA. The burning pit previously located in this AOC encompassed an area measuring approximately 325 feet by 150 feet; and it was surrounded on the east, south, and west by a U-shaped, vegetated berm that was approximately 4 feet high. The historic burn pit and berm area was excavated and removed during a time-critical removal action (TCRA) that was conducted between 2003 and 2006.

The former SEAD-24 site is bounded by West Kendaia Road to the north and by areas of open grassland and low brush to the east, south, and west. SEDA railroad tracks are located approximately 400 feet east of the former U-shaped berm. The Abandoned Powder Burning Pit was active during the 1940s and 1950s. Although operating practices at this site are unknown, black powder, M10 and M16 solid propellants, and explosive trash were probably disposed at this location by burning. Petroleum hydrocarbon fuel may have been used to initiate burns.

The Army and the EPA selected and documented a final remedial decision of No Further Action with release of the land for unrestricted use and unlimited exposures in the ROD for SEAD-24 (Parsons 2009c), and this decision received concurrence from the NYSDEC in 2009. As NFA was required for groundwater, the three groundwater monitoring wells installed at this site were designated for decommissioning by the Army.

The locations of monitoring wells decommissioned at SEAD-24 are shown on **Figure 8**.

#### SEAD-25: The Fire Training and Demonstration Pad

The former Fire Training and Demonstration Pad (SEAD-25) is located in the east-central portion of SEDA. The site is bound to the east by Administration Avenue, to the south by Ordnance Drive, to the west by grassland, brush and conifers, and to the north by grassland and a baseball field. SEAD-25 was used from the late 1960s to the late 1980s for fire control training. During the 1980s, the pad was used twice for firefighting demonstrations. A remedial action focused on the excavation of volatile organic compound and semi-volatile organic compound contaminated soil from the area was conducted in 2005. In addition, the approved ROD for SEAD-25 (Parsons, 2004b) required that groundwater monitoring be conducted until groundwater concentrations of volatile organic compounds achieved groundwater quality standards to demonstrate that additional impacts to the groundwater at and downgradient of the site were controlled. As part of the groundwater monitoring program design for SEAD-25 (Parsons, 2005b), the Army designed nine of the original 19 site wells

installed at the SEAD-25 site as locations that would be monitored to assess groundwater quality conditions. The periodic monitoring of wells at SEAD-25 continues in the designated nine wells (i.e., MW25-2, MW25-3, MW25-8, MW25-9, MW25-10, MW25-13, MW25-15, MW25-17, and MW25-18), and the Army also continues to gauge groundwater elevations in three other site well (i.e., MW25-1, MW25-6, and MW25-19) to provide additional information about the local groundwater elevation and flow conditions. SEAD-25 wells decommissioned by the Army during this effort included MW25-4D, MW25-7D, MW25-12D, MW25-14D, and MW25-16D; MW25-5D was removed during the remedial action in 2005

The locations of monitoring wells decommissioned at SEAD-25 are shown on **Figure 9**.

#### SEAD-26: The Fire Training Pit and Area

The former Fire Training Pit and Area (SEAD-26) is located in the southeastern portion of SEDA. The site is bounded to the east and west by SEDA railroad tracks; on the south by grassland and low brush; and on the north by 7<sup>th</sup> Street. SEAD-26 was in use from 1977 to 1994. The site was used one to four times a year for firefighting training. During training activates various flammable materials were floated on water, ignited, and extinguished. Investigations of SEAD-26 indicated that soil at the site was contaminated with polyaromatic hydrocarbons (PAHs) at concentrations in excess of state soil cleanup objective levels. In addition, there was an indication that groundwater at the site had been impacted by volatile organic compounds at varying concentrations.

Based on these findings, the Army conducted a remedial action that focused on the excavation and disposal of soils that were contaminated with PAHs. In addition, the ROD prepared and approved for the site (Parsons, 2004b) included a requirement to conduct groundwater monitoring at the site to further characterize the quality of the groundwater. Five of the 11 groundwater wells previously installed at the site were selected for monitoring in the Remedial Design Work Plan and Design Report (Parsons, 2005b). At the conclusion of the first year of post-remedial action groundwater monitoring, the Army recommended that groundwater monitoring was no longer required at SEAD-26 as concentrations of volatile organic compounds of concern were below cleanup goals. The agencies agreed with the Army's recommendation, and as a result of their approval, groundwater monitoring is no longer required at SEAD-26 and the groundwater monitoring wells at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-26 are shown on **Figure 10**.

## SEAD-27: Steam Cleaning Waste Tank in Building 360

Located in the east-central portion of the Depot, Building 360 was the former location of equipment refurbishing and reconstruction operations. During operations, equipment such as lathes, presses, and metal-working machines were degreased with steam, high-pressure water, and detergents in the cleaning area. Once cleaned the equipment was moved to other portions of Building 360 for rehabilitation. The Steam Cleaning Waste Tank (SEAD-27) was located in Building 360. It is a below ground, concrete tank above which track-mounted cars loaded with equipment requiring cleaning were positioned and steam cleaned. The floor surrounding and overlying the waste tank

slopes towards the tank to channel all condensate and over spray back towards the tracks and collection grates. The maximum capacity of the Steam Cleaning Waste Tank is approximately 5,000 gallons when filled to near the top or 1,100 gallons to the 2-foot freeboard mark. Use of the Steam Cleaning Waste Tank began in 1976 and ceased in January 1990.

The Army and the EPA selected and documented the implementation and maintenance of institutional controls as the proposed remedy for all land within the greater Planned Industrial/Office Development and Warehousing (PID) Areas at the Depot in the ROD (Parsons, 2004c) approved for SEAD-27. The identified institutional controls included a prohibition against the use of the land for residential purposes, and a prohibition against access to, and use of the underlying groundwater in the PID Area, due to the known poor quality of the groundwater in this area. The final ROD (Parsons, 2004c) did not contain any provision that required groundwater monitoring within the PID Area. On this basis, groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-27 are shown on **Figure 11**.

#### SEAD-48: Row E0800 Pitchblende Ore Storage Igloos

SEAD-48 is located in the southern part of the Depot along the southern side of Igloo Road No. 39, bounded to the east by Fayette Road and to the west by Seneca Road. SEAD-48 consists of 11 ammunition storage bunkers (i.e., igloos) identified as Igloos E0801 through E0811. Each igloo is constructed of reinforced concrete that is shaped like a half-cylinder and measure 26.8 feet wide by 81 feet long by 13 feet high at their highest point. During the 1940s, 1,823 barrels of pitchblende, a uranium containing ore, were stored in the igloos for approximately three months. Upon the removal of the pitchblende, the igloos became a storage site for non-radioactive munitions through the late 1970s. Licensed radioactive commodities were stored in Igloos E0801 and E0802 until the late 1970s.

The Army and the EPA selected No Further Action as the final remedy for SEAD-48, and this decision was documented in the ROD (Parsons, 2009c) approved by both parties with concurrence obtained from the NYSDEC in 2009. As no further action was required for groundwater, the historic monitoring wells at this location were designated for decommissioning under this project.

The locations of monitoring wells decommissioned at SEAD-48 are shown on **Figure 12**.

## SEAD-59: Fill Area West of Building 135

The Fill Area West of Building 135 (SEAD-59) is located in the east-central portion of SEDA. SEAD-59 is approximately 4 acres in size and encompasses an area along both sides of an unnamed dirt road that runs from the intersection of South Street, 4<sup>th</sup> Avenue, and Administration Avenue westerly through the former Depot's and current Seneca County Highway Department's maintenance yard and into the area previously occupied by the Army's historic Deactivation Furnaces (SEAD-16 and SEAD-17). Historically, SEAD-59 was used for the disposal of construction debris and oily sludge, and as the Army's version of a local Department of Public Works yard where vehicles and materials were staged.

Based on the results of site investigations performed at SEAD-59, the Army and the EPA selected to impose land use restrictions that prohibited use of the property for residential purposes and prohibited access to, and use of, groundwater, at the site. NYSDEC concurred with the remedy selected for this site. The ROD (Parsons, 2009a) did not require that groundwater monitoring be conducted at this site Based on the approval of the ROD, groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-59 are shown on **Figure 13**.

## SEAD-63: Miscellaneous Components Burial Site

Located inside the former secured WSA adjacent to SEAD-12 in the northern area of the former Depot, SEAD-63 is bounded by paved roads on the north, south, and west and by open grassland to the east. SEAD-63 was previously an undeveloped burial site located in an area that measured approximately 480 ft. by 300 ft., much of which was covered with vegetation. SEAD-63 was used from the 1950s to 1980s as a disposal area for classified parts. During this period, multiple disposal pits were excavated along a north-south line measuring approximately 200 ft. in length. SEDA personnel associated with SEAD-63 identified the types of materials disposed at this site as metal parts and "inert materials."

The Army conducted a non-time critical removal action (NTCRA) at SEAD-63 in 2004, and during the NTCRA approximately 5,100 tons of solid waste was excavated from the former burial pit locations and transported off-site to a licensed landfill where it was disposed. Subsequent to the completion of the NTCRA, samples were collected from the monitoring wells surrounding the former burial pits and the results of these samples indicated that the local groundwater quality was within regulatory limits.

The Army and the EPA selected No Further Action as the final remedy for SEAD-63, and this decision was documented in the ROD (Parsons, 2006b) approved by both parties with concurrence obtained from the NYSDEC in 2006. As no further action was required for groundwater, the historic monitoring wells at this location were designated for decommissioning under this project.

The locations of monitoring wells decommissioned at SEAD-63 are shown on **Figure 14**.

## SEAD-67: Dump Site east of Sewage Treatment Plant No. 4

The Dump Site east of Sewage Treatment Plant No. 4 (SEAD-67) is located in the east central portion of the Depot off of West Romulus Road. SEAD-67 was previously comprised of five waste piles and two berm structures that were located south of West Romulus Road in otherwise unoccupied land. Little is known about the history of SEAD-67 or the origin of the soil piles or bermed structures. An Expanded Site Inspection performed at SEAD-67 indicated that that soil at SEAD-67 had been impacted by SVOCs, polyaromatic hydrocarbons (PAHs), and mercury. Groundwater samples collected from SEAD-67 during the ESI indicated that elevated levels of iron, manganese, and aluminum were found in the groundwater at the site, but the groundwater samples characterized all contained elevated levels of turbidity.

The contents of the piles and the berm structures were removed during a TCRA conducted between 2002 and 2004 when all of the stockpiled soil and other surface soils were excavated and disposed off-site at a licensed landfill.

The Army and the EPA selected an action requiring land use controls as the final remedy for SEAD-67, and this decision was documented in the ROD (Parsons, 2007) approved by both parties with concurrence obtained from the NYSDEC in 2007. The selected land use controls included those imposed on the greater PID Area within the Depot prohibiting residential activities and access to and use of groundwater. No groundwater monitoring requirement was identified in the ROD (Parsons, 2007). On this basis, groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-67 are shown on Figure 15.

#### SEAD-70: Fill Area Adjacent to former Building T-2110

The fill area that comprises SEAD-70 is located on the southern side of East-West Baseline Road approximately 750 feet west of its intersection with North-South Base Line Road. The AOC is a mounded landfill once used for construction debris. It is located on the southeastern side of the former Building T-2110, a collapsed wooden barn, which was demolished and removed in 2006.

Site investigations identified soil that was contaminated with select metals at levels that posed potential human health risks to future owners or users of the property. In response to this finding, the Army conducted a focused removal action of contaminated soil and then revised the risk assessment to reflect the new concentrations identified at the site. The results of this risk assessment are still pending regulatory review and approval. However, results for groundwater at this site did not identify undo risks to future owners or users of the site, and on this basis groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-70 are shown on **Figure 16**.

#### SEAD-71: the Alleged Paint Disposal Area

The Alleged Paint Disposal Area (SEAD-71) is located in the east-central portion of SEDA. SEAD-71 is wedge shaped and is located west of 4<sup>th</sup> Avenue near Buildings 114 and 127. The AOC is approximately 2.4 acres in size and bounded on the north and south by railroad tracks serving Buildings 114 and 127. The topography is relatively flat with a gentle slope to the southwest.

Prior to the remedial investigation (RI), rumors suggested that paints and/or solvents were disposed at SEAD-71 in burial pits. The results of the RI test pitting operations failed to confirm the paint and oil disposal rumors, but did indicate that the area had been used for the disposal of construction debris, including sheet metal, asphalt, chain link fencing, sand and stone, piping, railroad ties, wood and cinders.

Based on the results of site investigations performed at SEAD-71, the Army and the EPA selected to impose land use restrictions that prohibited use of the property for residential purposes and prohibited

access to, and use of groundwater, at the site. NYSDEC concurred with the remedy selected for this site. Despite the groundwater access and use limitation, the ROD (Parsons, 2009a) did not require that groundwater monitoring be conducted at this site, as this restriction had previously been imposed throughout the greater PID Area. Based on the approval of the ROD, groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-71 are shown on **Figure 13**.

## SEAD-119B: Former Small Arms Range at the Lake Housing Area

The former Small Arms Range at the Lake Housing Area is located within approximately 5,000 feet west of the secured and fenced area of SEDA in the vicinity of an area where military personnel were previously billeted. This area is outside of the current SEDA boundaries, and within Sampson State Park. The site is bounded on the north by the gorge of the Kendaia Creek and by Scorpion Road on the south. The most recent photographs of SEAD-119B indicate that the site is overgrown with thick brush and small trees.

According to the ordnance and explosives (OE) Archive Search Report (ASR) (USACE, 1998), the Former Small Arms Range at the Lake Housing Area first appeared on Depot site plans in 27 February 1955 as part of the Sampson Air Force Base. Not much is known about the operation of SEAD-119B, but during operations it is likely that an earthen berm located at the range served as a backstop for small arms bullets.

The Army conducted an investigation of SEAD-119B in 2002 which included geophysical investigations, test pitting, soil sampling and analysis, and the installation and development of groundwater monitoring wells. However, based on the results of the geophysical survey, test pits, and soil sampling and analysis, the Army concluded that the area was not likely to have been used extensively, if at all, as a firing range. On this basis the Army concluded in the Final Findings Report for this site (Parsons, 2004a) that this presumed site should be removed from the list of potential SWMUs, and after review and consideration the EPA approved this recommendation. On this basis, the three wells previously installed at this location were selected for decommissioning as part of this effort.

The locations of monitoring wells decommissioned at SEAD-119B are shown on **Figure 17**.

#### SEAD-121C: Defense Reutilization and Marketing Office (DRMO) Yard

Located roughly 4,000 ft. southwest of the former Depot's main entrance off State Route 96, the DRMO Yard (SEAD-121C) is a triangular gravel lot encompassing approximately 8.75 acres. Several man-made features are prominent within the DRMO Yard including one storage building; an earthen-bottom, open storage cell; an elongated, segmented, rectangular-shaped, open concrete storage structure; and a multi-chambered, open storage cell. The DRMO Yard was used by the Army to store scrap metal, vehicles, and other items that were no longer needed for national defense, or that did not comply with legislative and regulatory requirements.

Based on the results of site investigations performed at SEAD-121C, the Army and the EPA selected to impose land use restrictions that prohibited use of the property for residential purposes and prohibited access to, and use of groundwater, at the site. NYSDEC concurred with the remedy selected for this site. Despite the groundwater access and use limitation, the ROD (Parsons, 2008a) did not require that groundwater monitoring be conducted at this site, as this restriction had previously been imposed throughout the greater PID Area. Based on the approval of the ROD, groundwater monitoring is not required at this site and the groundwater monitoring wells located at the site were selected for decommissioning.

The locations of monitoring wells decommissioned at SEAD-121C are shown on Figure 18.

## SEAD-122B: Small Arms Range at the Airfield Parcel

The Small Arms Range (SAR) (SEAD-122B) located within the Airfield Parcel of the Depot along Route 96A was previously used by the Air Force, Navy, and Army as a small arms qualification ground. The Airfield SAR is located in the southwest corner of SEDA adjacent to the SEDA Airfield. The SAR consists of two contiguous bermed small arms ranges: one previously used for small arms training, and the second previously used for machine gun targeting.

As part of a treatability study conducted in 2004, approximately 500 cy of soil were excavated from SEAD-122B. The excavations included removing of soil: from the floor of the range; from the western face of the backstop berm; and from a drainage swale.

Since construction by the Air Force in the early 1950s, the size and shape of the firing lanes and berms have been modified. The configuration of the firing lanes and berms observed during the investigations consisted of a 20-lane SAR with protective wooden baffles and a two-lane machine gun range. Each of the firing line areas were surrounded on three sides (north, east, and south) by earthen berms that measure up to 28 ft. in height. The firing line areas were suspected to contain UXO, high lead concentrations, and possibly other high metal concentrations. Underlying the firing lines within each range area was a network of footer drains that captured surface water runoff from within the firing lines and conveyed it to the open area located west of the SAR where it was discharged. The surface water and groundwater flow is anticipated to follow the general trend of the land and flow towards the west and Seneca Lake.

Results of site investigations, which included evaluations of soil, surface water, and groundwater, indicated that metals were present in soils at site at concentrations that exceeded soil cleanup objectives identified by the state. The Army subsequently commissioned at treatability study of site soils, and during the work conducted in 2004 removed, treated, and disposed of approximately 500 cubic yards from the former small arms range site. At the conclusion of this effort, the Army and EPA selected and documented in a ROD (Parsons, 2007) that no further action in concert with a land use control that prohibited use of the Airfield property to for residential purposes. This selected remedial action was approved by both parties, and concurrence was received from NYSDEC. Based on this decision, monitoring wells that were installed to facilitate groundwater sampling at this site are no longer

required, and they are included in the ones that have been designated for decommissioning under this project.

The locations of monitoring wells decommissioned at SEAD-122B are shown on Figure 19.

#### 3.0 WELL DECOMMISSIONING

#### 3.1 PRELIMINARY INSPECTION RESULTS

A preliminary site inspection of all wells selected for decommissioning was conducted between August 23 and August 27, 2010 to locate the wells and to evaluate if the wells were accessible by the equipment needed to complete the process. During these inspections, the general condition of the wells were also noted and recorded. During the site inspection, 31 of the selected wells could not be located in the field. Subsequent review of information recorded in prior site reports and documents, indicated that 26 of the missing wells were decommissioned during prior site actions; another four are suspected to have been proposed, but not installed as further review of available reports suggest that they were never sampled. The last well (MW70-2) is known to have been installed, as it was sampled during prior work commissioned by the Army, but no evidence of its prior existence was found at the site of installation. Further, five wells originally selected for decommissioning were retained due to their continued use for groundwater elevation gauging as part of the Ash landfill OU monitoring program, while two others were found to be in such poor condition they were added to those to be decommissioned.. The following information was collected during the preliminary site inspection:

- SEAD-13: Monitoring wells MW13-8, MW13-13, and MW13-14 were never installed based on a review of the associated documents. Brush or vegetation clearing was required to access 11 of the 12 locations prior to decommissioning.
- SEADs-5, 59, and 71: Monitoring wells MW5-1, MW5-3, MW59-3, and MW59-6, were decommissioned either during the SEAD-5 remedial action conducted in June 2009 or during the SEAD-59 and 71 Time Critical Removal Action conducted in 2002. Well 59-5 is suspected to never to have been installed as no record was ever found that it was sampled, and no coordinates were located for it in the Army's Seneca environmental database. Brush or vegetation clearing was required to access nine of the 10 locations prior to decommissioning.
- SEADs-12, 48, and 63: Monitoring wells MW12-07, MW12-08, MW12-10 through MW12-15, MW12-33, MW12-34, MW12-37 and MW12A-01, were decommissioned during either the SEAD-12 remedial action conducted in July 2009 or a previous program implemented at the Depot. Brush or vegetation clearing was required to access 28 of the 43 locations prior to decommissioning.
- SEADs-121C, 122B, and 70: Monitoring well MW70-2 was not found during the site work and was decommissioned during a previous program implemented at the Depot. A broken concrete collar was found at the location of MW70-3, but other components of the well (bollards and protective cap, well upriser and screen) were not found. Field personnel dug down to a depth of approximately five feet below grade but were unable to find any other portion of the well. The location was back filled with grout and covered with native soil. Brush or vegetation clearing was required to access six of the 10 locations prior to be decommissioning.

- SEADs-25 and 26: Monitoring well MW25-11 was added to the list of wells to be decommissioned. Monitoring wells MW25-05D and MW26-09 were decommissioned during the remedial action conducted in November 2005. Brush or vegetation clearing was required to access 16 of the 22 locations prior to decommissioning.
- SEADs-24 and 67: Brush or vegetation clearing was required to access five of the six locations prior to decommissioning.
- Ash Landfill: Monitoring wells MW-45 and PT-11 were added to the list of wells to be decommissioned. Monitoring wells MW-48, MW-58D, MW-60, PT-16, and PT-20 were removed from the list since these wells are currently used for groundwater elevation gauging. Monitoring wells MW-05, MW-12A, MW21, and MW-35 were decommissioned during a previous program implemented at the Depot. Brush or vegetation clearing was required to access 22 of the 29 locations prior to decommissioning.
- SEADs 119B and 27: Brush or vegetation clearing was required to access three of the five locations prior to decommissioning
- SEAD-4: Monitoring wells MW4-4, MW4-6, MW4-8, and MW4-10 were decommissioned during the remedial action conducted in 2008. Brush or vegetation clearing was required to access seven of the nine locations prior to decommissioning.
- SEAD-11: Brush or vegetation clearing was required to access all seven locations prior to decommissioning.

The information generated during the preliminary site inspection is summarized on **Table 1-1**.

#### 3.2 WELL DECOMMISSIONING ACTIVITIES

The Army decommissioned 146 groundwater monitoring wells in accordance with specifications identified in its work plan "Well Decommissioning Work Plan" (Parsons, August 2010). The work plan originally designated 179 wells for decommissioning; however, during the preliminary inspection 31 wells could not be found at their identified locations; further review of available information indicated that 28 of these wells were previously decommissioned during prior investigation or removal actions conducted at the Depot or were not installed (i.e., MW59-5, MW13-13, and MW13-14). Three other wells previously not selected for decommissioning were found to be in poor condition and were included to those that were decommissioned; other decisions resulted in five wells originally scheduled for decommissioning to be retained. Northing and Easting coordinates of the decommissioned wells are provided in **Table 1-1**. The original construction details for all wells decommissioned (where available) are provided in **Appendix A**.

Two decommissioning events were conducted on or between the dates of September 13-24, 2010 and between the dates of January 25-27, 2011. The January 2011 mobilization event was required as site clearing and grubbing was not completed at some locations during September, access to the off-site wells located in the farmer's field could not be gained until after the crop was harvested, and the selected driller had other work commitments during late September through early January 2011. A

Notice of Intent (NOI) to proceed with the well decommissioning activities was submitted to the EPA and NYSDEC in August 2010. A copy of the NOI is provided in **Appendix B**.

The decommissioning of each well was addressed on an individual basis and the appropriate procedure was selected by the field geologist based upon the well's condition. Although 'decommissioning by over-drilling' was originally listed as a possible decommissioning procedure, it was determined in the field that this method was not appropriate for the wells being decommissioned. The protective casing and its concrete pad, and if any bollards were present, were removed prior to well decommissioning. Personnel of Parsons and its subcontractor, GeoLogic NY decommissioned designated wells via one of two methods:

- Casing Pulling the well's bottom cap was punctured and then the well casing was pulled
  from the ground while the former well installation's void space was grouted by the tremmie
  pipe method with a Portland cement and Bentonite mixture as the casing was lifted. Once the
  well riser was removed, void space remaining at the ground surface was filled using either the
  remaining grout or the remaining grout covered with soil; or
- Grouting in Place the well's bottom cap was punctured and then the well casing was grouted from the bottom up by the tremmie pipe method with a Portland cement and Bentonite mixture. For wells grouted-in-place at SEAD-12 (MW12-35) and SEAD-25 (MW25-04D, MW25-07D, MW25-12D, MW25-14D, and MW25-16D), the concrete collar was removed, the protective casing and well upriser were cut off below grade at a level between 1 and 5 ft., and the level of grout in the upriser was topped off, and then the former well was covered with soil. MW71-1 and MW71-2 were initially constructed with roadway box completions and when the inner casing could not be pulled, the well riser and road box were filled with grout to grade surface.

Varying types of deep (i.e., bedrock) well installations were encountered in the Ash Landfill. In some cases (e.g., MW-35D, MW-38D, MW-41D, MW-42D, MW-49D, MW-51D, MW-54D, and MW-57D) and inner 2 inch PVC well screen and upriser was set in competent bedrock and was encased in an outer protective casing that extended from some depth below the competent/weathered shale interface to ground surface. In other cases (e.g., MW-50D, MW-52D, and MW-55D) and inner 2 inch PVC well screen and upriser was set in competent bedrock and was encased in an outer protective casing that extended from some depth below the competent/weathered shale interface to a level above ground surface. In either case, once the well screen was set in sand pack and the top seal was installed, the annulus between the inner and outer protective casing was then filled with a grout mixture. In the case of the former deep well installations, a cement/bentonite grout was used to fill the annular space, while in the latter installations (i.e., MW-50D, MW-52D, MW-55D), Volclay grout (bentonite only) was used to fill the annular space. Once the inner grout had been added, the wells were completed with protective collars, protective well uprisers, and locked covers.

The former wells (i.e., MW-35D, MW-38D, MW-41D, MW-42D, MW-49D, MW-51D, MW-54D, and MW-57D) were decommissioned by filling the inner well's screen and upriser

with a Portland cement and Bentonite mixture, removing the well's protective casing and concrete collar, topping off the grout level in the remaining well upriser and outer protective casing, and then filling the area around the decommissioned well with soil. For the other wells (i.e., MW-50D, MW-52D, MW-55D) the concrete collars were removed, the inner and other protective casing were cut off below grade level and removed, and then the location was covered with soil.

After the grout was brought to required level, the remaining space was backfilled with native material. A well decommission record was prepared for each well and is provided in **Appendix C**.

A general description of the well abandonment activities is provided in this section; details of specific well abandonment method used for each well is provided in **Table 1-2**. One hundred and twenty (120) of the 146 wells decommissioned were completed via casing pulling (grout, pull, grout – GPG), while seven had grout filled portions of the well left in place after they snapped during the casing pull (GPG/GIP).

- SEAD-13: 11 wells grouted, pulled casing, back grouted monitoring wells MW13-1 through MW13-7 and MW13-9 through MW13-12.
- SEADs-5, 59, and 71: seven wells grouted, pulled casing, back grouted monitoring wells MW5-2, MW59-1, MW59-2, MW59-4, MW59-7, MW59-8, MW71-3; pulling casing at one location resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole monitoring well MW71-4.
- SEADs-12, 48, and 63: 38 wells grouted, pulled casing, back grouted monitoring wells MW12-01, MW12-02, MW12-04, MW12-06, MW12-09, MW12-16 through MW12-27, MW12-29 through MW12-32, MW12-38 through MW12-40, MW12A-03, MW12B-01 through MWB-03, MW48-1 through MW48-6, MW48-8, and MW63-1 through MW63-3; pulling casing at three locations resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole monitoring wells MW12-03, MW12-05, and MW48-7.
- SEADs-121C, 122B, and 70: eight wells grouted, pulled casing, back grouted –monitoring wells MW121C-3 through MW121C-6, MW-2 through MW-3, and MW70-1 and MW-70-4; pulling casing at one location resulted in part of the grout filled well screen/upriser to separate and be left in the back grouted hole monitoring wells MW-1 at SEAD-121B.
- SEADs-25 and 26: 11 wells grouted, pulled casing, back grouted monitoring wells Monitoring wells MW25-11, MW26-01 through MW26-08, MW26-10, and MW26-11.
- SEADs-24 and 67: six wells grouted, pulled casing, back grouted monitoring wells MW24-01 through MW24-03, and MW67-1through MW67-3.
- Ash Landfill: 16 wells grouted, pulled casing, back grouted monitoring wells MW-28, MW-30, MW-31, MW-33, MW-34, MW-36, MW-37, MW-43, MW-45, MW-47, MW-53, MW-59, MWT-11, PT-21A, PT-23, and PT-25; pulling casing at two locations resulted in part

of the grout filled well screen/upriser to separate and be left in the back grouted hole – monitoring wells PT-11 and PT-15.

- SEADs 119B and 27: five wells grouted, pulled casing, back grouted monitoring wells MW119B-1 through MW119B-3, MW-1 and MW-2.
- SEAD-4: nine wells grouted, pulled casing, back grouted monitoring wells MW4-1 through MW4-3, and MW4-5, MW4-7, MW4-9, MW4-11 through MW4-13.
- SEAD-11: seven wells grouted, pulled casing, back grouted monitoring wells MW11-1 through MW11-7.

The remaining wells were decommissioned by grouting in place. The list below summarizes the sites and wells that were decommissioned by grouting in place:

- SEADs-5, 59, and 71: Monitoring wells MW71-1 and MW71-2.
- SEADs-12, 48, and 63: Monitoring well MW12-35.
- SEADs-25 and 26: Monitoring wells MW25-04D, MW25-07D, MW25-12D, MW25-14D, and MW25-16D.
- Ash Landfill: Monitoring wells MW-35D, MW-38D, MW-41D, MW-42D, MW-49D, MW-50D, MW-51D, MW-52D, MW-54D, MW-55D, and MW-57D.

Records documenting well construction details could not be located for wells in SEAD-59 (MW59-4 through MW59-8), and MW71-4 in SEAD-71 prior to the initiation of field activities. No evidence has been found to indicate that MW59-5 was ever installed. Well construction records for the last five wells (i.e., SEAD-59-4 and SEAD-59-6 through SEAD-59-8 and SEAD-71-4) were archived in off-site records storage facilities and could not be found. Information acknowledging this missing well completion information will be inserted into appropriate sections of the Well Decommissioning Report.

The lack of well installation and completion records for these wells, exclusive of MW59-5, did not hamper field efforts to decommission the wells. Based on Parsons' long-term knowledge of the Seneca site, the depth of the wells were each estimated at 15 feet as this represents the rough midpoint of the overburden horizon's thickness at all locations across the Depot. Upon accessing each of the wells in the field, physical characteristics of the installed well found, including casing type and diameter, the length of protective casing stickup, and the length of well riser and screen were measured and recorded on the Well Decommissioning Record, and then the work was performed. With reference to well MW59-5, survey coordinates are not recorded in the Army's database for this location and efforts to identify it at the presumed installation location were unsuccessful. Therefore, this well was not abandoned.

#### 3.3 WASTE GENERATION AND DISPOSAL

The solid waste generated during decommissioning activities included the protective steel casings, bollards, well pipe and screen, and concrete collars. The wastes were disposed as follows:

- No soil was recovered from any of the well installation locations. All soil disturbed around the decommissioned well sites was used as backfill at the location.
- All well installation debris, including protective steel casings, bollards, well pipe, and screen, and concrete collars (tare weight 16.38 tons) was disposed of as construction and demolition debris at a licensed landfill.

#### 4.0 SUMMARY

The "Well Decommissioning Work Plan" (Parsons August 2010) listed 182 groundwater monitoring wells for decommissioning, however, during the preliminary inspection 31 wells could not be found at their identified locations and are believed to have been decommissioned during other programs conducted at the Depot. One hundred forty-six (146 wells were decommissioned in accordance to the work plan (Parsons August 2010) and NYSDEC Groundwater Monitoring Well Decommissioning guidance document (January 2009).

Wells were abandoned via one of three methods:

- Casing Pulling the well's bottom cap was punctured, the well upriser was filled with grout and then the well casing was pulled from the ground while the former well installation's void space was grouted by the tremmie pipe method;
- Grouting in Place the well's bottom was punctured and the casing is grouted from the bottom up by the tremmie pipe method to approximately five feet bgs, the top five feet of casing and associated well materials is cut and removed from the ground; or
- Casing Pulling/Grout in Place Casing Pulling / Grout in Place Several of the wells that
  were selected for decommissioning by the grouting followed by casement pulling broke
  during the process. As a result, portions of the well casing and/or well screen were left in
  place, filled with grout and the remainder of the well annulus was overfilled with grout that
  was tremmied into place.

One hundred and twenty-seven (120 of the wells were decommissioned using the case pulling method, including seven in which a portion of the well screen/upriser broke off and was encased in the additional grout that was used to fill the vacant annular space of the vacated borehole. The remaining 19 wells were decommissioned by being grouted in place.

#### 5.0 REFERENCES

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## **TABLES**

Table 1-1 Groundwater Wells Decommissioned

Table 1-1
Groundwater Wells Decommissioned
Seneca Army Depot Activity

SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW-		Northing	Easting	Monitoring	Well Depth		Selected				Top of	Bottom of	Length	of Grout		
LocationWellSEAD-03 Ash LandfillMWSEAD-03 Ash LandfillMWSEAD-03 Ash LandfillMWSEAD-03 Ash LandfillMWSEAD-03 Ash LandfillMW	W-28		Facting	Monitorina		<b>D</b> (		• •			•		•			
SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW- SEAD-03 Ash Landfill MW-	W-28			Well Type	from Ground Surface (ft bgs)	Date Abandoned	Decommissioning Method (1)	Casing Pulled	Bollards Removed	Number of Bollards	Grout (ft bgs) (2)	Grout (ft bgs)	of Grout (ft)	Used (gallons)	Field Geologist	t Comments
SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW		995073.237	739765.473	Overburden/Bedrock	8.6	09/21/10	GPG	10.5	YES	3	1	8.3	7.3	8	SD	Comments
SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW		994586.276	739891.668	Overburden/Bedrock	7	09/20/10	GPG	10.5	YES	3	1	6.6	5.6	6	SD	
SEAD-03 Ash Landfill MW SEAD-03 Ash Landfill MW		994473.894	739869.345	Overburden/Bedrock	9.4	09/20/10	GPG	10.4	YES	3	1	10.4	9.4	10	SD	
	W-33	994429.11	739989.204	Overburden/Bedrock	8.5	09/20/10	GPG	9.8	YES	3	1	7.2	6.2	7	SD	
SEAD-03 Ash Landfill MW-	W-34	993641.89	739975.8	Overburden/Bedrock	16.2	09/20/10	GPG	18.1	YES	3	1	16.2	15.2	17	SD	
	V-35D	994450.265	739581.475	Bedrock	54	01/26/11	GIP		YES	3	0	56.3	56.3	NA	SD	Stickup removed, 6 inch casing in left in place, grouted all of 2 inch casing
	W-36	994467.85	739577.77	Overburden/Bedrock	14.71	01/26/11	GPG	16.6	YES	3	0	15.8	15.8	NA	SD	
	W-37	996634.22	739365.591	Overburden	11.7	09/21/10	GPG	13.75	YES	3	1	13.75	12.75	13	SD	
		995521.008	739695.393	Bedrock	29.7	09/21/10	GPG	33.4	YES	3	0	29.7	29.7	30	BMc	
		995948.132 994341.349	741843.734 741606.6	Bedrock Bedrock	44.5 45	09/17/10 09/16/10	GIP GIP	4.6 4.2	YES YES	3	2	44.7 45	42.7 43	20 20	SD SD	
		995184.817	740805.392	Overburden/Bedrock	5.5	09/16/10	GPG	7.6	YES	3	1	4.8	3.8	5	SD	
		995429.677	740320.317	Overburden	9	09/20/10	GPG	8.4	120	J	0	5.4	5.4	3	BMc	
		995088.598	739188.829	Overburden/Bedrock	5.5	01/26/11	GPG	8.5	YES	3	Ö	6	6	NA	SD	
		995171.215	740321.557	Bedrock	35.5	09/20/10	GIP		YES	3	0	35	35	8	BMc	
SEAD-03 Ash Landfill MW-	V-50D	995165.986	740317.179	Bedrock	57.8	09/20/10	GIP		YES	3	0	57.8	57.8	20	BMc	
		995083.605	739188.678	Bedrock	33.3	01/25/11	GIP	2.5	YES	3	0	35.5	35.5	NA	SD	
		995078.253	739189.03	Bedrock	56.7	01/25/11	GIP	3	YES	3	0	58.7	58.7	NA	SD	
		994820.784	739844.61	Overburden/Bedrock	8	09/20/10	GPG	10.4	YES	3	0	8.4	8.4	6	BMc	
		994826.338	739840.663	Bedrock	32.6	09/20/10	GIP	2.6	YES	3	0	32.4	32.4	32	BMc	
	V-55D V-57D	994820.83 994768.367	739837.662 739436.205	Bedrock Bedrock	55.9 33	09/20/10 01/26/11	GIP GIP	1.0	YES YES	ა ა	0	55.8 33.2	55.8 33.2	50 NA	BMc SD	
		994768.367	739436.205 740825.707	Overburden/Bedrock	33 8.5	01/26/11	GPG	1.9 9.7	YES	3	1	33.2 7.8	33.2 6.8	NA 7	SD	
		994615.116	739791.2916	Overburden/Bedrock	15	09/10/10	GPG	10	YES	3	0	10.3	10.3	, 11	SD	Five feet of screen grouted in place and left in hole.
		994399.871	740785.36	Overburden	10	09/20/10	GPG/GIP	10	120	Ü	1	15.4	14.4	15	SD	Five feet of screen grouted in place and left in hole.
	T-15	994183.74	739974.54	Overburden/Bedrock	15.4	09/20/10	GPG/GIP	14.6			1	16	15	16	SD	g. canca p. accommended
	Γ-21A	994924.11	740214.13		15	09/20/10	GPG	20.4	YES	3	0	18.4	18.4	10	ВМс	
	T-23	995250.93	739850.04	Overburden/Bedrock	9.7	09/20/10	GPG	10.5	YES	3	1	7.7	6.7	7	SD	
	T-25	994377.25	739840.14	Overburden/Bedrock	9.5	09/20/10	GPG	12.1			1	9.3	8.3	8	SD	
	W4-1	999187.45	733603.32	Overburden	10.5	09/17/10	GPG	12.9			1	10.7	9.7	10	SD	
	W4-2	987818.31	744938.98	Overburden	4	09/21/10	GPG	5			0	3	3	10	BMc	
	W4-3 W4-4	987226.64 987026.91	745020.76 744172	Overburden	9	09/21/10	GPG	11.4			1	9.2	8.2	9	SD	Deceminationed during SEAD A Demodial Action
	w4-4 W4-5	999012.97	733407.82	Overburden Overburden	10 6	09/17/10	GPG	8.4			1	5.9	4.9	6	SD	Decomissioned during SEAD-4 Remedial Action
	W4-6	987261.57	744333.8	Overburden	9.9	09/1//10	Gr G	0.4			'	5.5	4.5	U	SD	Decomissioned during SEAD-4 Remedial Action
	W4-7	987525.87	744761.6	Overburden	6.4	09/17/10	GPG	8.5			1	6.4	5.4	6	SD	2000 modernou dannig CE/12 i Nombalai / totion
	W4-8	986990.62	744352.19	Overburden	10			0.0			•	• • •	•	•	-	Decomissioned during SEAD-4 Remedial Action
SEAD-4 MW-	W4-9	986867.47	745166.94	Overburden	6.2	09/21/10	GPG	6.2			1	6.2	5.2	6	SD	· · · · · · · · · · · · · · · · · · ·
	V4-10	986620.39	745454.9	Overburden	8.1											Decomissioned during SEAD-4 Remedial Action
	V4-11	986944.99	745680.33	Overburden	9	09/21/10	GPG	11.5			1	8.5	7.5	8	SD	
	V4-12	987174.73	745493.52	Overburden	11	09/17/10	GPG	13.6			1	11.2	10.2	NA	SD	
	V4-13	988053.51	745097.44	Overburden	6.8	09/23/10	GPG	9	\/=0		1	6.4	5.4	6	SD	December of the OFAD FD Community of the
	W5-1	998728.88	750506.5	Overburden	11.9	00/04/40	ODO	40	YES	3	4	0.4	0.4	0	O.D.	Decomissioned during SEAD-5 Remedial Action
	W5-2 W5-3	998755.38 998884.31	750226.06 750255.94	Overburden Overburden	10 8.5	09/24/10	GPG	12	YES YES	ა ვ	1	9.4	8.4	9	SD	Removed during SEAD-59 Time-Critical Removal Action
	VV5-3 V11-1	987710.92	744223.74	Overburden	14.2	01/25/11	GPG	16.6	IES	J	Λ	13.8	13.8	NA	SD	Removed during OLAD-99 Time-Chilical Removal Action
	W11-1 W11-2	987947.64	744223.74	Overburden	8.5	09/21/10	GPG	12.3	YES	3	0	8.5	8.5	NA	BMc	
	V11-3	987404.04	743517.47	Overburden	9	09/21/10	GPG	7.4	5	v	1	7.4	6.4	7	SD	
	V11-4	987664.42	743443.95	Overburden	10.5	09/21/10	GPG	13			0	10	10	, NA	BMc	
	V11-5	987780.7	743542.5	Overburden	11	09/21/10	GPG	11	YES	3	0	10.5	10.5	10	BMc	
	V11-6	987550.5	743444.4	Overburden	8.5	09/21/10	GPG	10.35			1	8	7	7	SD	
	V11-7	987462.8	743485.7	Overburden	6	09/21/10	GPG	7.6			1	5.4	4.4	5	SD	
	/12-01	1015591.7	745456.8	Overburden	9	09/15/10	GPG	11.4	YES	3	1	9	8	9	SD	
	/12-02	1013710.3	745536.3	Overburden	6	09/15/10	GPG	8.6	YES	3	1	6	5	8	SD	
	/12-03	1015079.9	745477	Overburden	18	09/15/10	GPG/GIP	14.5	YES	3	1	18	17	18	SD	Portion of screen left in place filled with grout.
	/12-04	1016353.4	744983.6	Overburden	12.2	09/15/10	GPG	14.4	YES	3	1	11.9	10.9	12	SD	Dertien of careen left in place filled with great
	/12-05	1016284.4	743429 742086.6072		18.4	09/15/10	GPG/GIP	17.1 11.6	YES	ა ა	7	18.1	17.1 11.6	18 NA	SD SD	Portion of screen left in place filled with grout.
		1016120.641 1015394.579	742086.6072 744855.8807	Overburden	11.8 13.6	01/25/11	GPG	0.11	YES YES	ა ვ	U	11.6	11.6	NA	2D	Removed during SEAD-12 Removal Action at Radiological Disposal Pits
		1015208.876	744655.8607	Overburden	12				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits

Table 1-1
Groundwater Wells Decommissioned
Seneca Army Depot Activity

														Quantity		
					Well Depth		Selected				Top of	Bottom of	Length	•		
AOC				Monitoring	from Ground	Date	Decommissioning	-			Grout	Grout	of Grout		Field	
Location	Well ID	Northing	Easting	Well Type	Surface (ft bgs)	Abandoned	Method (1)	Pulled	Removed	Bollards	(ft bgs) (2)	(ft bgs)	(ft)	(gallons)	Geologis	t Comments
SEAD-12	MW12-09	1015955.513	744009.168	Overburden	14.1	09/13/10	GPG	16.6	YES	3	1	13.8	12.8	13	SD	Described during OSAD 40 Described Addison of Dedictorical Discount Diffe
SEAD-12	MW12-10	1015189.846	745007.4668	Overburden/Bedrock	17				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12 SEAD-12	MW12-11 MW12-12	1015123.089 1015162.954	744975.8444 744888.0145	Overburden/Bedrock Overburden/Bedrock	13.1 13				YES YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12 SEAD-12	MW12-13	1015162.954	744875.6862	Overburden/Bedrock	13				YES	ა ვ						Removed during SEAD-12 Removal Action at Radiological Disposal Pits  Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-14	1015306.316	744664.5159	Overburden/Bedrock	14				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-15	1015521.901	744743.1108	Overburden/Bedrock	13.1				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-16	1015979.89	743879.1864	Overburden/Bedrock	14.2	09/13/10	GPG	16.6	YES	3	1	14	13	14	SD	
SEAD-12	MW12-17	1015807.672	743883.226	Overburden/Bedrock	18.4	09/13/10	GPG	21.2	YES	3	1	18	17	18	SD	
SEAD-12	MW12-18	1016052.372	743572.7763	Overburden/Bedrock	14.5	09/13/10	GPG	17	YES	3	1	17	16	17	SD	
SEAD-12	MW12-19	1013585.11	742593.6179	Overburden/Bedrock	11	09/14/10	GPG	13.3	YES	3	1	10.4	9.4	11	SD	
SEAD-12	MW12-20	1013484.551	742579.8286	Overburden/Bedrock	14.4	09/14/10	GPG	16.9	YES	3	1	14.2	13.2	14	SD	
SEAD-12	MW12-21	1013550.626	742955.5327	Overburden/Bedrock	11.2	09/14/10	GPG	14	YES	3	1	11.2	10.2	12	SD	
SEAD-12	MW12-22	1013588.108	741426.1379	Bedrock	12.6	09/14/10	GPG	15.8	YES	3	1	31	12	13	SD	
SEAD-12	MW12-23	1013490.534	741441.3235	Bedrock	13.3	09/14/10	GPG	15.8	YES	3	1	13.8	12.8	14	SD	
SEAD-12	MW12-24	1012214.574	742040.503	Overburden/Bedrock	10	09/15/10	GPG CPC	12.7	YES	3	1	11.1	10.1	11 11	SD	
SEAD-12 SEAD-12	MW12-25 MW12-26	1012127.712 1012155.909	742084.164 742161.7122	Overburden Overburden	10.3 10.1	09/15/10 09/15/10	GPG GPG	13.7 13.5	YES YES	ა ვ	1	10.8 11	9.8 10	11 11	SD SD	
SEAD-12 SEAD-12	MW12-27	1012826.292	742101.7122	Overburden	10.1	09/14/10	GPG	12.8	YES	3	1	9.7	8.7	10	SD	
SEAD-12	MW12-29	1013765.552	744296.95	Bedrock	14	09/14/10	GPG	16.8	YES	3	1	13.8	12.8	14	SD	
SEAD-12	MW12-30	1013819.883	744281.4139	Bedrock	14.1	09/14/10	GPG	16.8	YES	3	1	14	13	14	SD	
SEAD-12	MW12-31	1012105.078	744693.7058	Bedrock	10	09/14/10	GPG	13	YES	3	1	10	9	10	SD	
SEAD-12	MW12-32	1012146.997	744711.3122	Overburden	10.5	09/14/10	GPG	13.1	YES	3	1	10.4	9.4	11	SD	
SEAD-12	MW12-33	1015645.26	744634.3651		15				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-34	1015800.321	744650.6525		15				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-35	1015919.123	743562.801	Bedrock	38	09/13/10	GIP	4.3	YES	3	2	38	36	NA	SD	
SEAD-12	MW12-37	1014123.316	744790.3965	Bedrock	10.7				YES	3						Removed during SEAD-12 Supplemental Remedial Investigation
SEAD-12	MW12-38	1014091.533	744716.7817	Overburden	10.5	09/14/10	GPG	10.5	YES	3	0	10.5	10.5	10	SD	
SEAD-12	MW12-39	1013934.991	744716.7185	Overburden	10.5	09/14/10	GPG	10.2	YES	3	0	10.2	10.2	10	SD	
SEAD-12	MW12-40	1014236.369	744470.3013	Overburden	10.9	09/14/10	GPG	13.4	YES YES	3	1	10.4 12	9.4	10 ΝΔ	SD SD	
SEAD-12 SEAD-12	MW12A-02 MW12A-03	1015117.1 1015521.4	744926.75 744532.25	Overburden Overburden	12 15.1	09/14/10 09/14/10	GPG GPG	13 16.4	YES	ა ვ	1	14.9	13.9	NA NA	SD	
SEAD-12 SEAD-12	MW12B-01	1015934.4	744332.23	Overburden	17.8	09/13/10	GPG	19.2	YES	3	1	18	17	18	SD	
SEAD-12 SEAD-12	MW 12B-01	1015920.1	743739.09	Overburden	14	09/13/10	GPG	16	YES	3	1	14	13	13	SD	
SEAD-12	MW12B-03	1015995.9	743517.06	Overburden	14.6	09/13/10	GPG	16	YES	3	1	14	13	14	SD	
SEAD-13	MW13-1	998728.88	750506.5	Overburden	12.0	09/15/10	GPG	14.9		-	1	12.3	11.3	13	SD	
SEAD-13	MW13-2	998755.38	750226.06	Overburden	16.0	09/15/10	GPG	18.4			1	16	15	16	SD	
SEAD-13	MW13-3	998884.31	750255.94	Overburden	24.0	09/15/10	GPG	23.5			1	23.5	22.5	24	SD	
SEAD-13	MW13-4	998909.81	749948.88	Overburden	8.5	09/16/10	GPG	12.5			1	9.9	8.9	9	SD	
SEAD-13	MW13-5	999035.94	749874.13	Overburden	16.0	09/16/10	GPG	18.75			1	16.15	15.15	17	SD	
SEAD-13	MW13-6	999029.5	750345.88	Overburden	10.0	09/16/10	GPG	11.3			1	9	8	9	SD	
SEAD-13	MW13-7	998815.27	749980.43	Overburden	8.0	09/15/10	GPG	10.6			1	7.8	6.8	8	SD	Mall acide wat he found
SEAD-13	MW13-8	000000 00	750000 50			00/45/40	ODO	46.0			4	440	40.0	45	OD.	Well could not be found
SEAD-13	MW13-9	998663.96	750366.52	Overhunden	4E O	09/15/10	GPG GPG	16.2			1	14.8	13.8	15 14	SD	
SEAD-13 SEAD-13	MW13-10 MW13-11	998964.4333 998857.0719	750023.7785 750060.1322	Overburden Overburden	15.0 15.0	09/15/10 09/15/10	GPG GPG	16.2 16.6			1	14.2 14.8	13.2 13.8	14 15	SD SD	
SEAD-13	MW13-12	999298	750894.75	Overburden	11.3	09/16/10	GPG	10.0			1	9.9	8.9	9	SD	
SEAD-13	MW13-13	999309.5	750986.44	overburder	15.0	55/10/10	Oi O	10.0			ı	0.0	0.0	9	30	Well could not be found
SEAD-13	MW13-14	999298	999231.21	705525.17	15.0											Well could not be found
SEAD-24	MW24-01	998948.83	740101.57	Overburden	10	09/22/10	GPG	12.1			1	9.6	8.6	9	SD	
SEAD-24	MW24-02	999255.17	739843.61	Overburden	16	09/22/10	GPG	18.4			1	16.2	15.2	16	SD	
SEAD-24	MW24-03	998999.77	739750.62	Overburden	15	09/22/10	GPG	17.3			1	14.9	13.9	15	SD	
SEAD-25	MW25-04D	998023.3883	750983.1189	Bedrock	23.8	09/22/10	GIP	2.2	YES	3	0	23.1	23.1	25	BMc	
SEAD-25	MW25-05D	998081.3786	750938.3683	Bedrock	21.7		GIP	2	YES	3						Decomissioned during SEAD-25 Remedial Action
SEAD-25	MW25-07D	998279.0181	751016.2292	Bedrock	30.2	09/22/10			YES	3	0	28.2	28.2	30	BMc	
SEAD-25	MW25-11	997865.7588	750955.8786	Overburden		09/22/10	GPG	7.3			0	5.5	5.5	10	BMc	
SEAD-25	MW25-12D	997867.0397	750966.7103	Bedrock	24.2	09/22/10	GIP	1.8	YES	3	0	23.3	23.3	20	BMc	
SEAD-25	MW25-14D	997867.0994	750875.7165	Bedrock	23.2	09/22/10	GIP	7	YES	3	0	22.8	22.8	25	BMc	
SEAD-25	MW25-16D	997975.0098	750771.8704	Bedrock	25	09/22/10	GIP	3	YES	3	U	25	25	25	BMc	

Table 1-1
Groundwater Wells Decommissioned
Seneca Army Depot Activity

														Quantity		
					Well Depth		Selected				Top of	Bottom of	f Length	of Grout		
AOC				Monitoring	from Ground	Date	Decommissioning	Casing	<b>Bollards</b>	Number of	Grout	Grout	of Grout	Used	Field	
Location	Well ID	Northing	Easting	Well Type	Surface (ft bgs)	Abandoned	Method (1)	Pulled	Removed	<b>Bollards</b>	(ft bgs) (2)	(ft bgs)	(ft)	(gallons)	Geologist	Comments
SEAD-26	MW26-01	992228.7434	751589.2004	Bedrock	6	09/23/10	GPG	8.5	YES	3	1	6.5	5.5	4	SD	
SEAD-26	MW26-02	992769.4315	751106.8867	Overburden	14	09/23/10	GPG	16.5	YES	3	1	14.1	13.1	15	SD	
SEAD-26	MW26-03	992215.6709	751115.0404	Overburden/Bedrock	14	09/23/10	GPG	16.4	YES	3	1	14	13	14	SD	
SEAD-26	MW26-04	991690.1854	751127.6237	Overburden/Bedrock	11.5	09/23/10	GPG	13	YES	3	1	11	10	11	SD	
SEAD-26	MW26-05	992272.1148	751168.1856	Overburden/Bedrock	15	09/23/10	GPG	17.1	YES	3	1	15.4	14.4	16	SD	
SEAD-26	MW26-06	992234.8911	751251.0741	Overburden/Bedrock	15	09/23/10	GPG	17	YES	3	1	17	16	16	SD	
SEAD-26	MW26-07	992178.7365	751195.6651	Overburden/Bedrock	18	09/23/10	GPG	20	YES	3	1	18	17	17	SD	
SEAD-26	MW26-08	991756.145	751204.2657	Overburden/Bedrock	11.5	09/23/10	GPG	13.5	YES	3	1	13.5	12.5	12	SD	
SEAD-26	MW26-09	991724.1357	751224.9496	Overburden/Bedrock	12.2	00/00/40	000	40.5	YES	3	_	40	4.4	40	0.0	Decomissioned during SEAD-26 Remedial Action
SEAD-26	MW26-10	991653.8949	751205.9184	Overburden/Bedrock	12	09/23/10	GPG	13.5	YES	3	1	12	11	12	SD	
SEAD-26	MW26-11	992691.2201	751235.2629	Overburden/Bedrock	15	09/23/10	GPG	16.4	YES	3	1	15.1	14.1	15	SD	
SEAD-27	MW-1	997165.98	749991.67		15 15	09/24/10	GPG	17.2			1	14.9	13.9	18	SD	
SEAD-27	MW-2	997149.31	749926.33	<u> </u>	15	09/24/10	GPG	17.4			1	14.8	13.8	18	SD	
SEAD-48	MW48-1	988650 (approx)		Overburden	8	09/21/10	GPG	9.9			1	7.5	6.5	/	SD	
SEAD-48	MW48-2	` ' ' '	744685 (approx)	Overburden	7.6	09/23/10	GPG GPG	10 10			1	δ 7.0	/ 6.0	ŏ 7	SD	
SEAD-48	MW48-3		746770 (approx)	Overburden	8	09/21/10		10	VEC	2	1	7.3	6.3	/ NIA	SD	
SEAD-48 SEAD-48	MW48-4 MW48-5	` ' ' '	747355 (approx) 748030 (approx)	Overburden Overburden	8 13	09/21/10 09/21/10	GPG GPG	11 15	YES YES	3 3	0.2 0.5	7.3 13	7.1 12.5	NA NA	BMc BMc	
SEAD-48	MW48-6	988750 (approx)	` ' ' '	Overburden	8	09/21/10	GPG	11	YES	3	0.5	Ω	7.8	NA	BMc	
SEAD-48	MW48-7		747045 (approx)	Overburden	9.5	09/21/10	GPG/GIP	11.4	TES	3	1	03	8.3	O O	SD	Screen filled with grout separated from riser when casing pulled.
SEAD-48	MW48-8	988020 (approx)		Overburden	9.5 6	09/22/10	GPG	8			1	9.5 6	5.5	5	SD	Screen filled with grout separated from riser when casing pulled.
SEAD-59	MW59-1	998909.81	749948.88	Overburden	9.2	01/25/11	GPG	9.3	YES	3	0	7.3	7.3	NA	SD	
SEAD-59	MW59-2	999035.94	749874.13	Overburden	11.4	09/24/10	GPG	13.2	YES	3	1	13.2	12.2	12	SD	
SEAD-59	MW59-3	999029.5	750345.88	Overburden	8.8	03/24/10	01 0	10.2	YES	3	'	10.2	12.2	12	OD	Removed during SEAD-59 Time-Critical Removal Action
SEAD-59	MW59-4	998815.27	749980.43	Overburden	15	09/23/10	GPG	8.6	YES	3	1	7.1	6.1	8	SD	Tromoved during SEAD SO Time Shiladi Premoval Action
SEAD-59	MW59-5	000010.27	7-10000.40		15	00/20/10	OI O	0.0	YES	3	·		0.1	O	OB	No Record could be found.
SEAD-59	MW59-6	998663.96	750366.52		15				YES	3						Decomissioned during SEAD-5 Remedial Action
SEAD-59	MW59-7	998964.4333	750023.7785		15	09/24/10	GPG	14.7	YES	3	1	12	11	12	SD	200000.onou daining 022 o rioinioalai / totion
SEAD-59	MW59-8	998857.0719	750060.1322		15	09/24/10	GPG	13.4	YES	3	1	11.1	10.1	13	SD	
SEAD-63	MW63-1	1013123.9	741608.56	Overburden	8.7	09/14/10	GPG	10	YES	3	1	8.8	7.8	9	SD	
SEAD-63	MW63-2	1012980.3	741136.13	Overburden	8.1	09/14/10	GPG	9.6	YES	3	1	7.5	6.5	8	SD	
SEAD-63	MW63-3	1013182.1	741130.19	Overburden	8.1	09/14/10	GPG	9.5	YES	3	1	9.5	8.5	10	SD	
SEAD-67	MW67-1	1002498.4	748911.69	Overburden	11.3	09/16/10	GPG	13	YES	3	1	11.5	10.5	12	SD	
SEAD-67	MW67-2	1002256.7	748953.25	Overburden	11.8	09/16/10	GPG	12.9	YES	3	1	12	11	12	SD	
SEAD-67	MW67-3	1002492.1	748794.94	Overburden	11.3	09/16/10	GPG	13	YES	3	1	11.5	10.5	12	SD	
SEAD-70	MW70-1	1007329.9	740889.13	Overburden	10.4	09/16/10	GPG	11.8	YES	3	1	10.5	9.5	11	SD	
SEAD-70	MW70-2	1007329.7	740555.63	Overburden	11.6				YES	3						Well could not be located.
SEAD-70	MW70-3	1007173.3	740552.25	Overburden	9.4	09/16/10			YES	3	0	4	4		SD	Broken pad found; dug down 4 feet no well encountered, Backgroted to surface.
SEAD-70	MW70-4	1007055.1	740563.5	Overburden	10.1	09/16/10	GPG	11.4	YES	3	1	10	9	10	SD	
SEAD-71	MW71-1	999298	750894.75	Overburden	9.4	09/24/10	GIP	0	YES	3	0	9.3	9	6	SD	
SEAD-71	MW71-2	999309.5	750986.44	Overburden	6.6	09/24/10	GIP	0	YES	3	0	6.6	6.6	NA	SD	
SEAD-71	MW71-3	999229.81	750869	Overburden	6.4	01/25/11	GPG	7.6	YES	3	0	6.1	6.1	NA	SD	
SEAD-71	MW71-4	999231.2137	750525.1669	Overburden	18.7	09/24/10	GPG/GIP	15.9	YES	3	1	18.7	17.7	15	SD	When casing pulled, five feet of grout filled screen broke off.
SEAD-119B	MW119-1	999187.45	733603.32	Overburden	15	01/27/11	GPG	21.5			0	19	19	NA	SD	
SEAD-119B	MW119-2	999235.09	733305.07	Overburden	15	01/27/11	GPG	21.25			0	19	19	NA	SD	
SEAD-119B	MW119-3	999012.97	733407.82	Overburden	15	01/27/11	GPG	16.1			0	14.1	14.1	NA	SD	
SEAD-121C	MW121C-3	997507.91	749999.17	Overburden	15	09/23/10	GPG	10.1	· · · · · · · · · · · · · · · · · · ·		1	9.1	8.1	9	SD	
SEAD-121C	MW121C-4	996866.95	749922.29	Overburden	15	09/22/10	GPG	9.64			1	8.2	7.2	8	SD	
SEAD-121C	MW121C-5	996896.87	749448.53	Overburden	15	09/22/10	GPG	10.2			1	8.7	7.7	9	SD	
SEAD-121C	MW121C-6	997040.99	749613.64	Overburden	15	09/22/10	GPG	9.8			1	9.8	8.8	9	SD	
SEAD-122B	MW-1	986840.19	739802.9	Overburden	16.5	09/24/10	GPG/GIP	10			1	16.4	15.4	16	SD	Eight feet of screen filled with grout broke off and was left in place.
SEAD-122B	MW-2	986779.02	739393.06	Overburden	16	09/24/10	GPG	17.9			1	16	15	8	SD	
SEAD-122B	MW-3	987014.26	739409.59	Overburden	14.5	09/24/10	GPG	16.4			1	14.4	13.4	8	SD	

## Notes

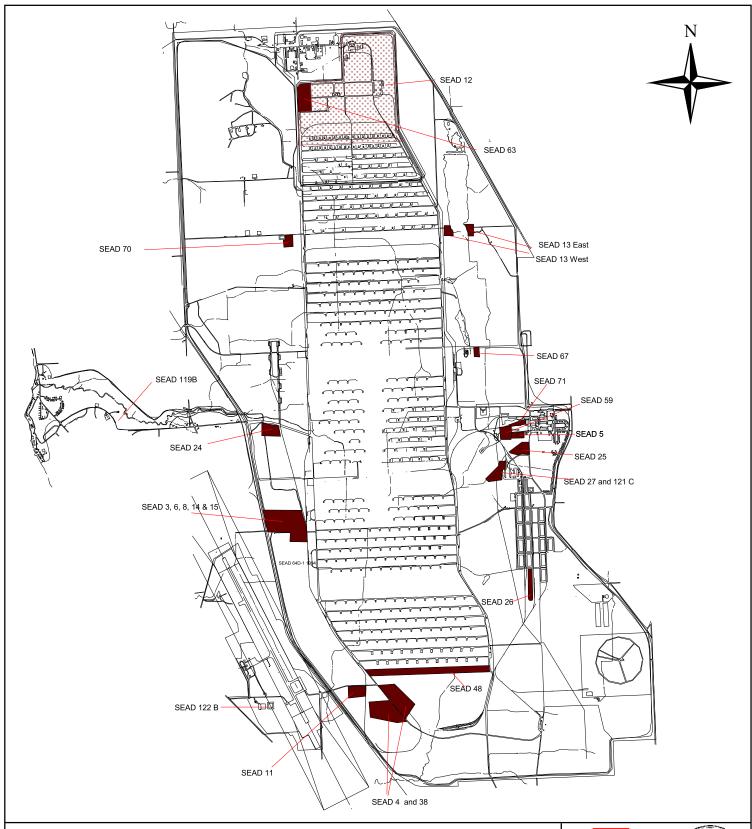
NA = Not avaiable.

<sup>1 -</sup> GIP = Grout in Plance. GPG = Grout, pull, grout. GPG/GIP = Grout, pull, a portion of well broke off during pull and was left in hole, grouted in place.

<sup>2 -</sup> ft

### **FIGURES**

Figure 1	Location of SWMUs where Monitoring Wells were Decommissioned
Figure 2	Wells Decommissioned, Ash Landfill Operable Unit, SEAD 3, 6, 8, 14, & 15
Figure 3	Wells Decommissioned, SEAD-4 and 38
Figure 4	Wells Decommissioned, SEAD-5
Figure 5	Wells Decommissioned, SEAD-11
Figure 6a	Wells Decommissioned, SEAD-12
Figure 6b	Wells Decommissioned, SEAD-12
Figure 7	Wells Decommissioned, SEAD-13
Figure 8	Wells Decommissioned, SEAD-24
Figure 9	Wells Decommissioned, SEAD-25
Figure 10	Wells Decommissioned, SEAD-26
Figure 11	Wells Decommissioned, SEAD-27
Figure 12	Wells Decommissioned, SEAD-48
Figure 13	Wells Decommissioned, SEAD-59 and 71
Figure 14	Wells Decommissioned, SEAD-63
Figure 15	Wells Decommissioned, SEAD-67
Figure 16	Wells Decommissioned, SEAD-70
Figure 17	Wells Decommissioned, SEAD-119B
Figure 18	Wells Decommissioned, SEAD-121C
Figure 19	Wells Decommissioned, SEAD-122B







Location of SEAD-12 where wells were decommissioned.



Locations where monitoring wells were deconmissioned.

o:\seneca\well abandonment\well abandonment.apr





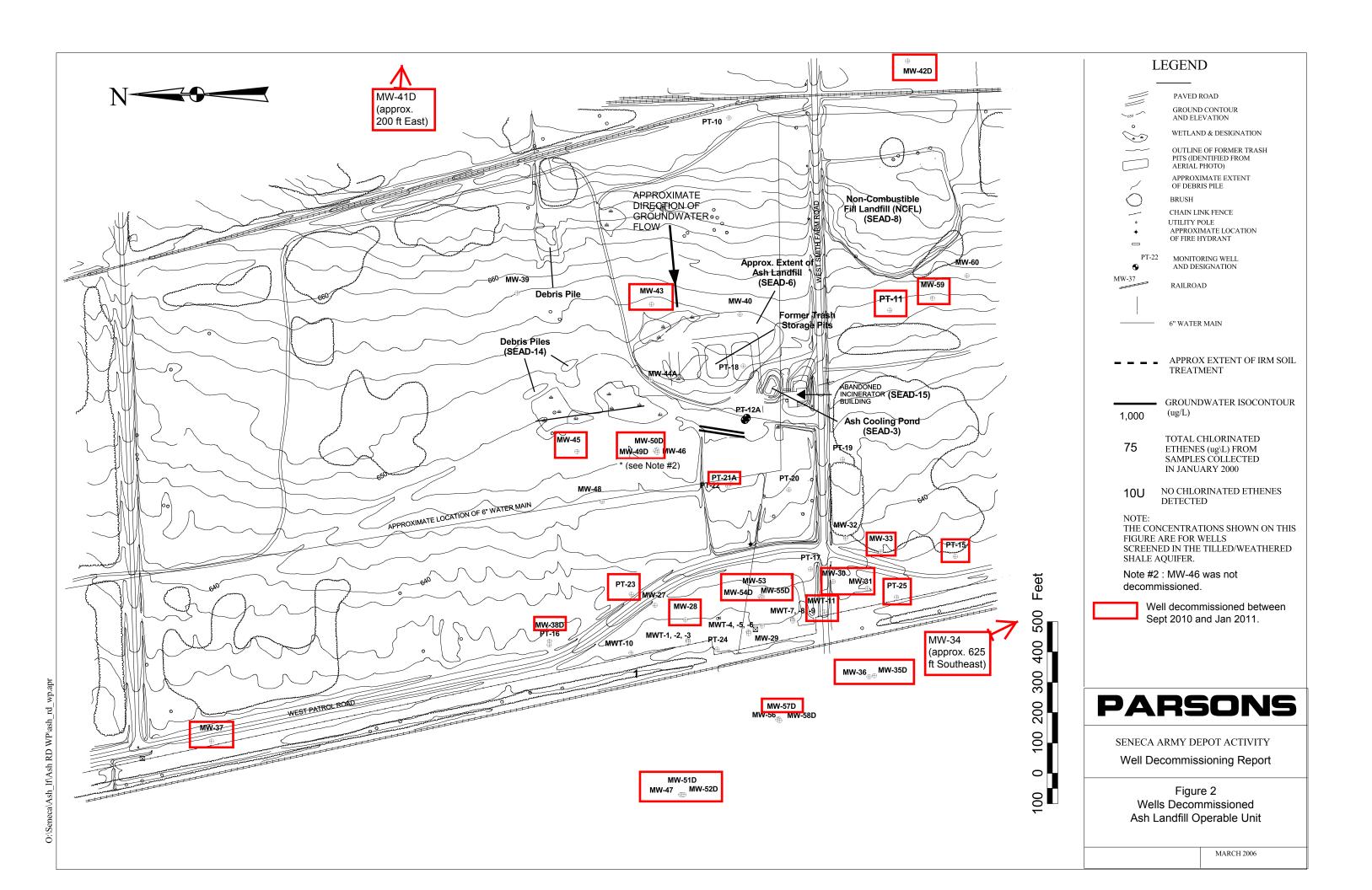
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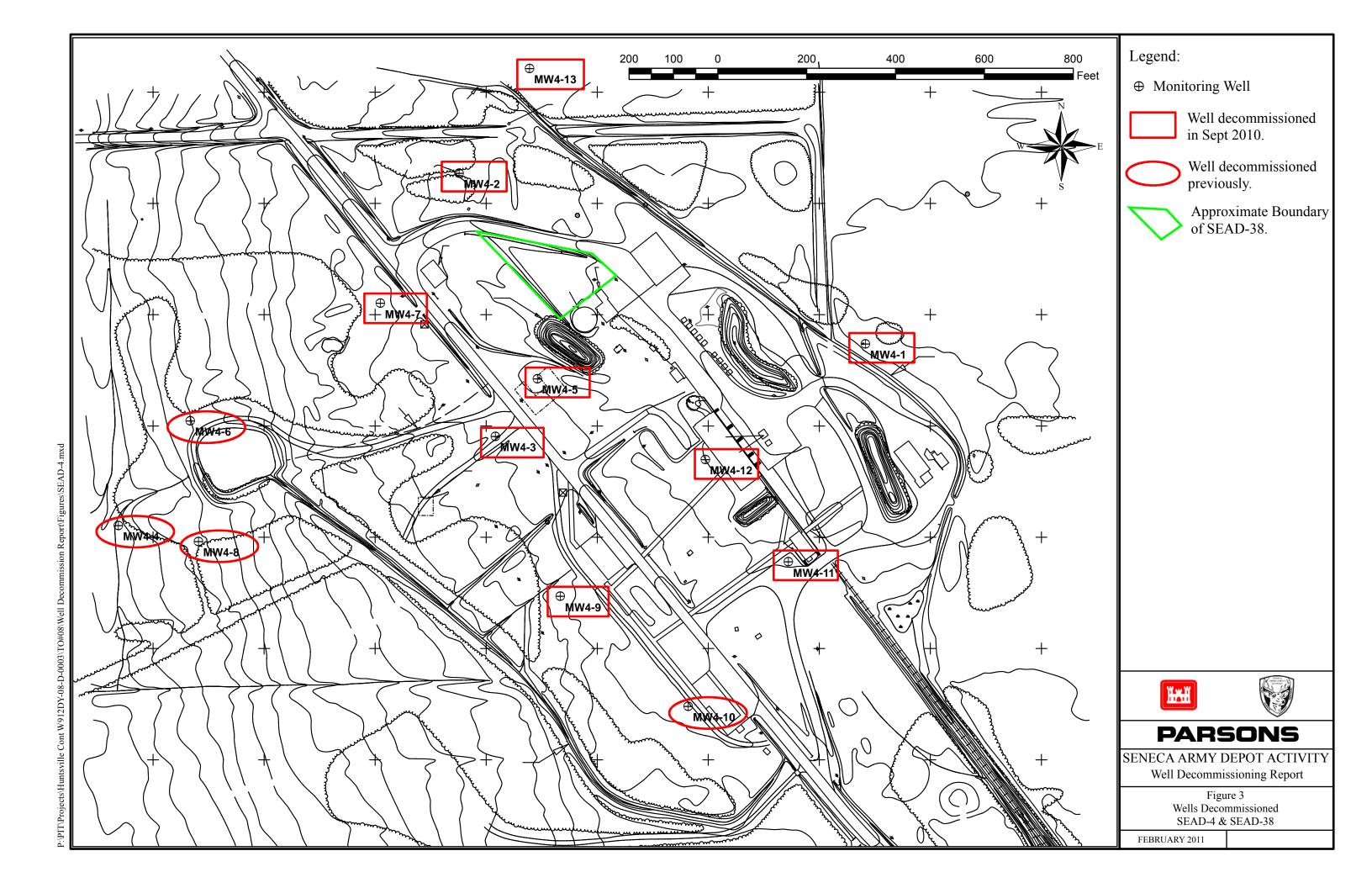
SENECA ARMY DEPOT ACTIVITY Well Decommissioning Report

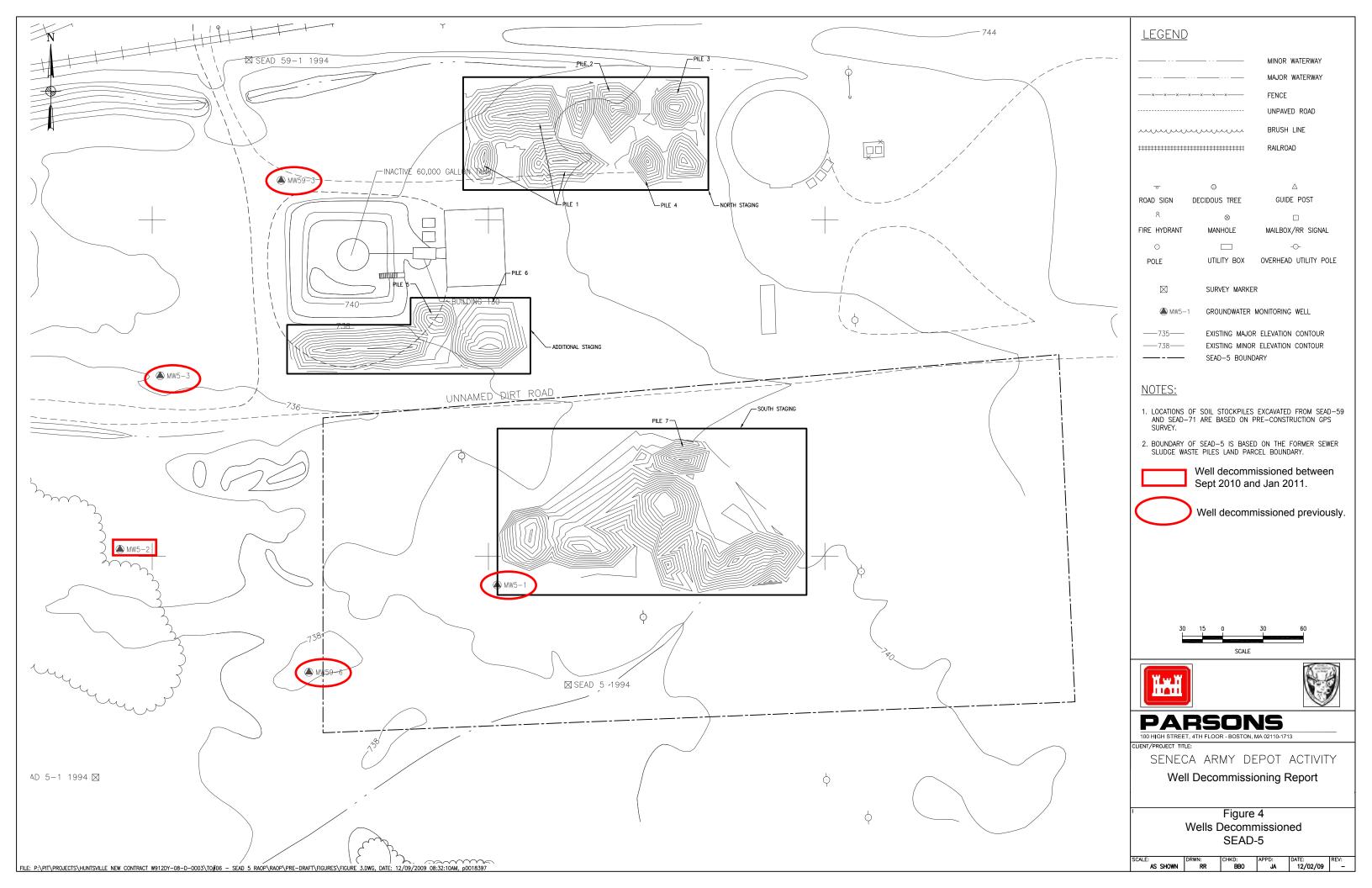
FIGURE 1 Location of SWMUs

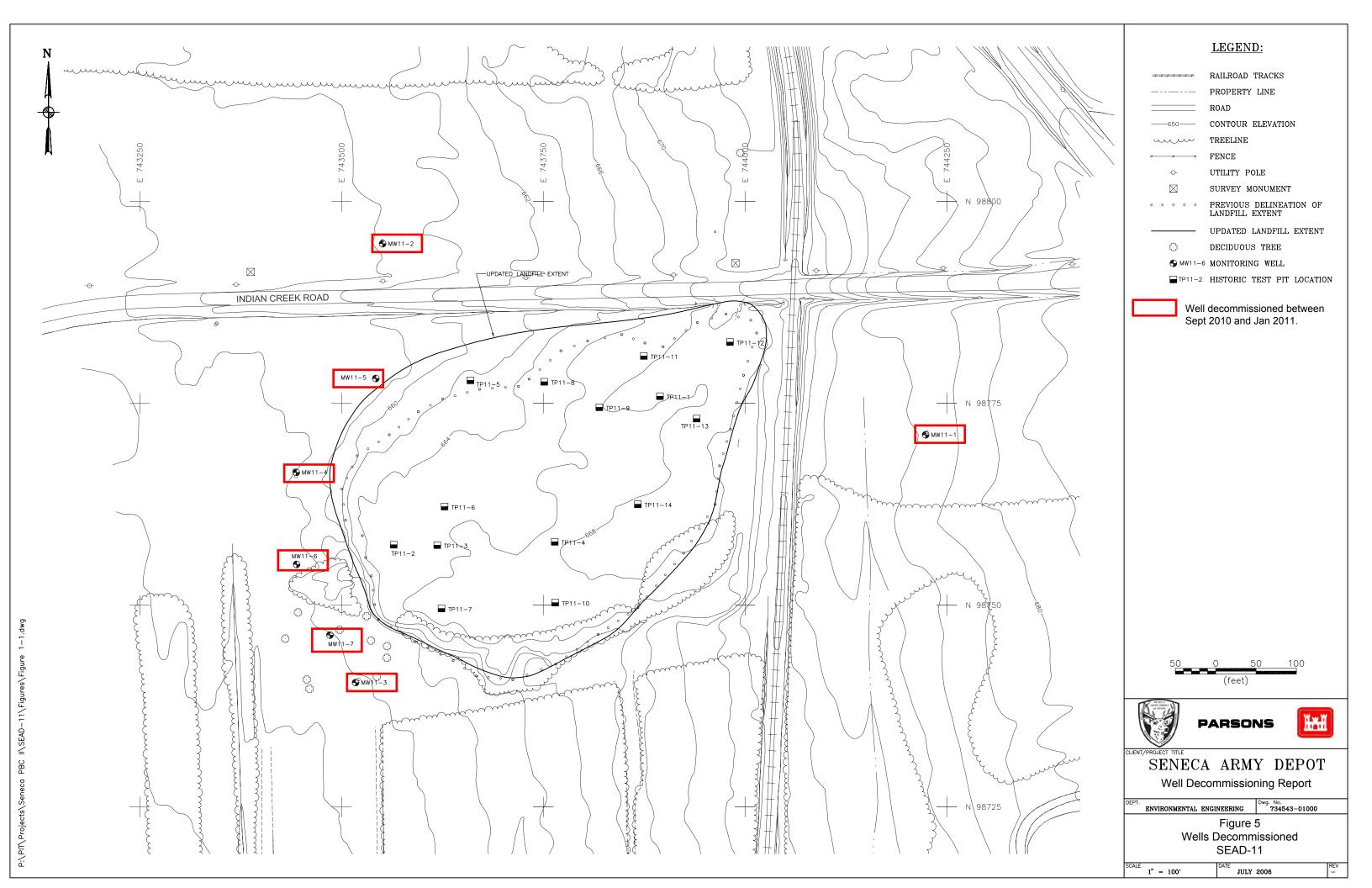
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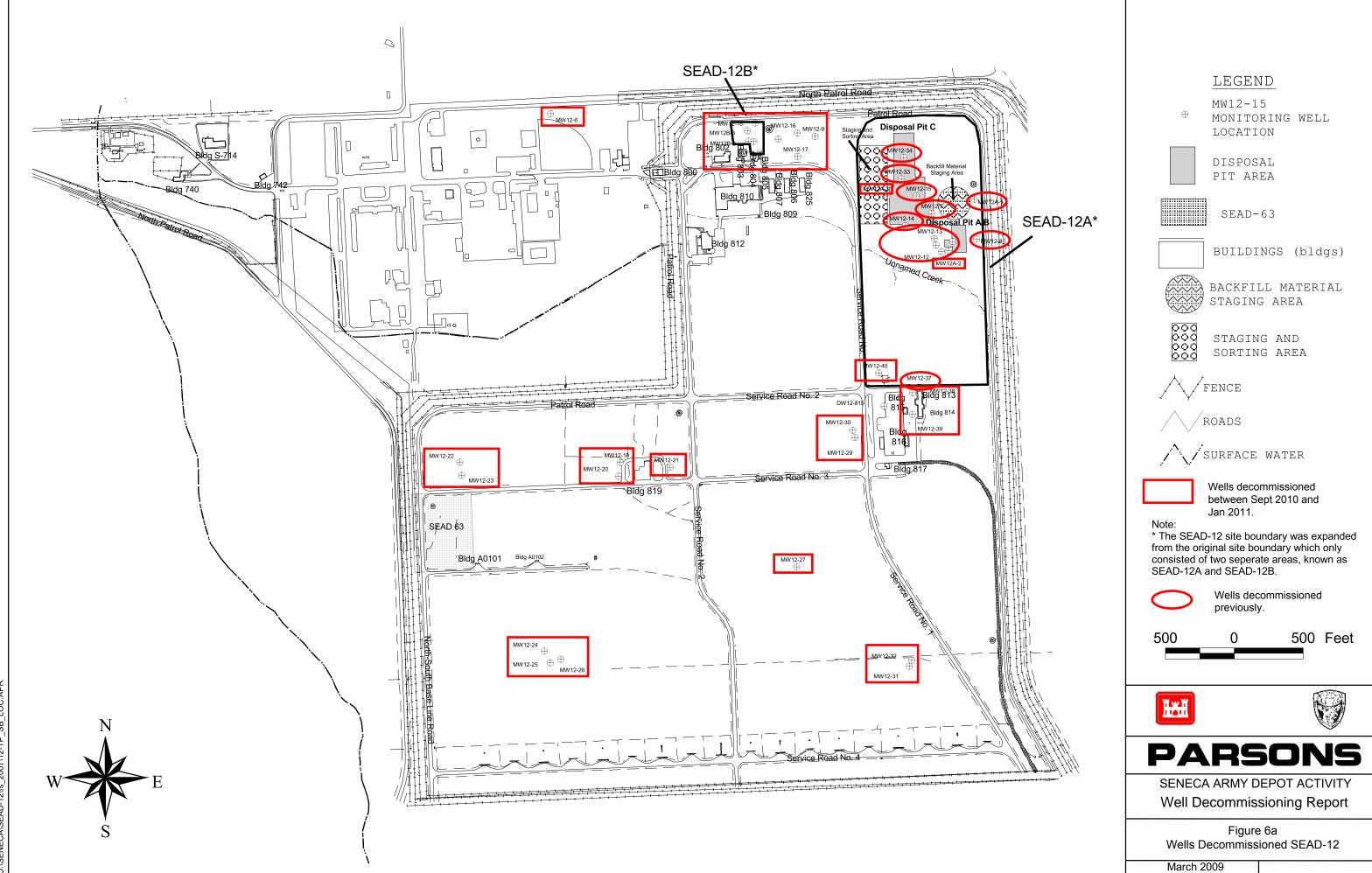
December 2010



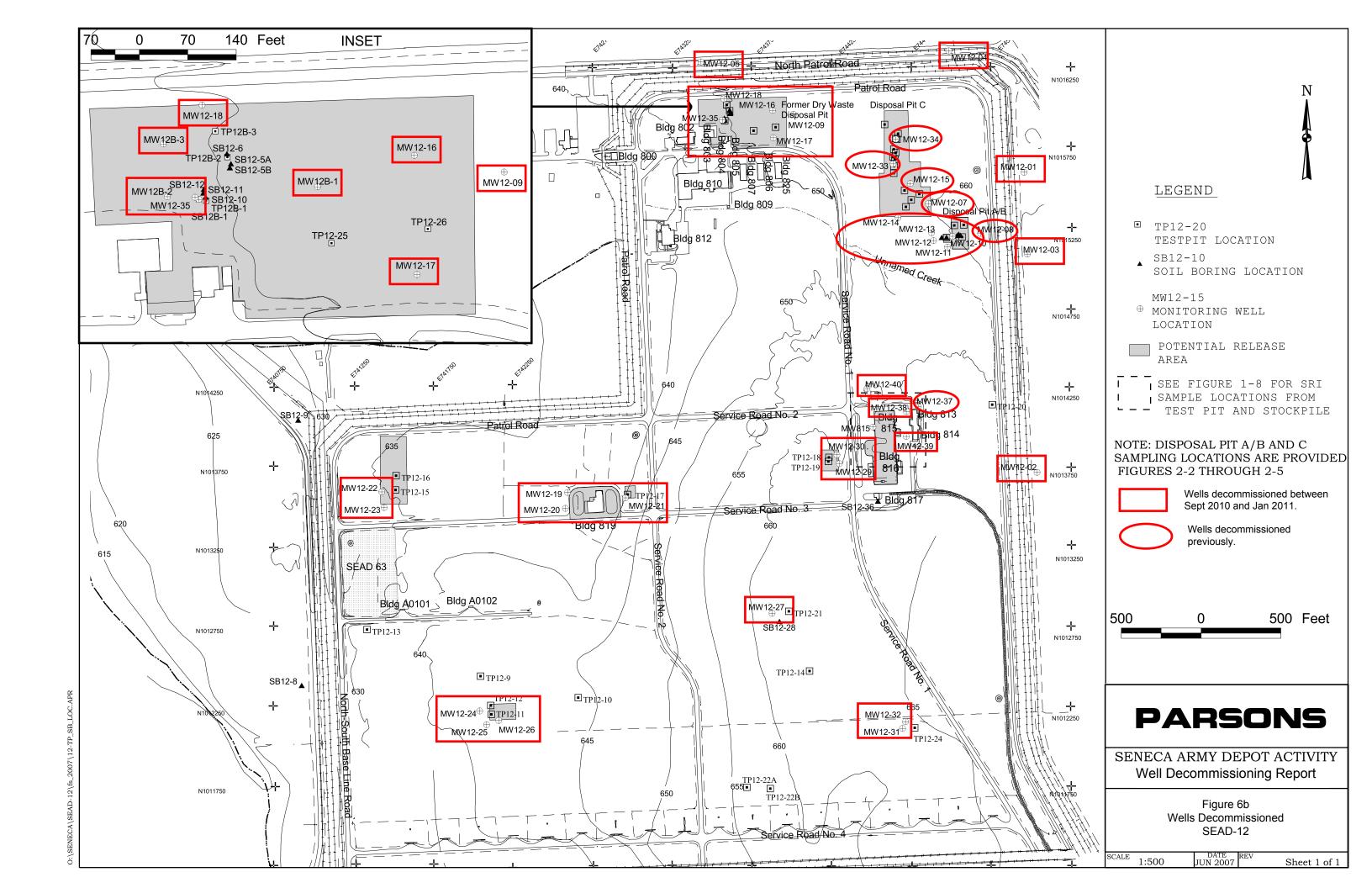


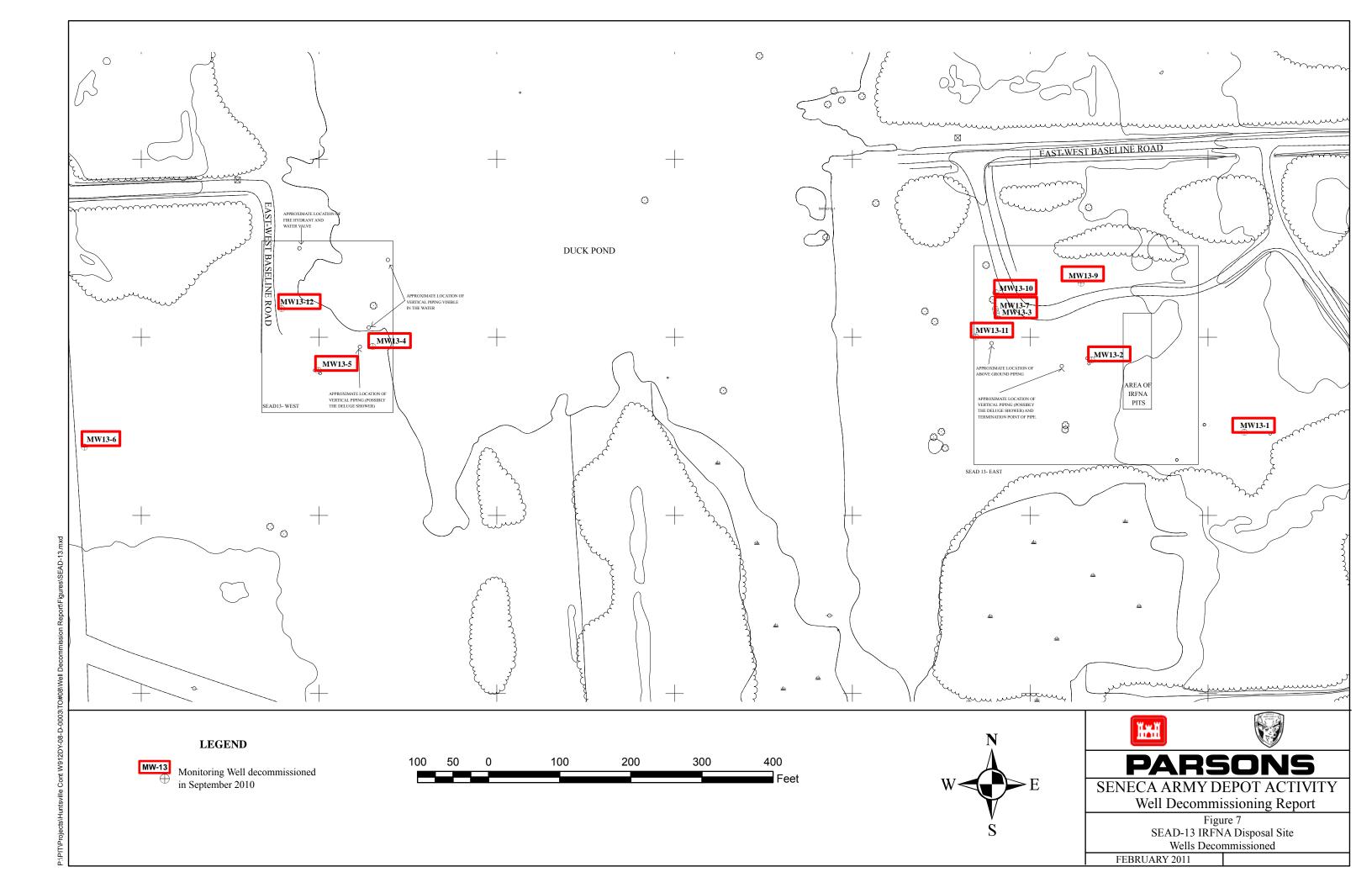


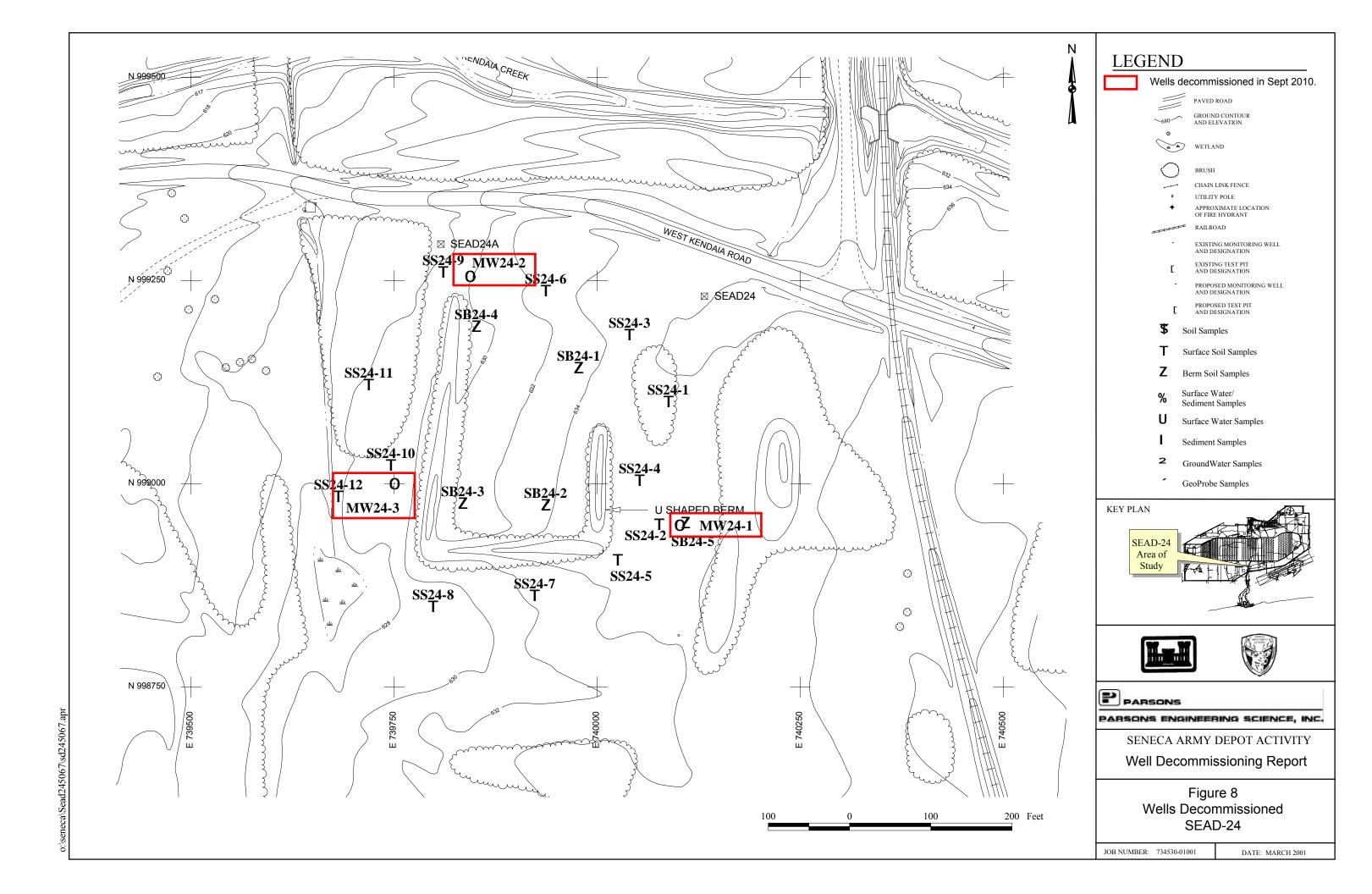


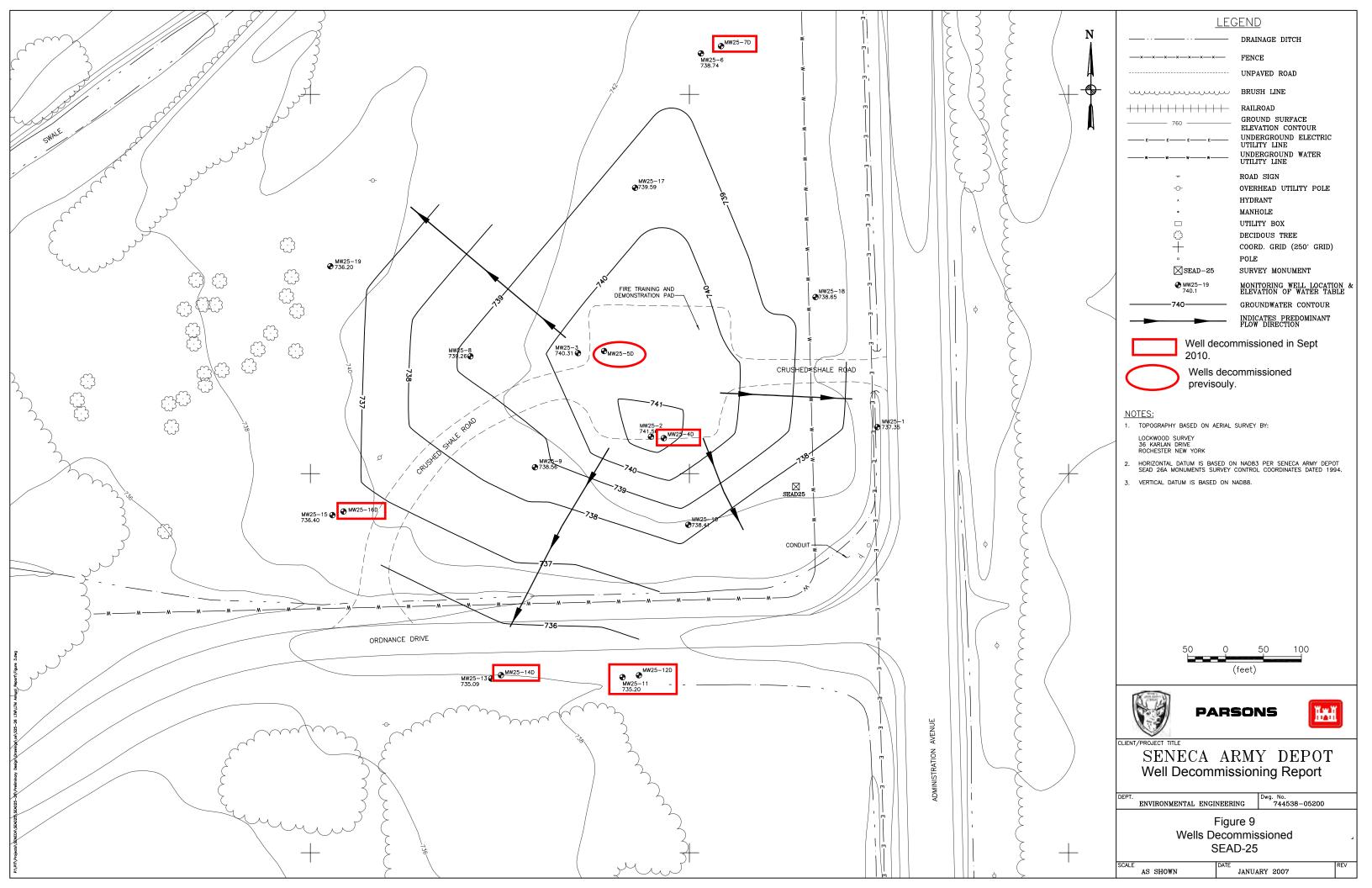


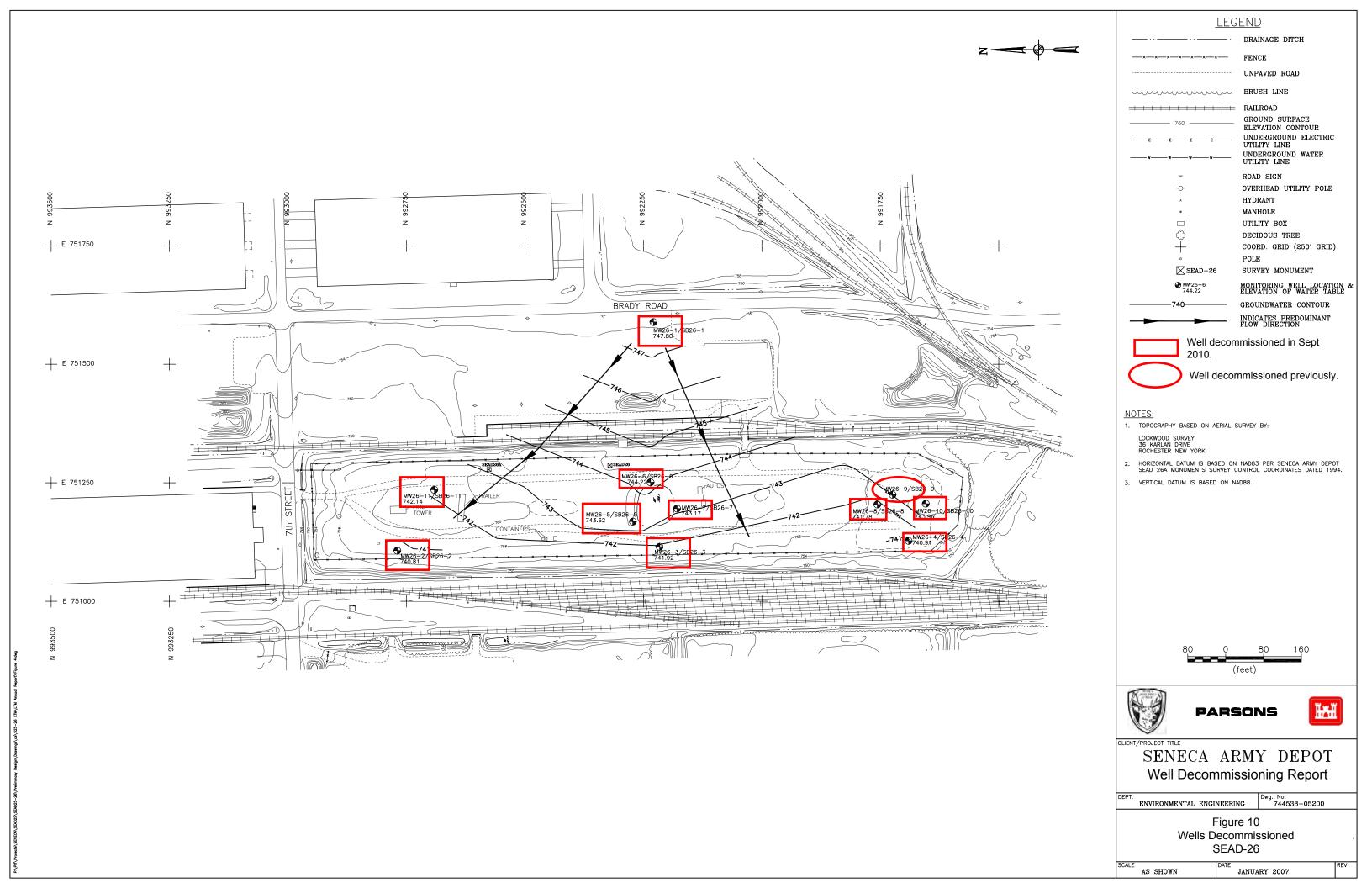
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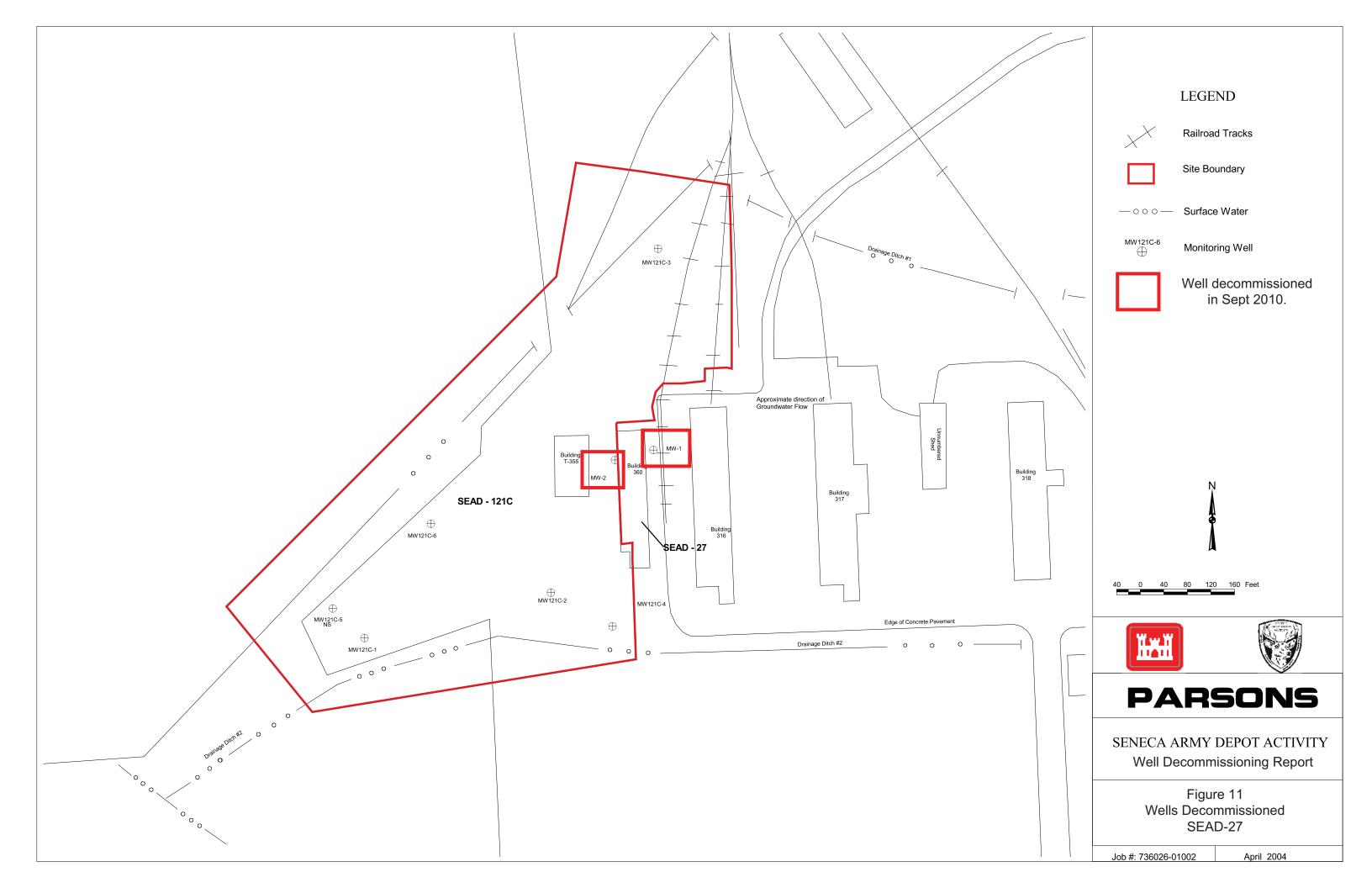


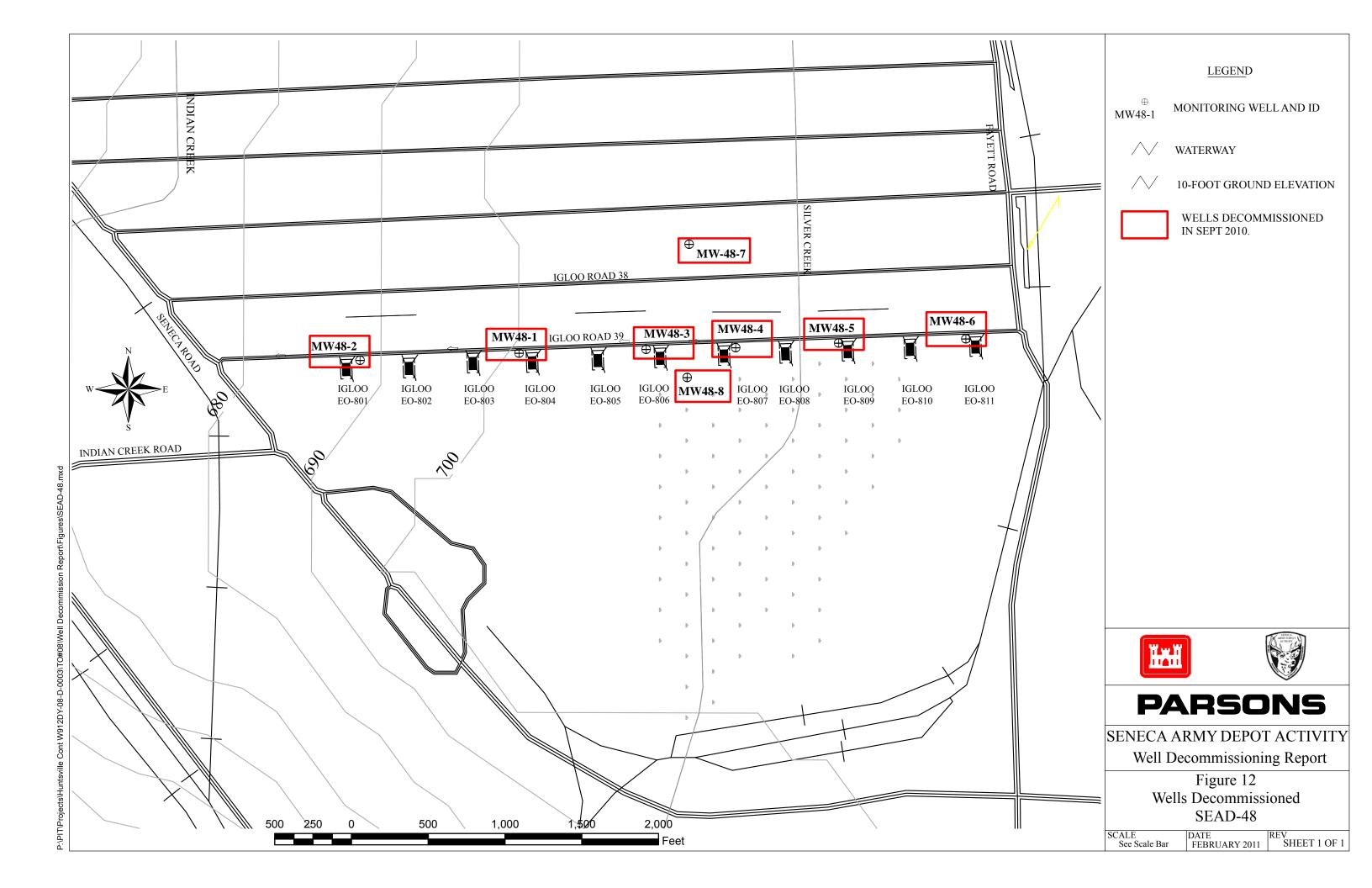


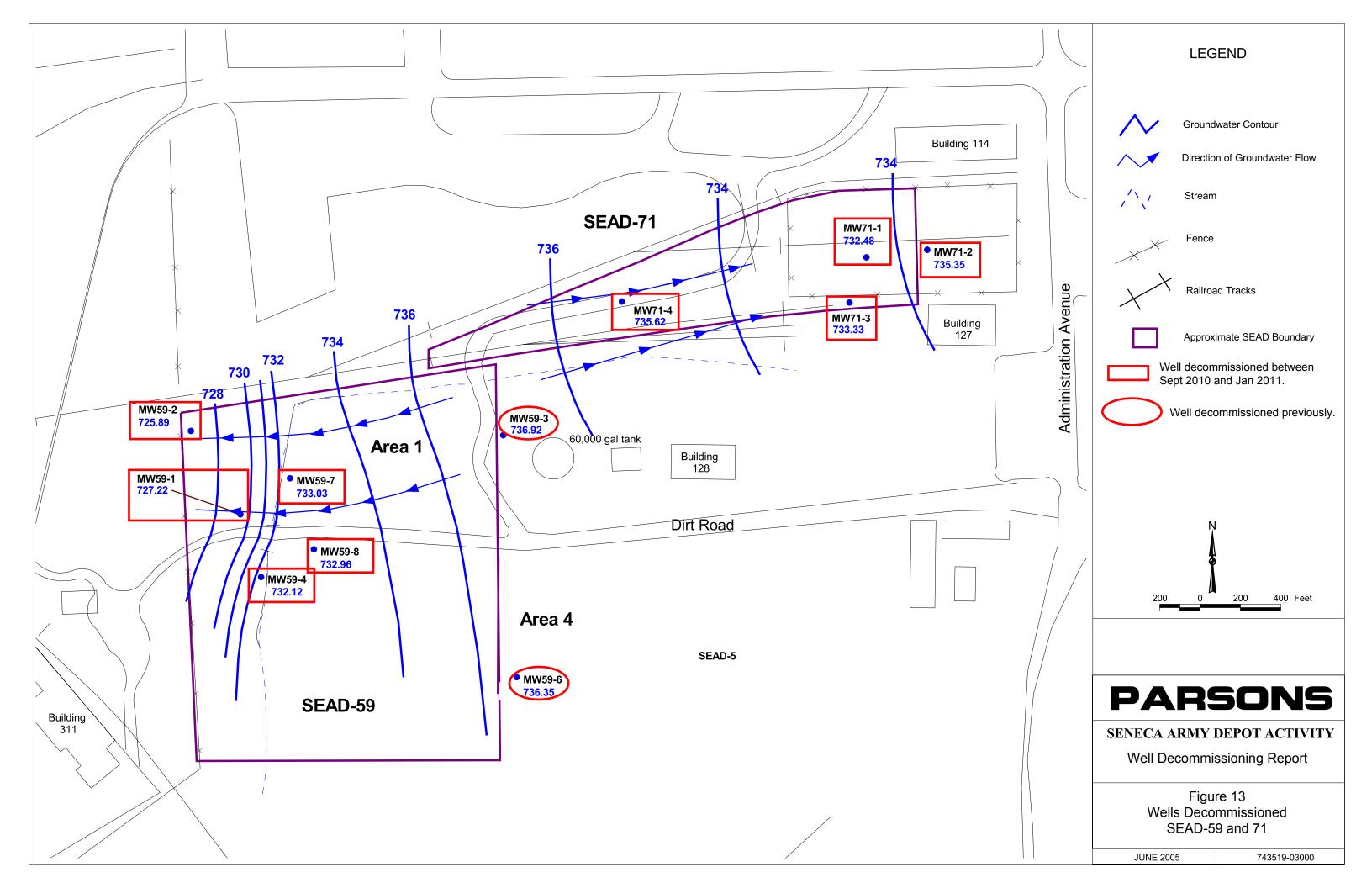


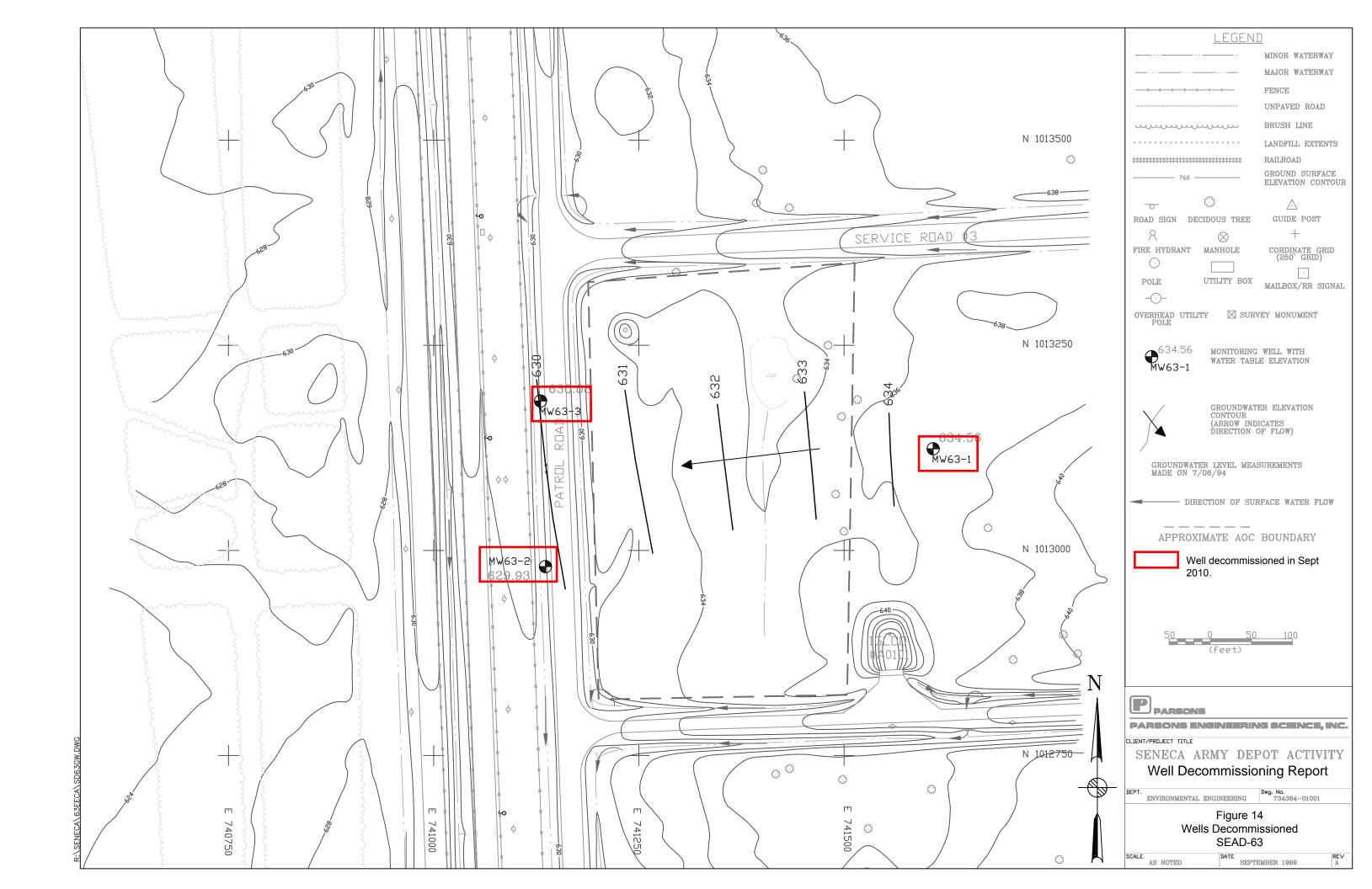


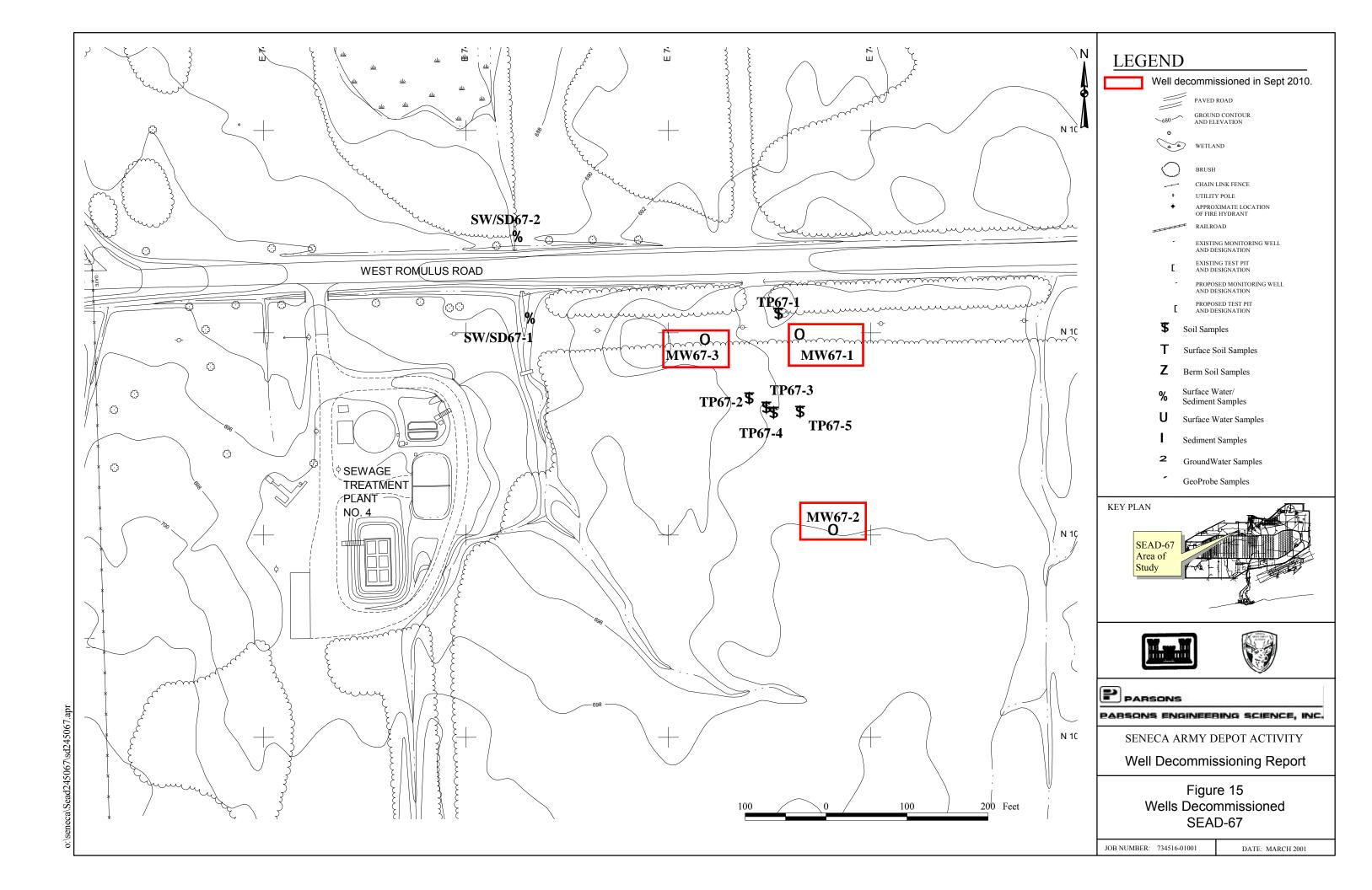


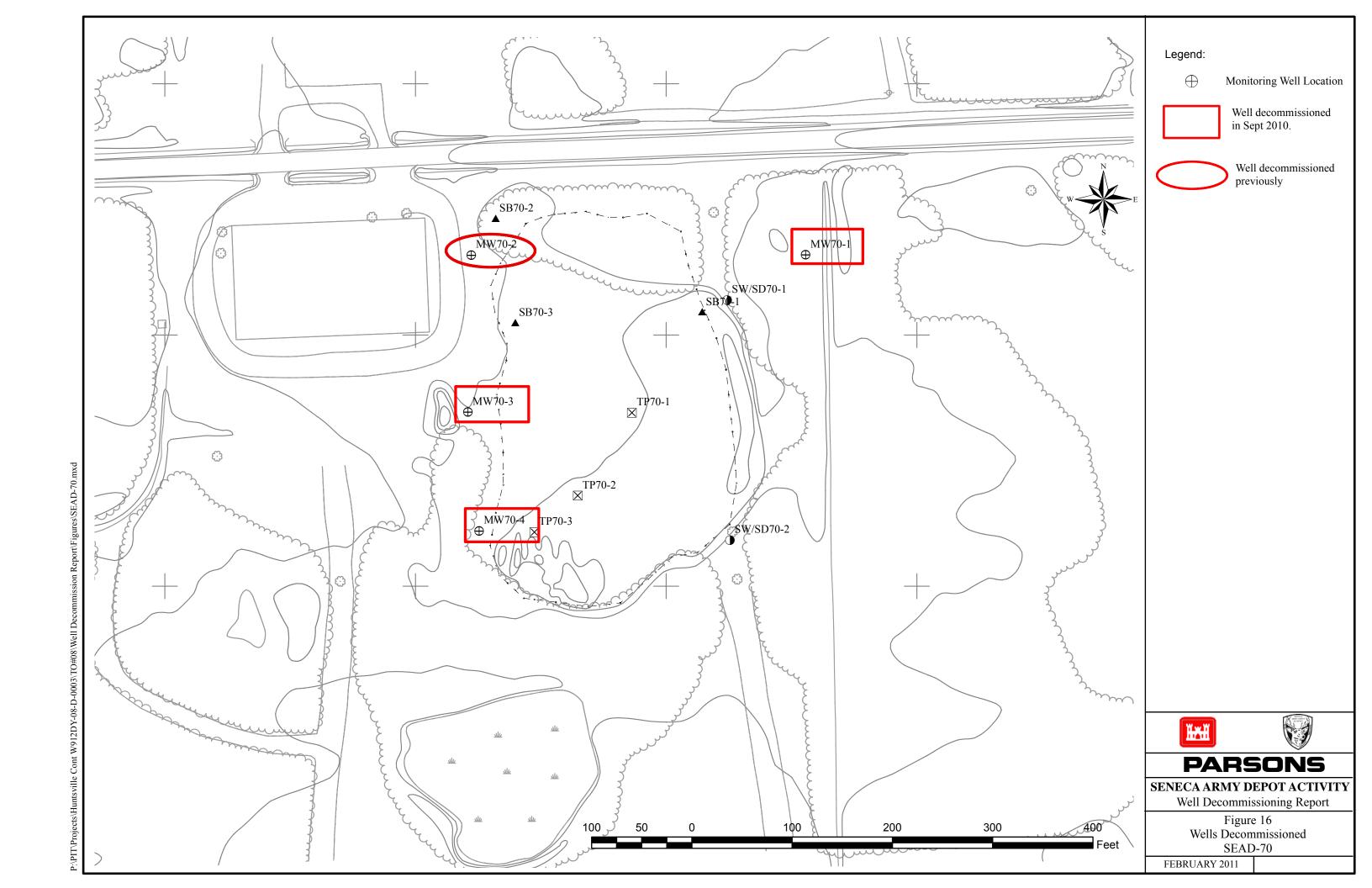




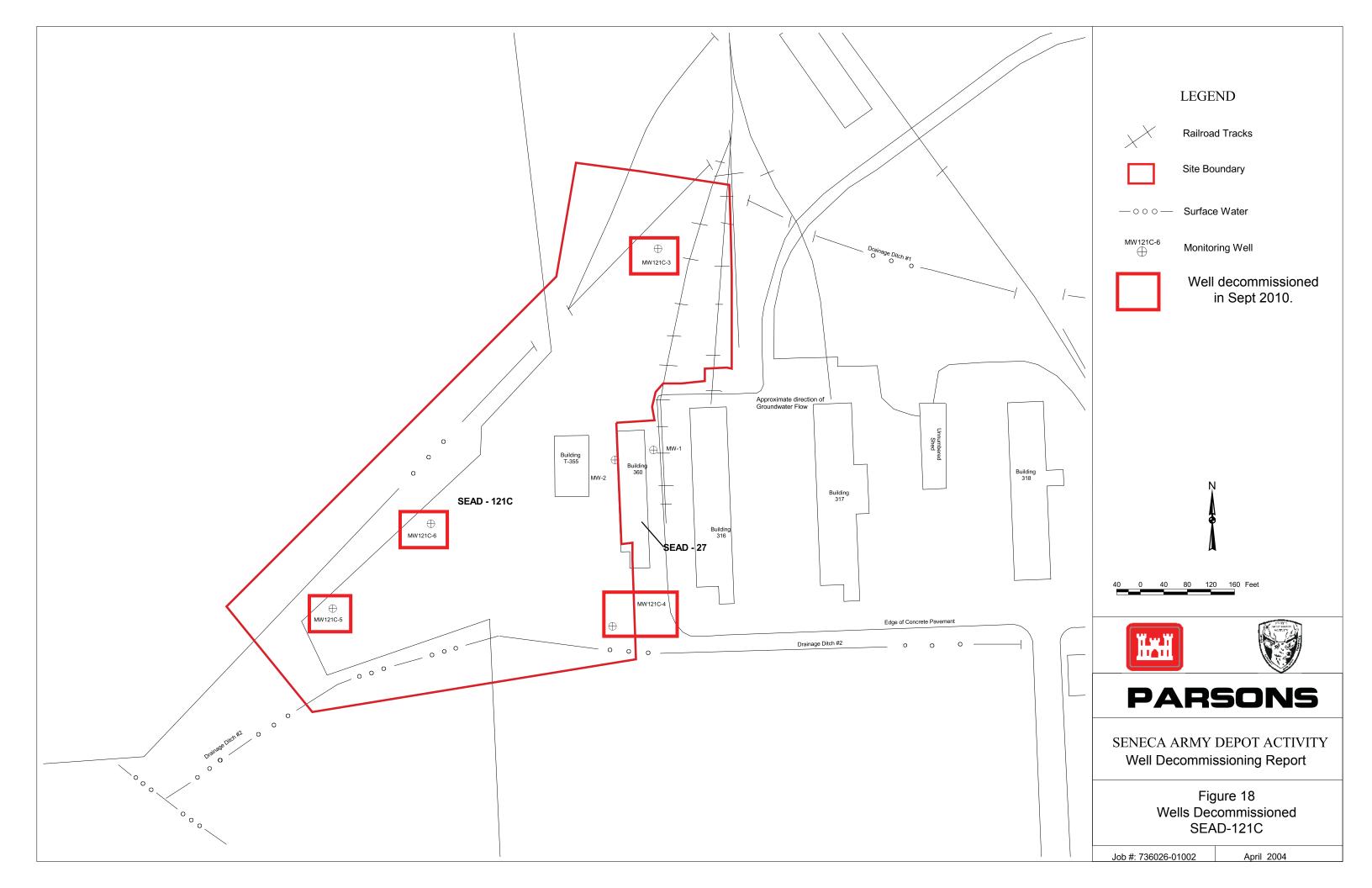


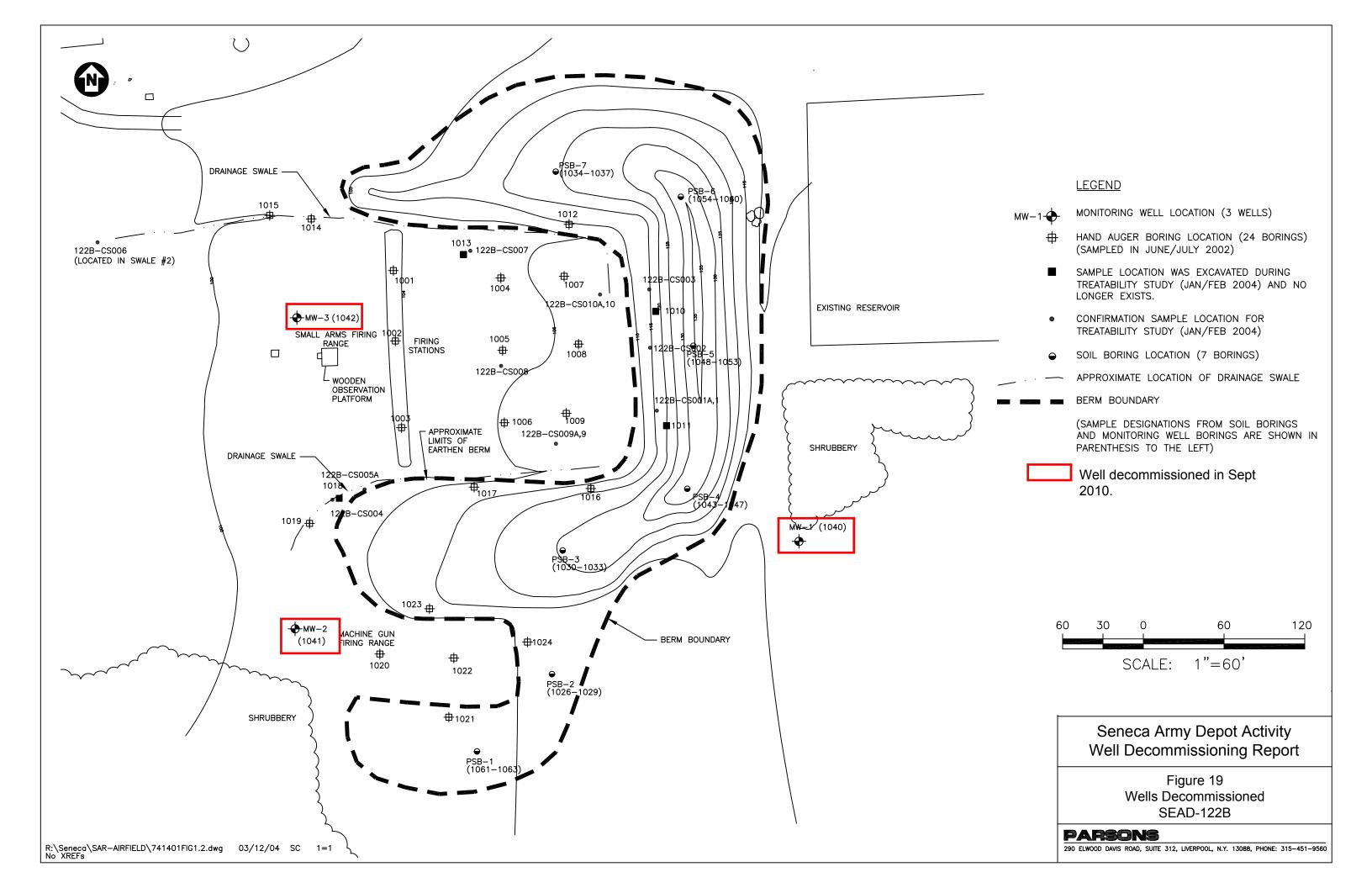












### **APPENDICES**

Appendix A Boring and Well Completion Logs

Appendix B Notice of Intent to Proceed

Appendix C Well Decommission Record

# APPENDIX A BORING AND WELL COMPLETION LOGS

PROJECT 38-26-0313 88

DATE 13-21 Oct

WELL NUMBER MW-18 MW-19 MW-20 MW-22 1. Height of Monitoring Well 30" 30" 30" 30" 30" Casing above ground level 2. Total Depth of Well below 8' 10" ground level 9 9 9 17' 5" 3. Depth to Top of Well Screen below ground level 4 3' 10" 4 4 12' 5" 4. Well Screen Length 5 5 5 5. Well Screen Slot Size 0.010 0.010 0.010 0.010 0.010 6. Well Diameter 2 in ID 7. Monitoring Well Casing Schd 40 Schd 40 Schd 40 Schd 40 Schd 40 Material PVC PVC PVC PVC PVC 8. Monitoring Well Screen Schd 40 Schd 40 Schd 40 Schd 40 Schd 40 Material PVC PVC PVC PVC PVC 9. Grout Thickness below 3' 10" 4 3' 11' 3 10' 6" ground level 10.Depth to Top of Bentonite Seal below ground level All wells grouted to surface with bencomite 11. Bentonite Seal Thickness 3' 10" 3' 11" 10' 6" 12. Depth to Top of Sand Pack 3' 10" 3' 11" 10' 6" 13. Depth to Static Water Level from top of 5' 11" 5' 51/3" 61 811 6' 6" 18' 85" monitoring well casing Date Measured 19 Oct 87 | 19 Oct 87 | 19 Oct 87 | 19 Oct 87 | 19 Oct 87 14. Depth to Static Water from ground level 654.6 644.0 644.1 645.1 645.8 Date Measured 19 Oct 87 15. Elevation at ground 654.6 644.0 644.1 645.1 645.8 level 16. Elevation - Top of monitoring well casing 17. Ground-water elevation 651.1 641.0 637.4 641.1 629.2 Date Measured 19 Oct 87 Comments

. .

PROJECT 38-26-0313-88 DATE 13-21 Oct 87

	7		7	T	<del></del>
WELL NUMBER	MW-23	MW-24	MW-25	MW-26	
1. Height of Monitoring Well Casing above ground level	30"	30"	30"	30"	
2. Total Depth of Well below ground level	9'	9'	9'	91	
3. Depth to Top of Well Screen below ground level	4'	4'	4'	6'	
4. Well Screen Length	5'	5'	5'	5'	
5. Well Screen Slot Size	0.010"	0.010"	0.010"	0.010"	
6. Well Diameter	2 in ID	2 in ID	2 in ID	2 in ID	N 35
7. Monitoring Well Casing Material	Schd 40	Schd 40 PVC	Schd 40 PVC	Schd 40	
8. Monitoring Well Screen Material	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	
9. Grout Thickness below ground level	4	3	4	4' 10"	
10.Depth to Top of Bentonite Seal below ground level	All well	s grouted	to surface	with bento	nite .
ll.Bentonite Seal Thickness	4	3	4	4' 10"	
12.Depth to Top of Sand Pack	4	3	4	4' 10"	
13.Depth to Static Water Level from top of monitoring well casing	5' 5"	4' 9½"	5' 8"	5' 2"	
Date Measured	19 Oct 87	19 Oct 87	19 Oct 87	19 Oct 87	
14.Depth to Static Water from ground level	2' 11"	2' 3½"	3' 2"	2' 8"	
Date Measured	19 Oct 87	19 Oct 87	19 Oct 87	19 Oct 87	
15.Elevation at ground level	638.6	633.3	634.0	617.5	
16.Elevation - Top of monitoring well casing	×				
17.Ground-water elevation	635.7	631	630.8	615	
Date Measured	19 Oct 87	19 Oct 87	19 Oct 87	19 Oct 87	
Comments	*			·	

PROJECT Seneca Army Depot 38-26-K928-90

Bulking ASS at 1941 A

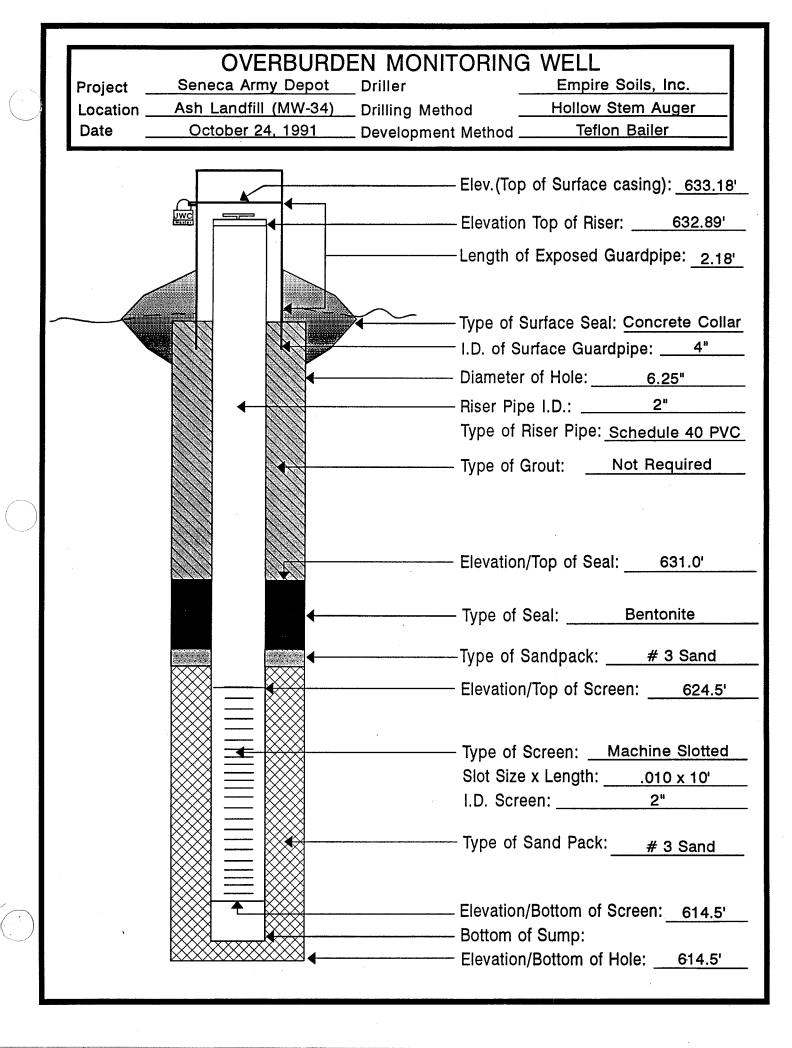
DATE November 1989

WELL NUMBER	MW - 27	MW - 28	MW - 29	MW - 30	MW - 31
l. Height of Monitoring Well Casing above ground level	2.0'	1.9'	1.4'	3_0'	0.8'
2. Total Depth of Well below ground level	8.0'	8.1'	8.6'	7.0'	9.2'
3. Depth to Top of Well Screen below ground level	3.04	3.1'	3.6'	2.0'	4.2'
4. Well Screen Length	5.0'	5.0'	5.0'	5.0'	5.0'
5. Well Screen Slot Size	0.010"	0.010"	0.010"	0.010"	0.010"
6. Well Diameter	2.0"	2.0"	2.0"	2.0"	2.0"
7. Monitoring Well Casing Material	PVC	PVC .	PVC	PVC	PVC
8. Monitoring Well Screen Material	PVC	PVC	PVC	PVC	PVC
9. Grout Thickness below ground level	ALL WELL	s GROUTED	CO SURFACE	WITH BENTO	VITE:
10.Depth to Top of Bentonite Seal below ground level	. 0	0	0	.a. O	. 0
11.Bentonite Seal Thickness	3.0'	3.1'	3.6'	2.0'	4.2'
12.Depth to Top of Sand Pack	3.0'	3.1'	3.6'	2.0'	4.2'
13.Depth to Static Water Level from top of monitoring well casing	5.0'	4.65'	6.1'	4.2'	2.7"
Date Measured	17 Nov 89	17 Nov. 89	17 Nov 89	17 Nov 89	17 Nov 89
_14.Depth to Static Water from ground level					e ,iii
. Date Measured					
15.Elevation at ground level	•3				r i.
16.Elevation - Top of monitoring well casing	638.38	636.46	636.42	639.41	635.88
17.Ground-water elevation	633.38	· 631.81	630.32	635.21	633.18
Date Measured	17 Nov 89	17 Nov 89	17 Nov 89	17 Nov 89	17 Nov 89
Comments					
=	· ·		•		

AEHA Form 93-R, 1 JUN 88

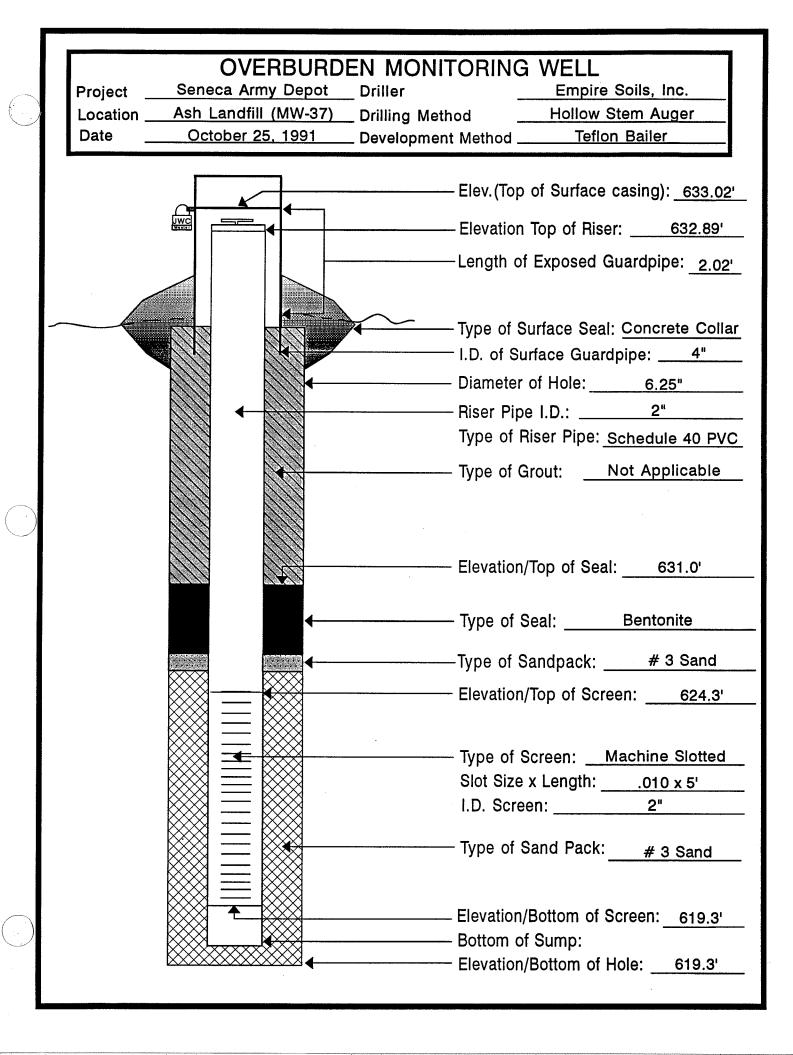
PROJECT Seneca Army Depot 38-26-K928-90 DATE November 1989

WELL NUMBER	MW - 32	MW - 33			
l. Height of Monitoring Well Casing above ground level	.1.3'	1.5'		-	•
2. Total Depth of Well below ground level	8.7'	8.5'	#C:		
3. Depth to Top of Well Screen below ground level	3.7'	3.5'			:•0
4. Well Screen Length	5.0'	5.0'			
5. Well Screen Slot Size	0.010"	0.010"			
6. Well Diameter	2.0"	2.0"			
7. Monitoring Well Casing Material	PVC	PVC .		2:	**
8. Monitoring Well Screen Material	PVC .	PVC			
9. Grout Thickness below ground level	ALL WELL SURFACE	GROUTED T	O ITE		
10.Depth to Top of Bentonite Seal below ground level	. 0	0		*	
11.Bentonite Seal Thickness	3.7'	3.5'			
12.Depth to Top of Sand Pack	3.7'	3.5'			
13.Depth to Static Water Level from top of monitoring well casing	3.8'	3.5'			
Date Measured	17 Nov 89	17 Nov 89			
14.Depth to Static Water from ground level					
T Date Measured	•				
15.Elevation at ground level					· .
16.Elevation - Top of monitoring well casing	640.92	638.68			
17.Ground-water elevation	637.12	635.18			
Date Measured	17 Nov 89	17 Nov 89		Д.	4 4
Comments		41			1.0
					nor
	1 .			1	

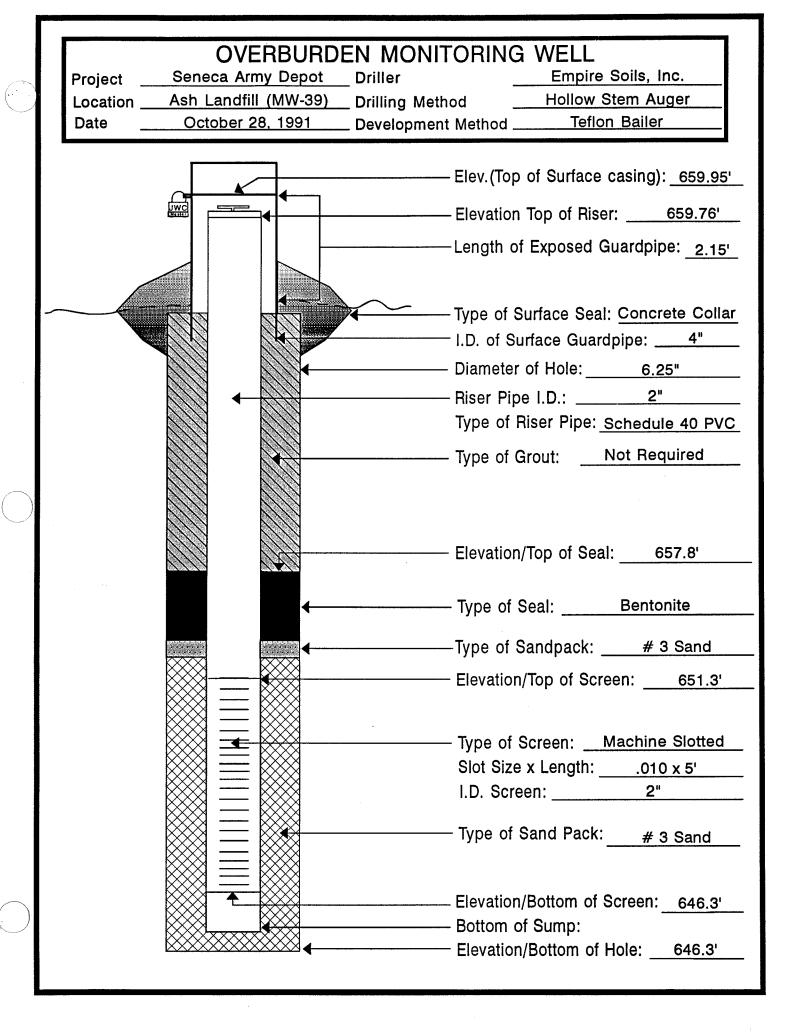


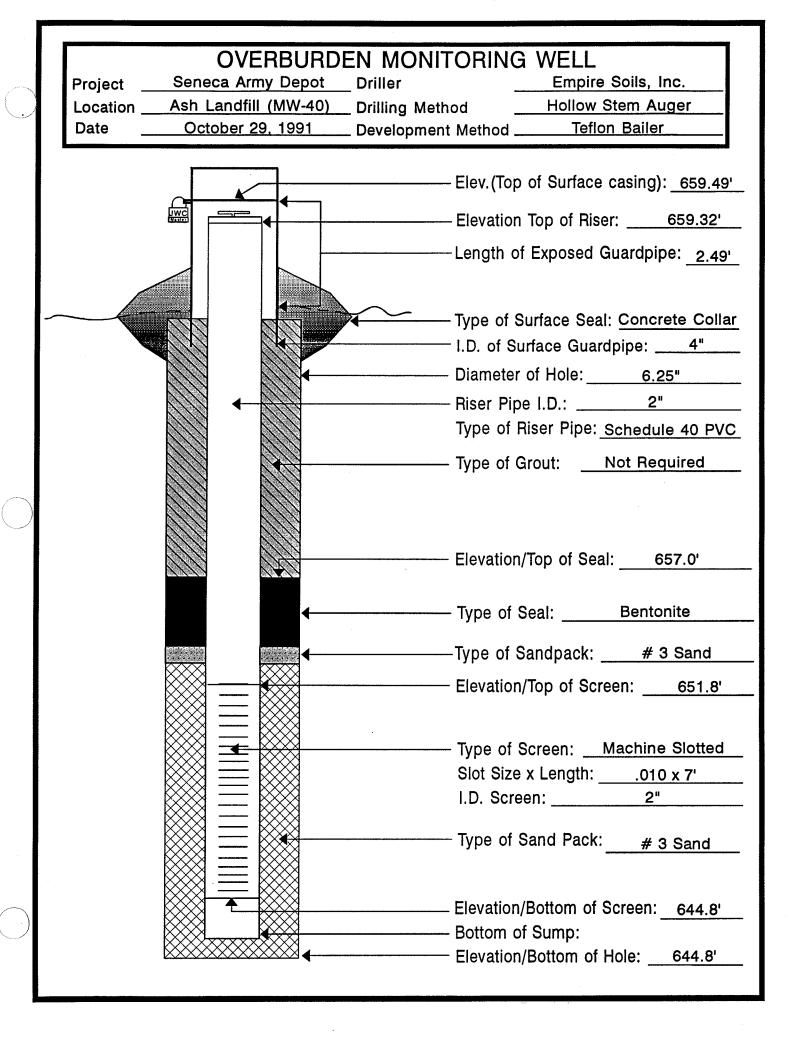
	BEDROCK MON	
Project	Seneca Army Depot Driller  Ash Landfill (MW-35D) Drilling N	Empire Soils, Inc.  Hol.Stem Auger/Air Rotary
Location Date	November 5, 1991 Develop	ment Method Teflon Bailer
Date	, Developi	Herit Metriou
		Elev.(Top of Surface casing): 631.88'  Elevation Top of Riser: 631.90'
		Length of Exposed Guardpipe: <u>2.28'</u>
Overburden Veathered Bedrock Surfa		Elevation/Ground Surface: 629.6' Type of Surface Seal: Concrete Collar I.D. of Surface Guardpipe: 4" Diameter of Hole: 10.25" Riser Pipe I.D.: 2" Type of Riser Pipe: Schedule 40 PVC Type of Grout: Cement/Bentonite PVC I.D. (Surface to Bedrock): 6" Type of Grout (outside PVC):Cem./Bent Elevation/Depth Top of Seal: 606.2'
C		Type of Seal: Bentonite
Competent		Elevation/Depth Top of Screen: 600.6
ent	<b>4</b>	Type of Screen: Machine Slotted
		Slot Size x Length:010 x 25'
dro		I.D. Screen: 2"
Bedrock ——		—— Type of Sand Pack:#3 Sand
		Diameter of Hole in Bedrock:
		Core/Rock: 6.25"
		Elevation/Bottom of Screen: 575.6'
<b>\</b>		Elevation/Bottom of Hole: 575.1'

	OVERBURD	EN MONITORING	G WELL
Project _	Seneca Army Depot	Driller	Empire Soils, Inc.
Location _	Ash Landfill (MW-36)		
Date _	October 30, 1991	Development Method	Teflon Bailer
	LWC LANGE TO THE PARTY OF THE P	Elevation	p of Surface casing): 632.04' n Top of Riser: 631.73'
		Type of I.D. of S Diamete	Surface Seal: Concrete Collar Surface Guardpipe:4"  or of Hole:6.25"  pe I.D.:2"
			Riser Pipe: Schedule 40 PVC  Grout: Not Required
·			n/Top of Seal: 630.1
	<b>←</b>	Type of	Seal: Bentonite
		Type of	Sandpack: # 3 Sand
		Elevation	n/Top of Screen: 625.3'
		Slot Size	Screen: Machine Slotted e x Length: .010 x 10' een: 2"
		Elevation Bottom	•
		Elevation	n/Bottom of Hole: 615.3'



		K MONITORING	WELL
Project _	Seneca Army Depot		Empire Soils, Inc.
Location _	Ash Landfill (MW-38D)	_ Drilling Method	Hol.Stem Auger/Air Rotary
Date _	November 6, 1991	_ Development Method	Teflon Bailer
Overburden Surface Competent Bedrock ————————————————————————————————————		Elevation  Length  Elevation  Type of  I.D. of  Diamet  Riser For  Type of  PVC I.I.  Type of  Elevation  Type of  Slot Sin  I.D. So  Diamet  Core/For  Elevation  Elevation  Elevation  Type of  Slot Sin  I.D. So  Diamet  Core/For  Elevation	op of Surface casing): 638.04' on Top of Riser: 637.93' of Exposed Guardpipe: 2.64' on/Ground Surface: 635.4' if Surface Seal: Concrete Collar Surface Guardpipe: 4" er of Hole: 10.25" Pipe I.D.: 2" if Riser Pipe: Schedule 40 PVC if Grout: Cement/Bentonite D. (Surface to Bedrock): 6" if Grout (outside PVC): Cem./Bent. on/Depth Top of Seal: 630.5' of Seal: Bentonite on/Depth Top of Screen: 625.7' of Screen: Machine Slotted ze x Length: .010 x 20' creen: 2" of Sand Pack: #3 Sand der of Hole in Bedrock: 6.25" on/Bottom of Screen: 605.7' on/Bottom of Hole: 605.4'

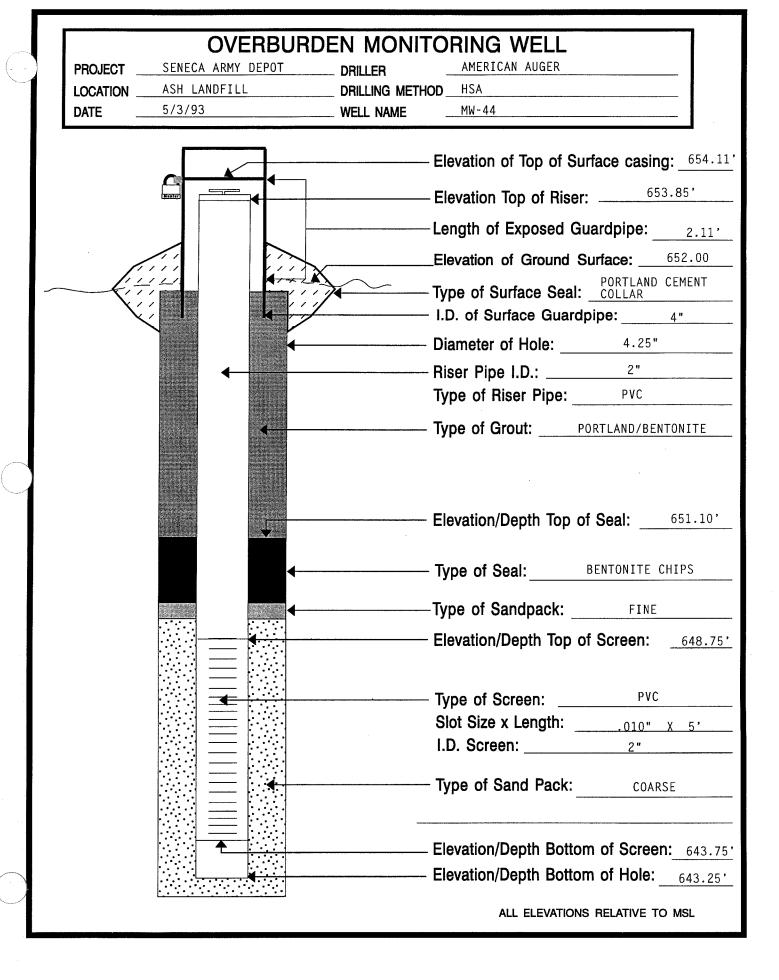


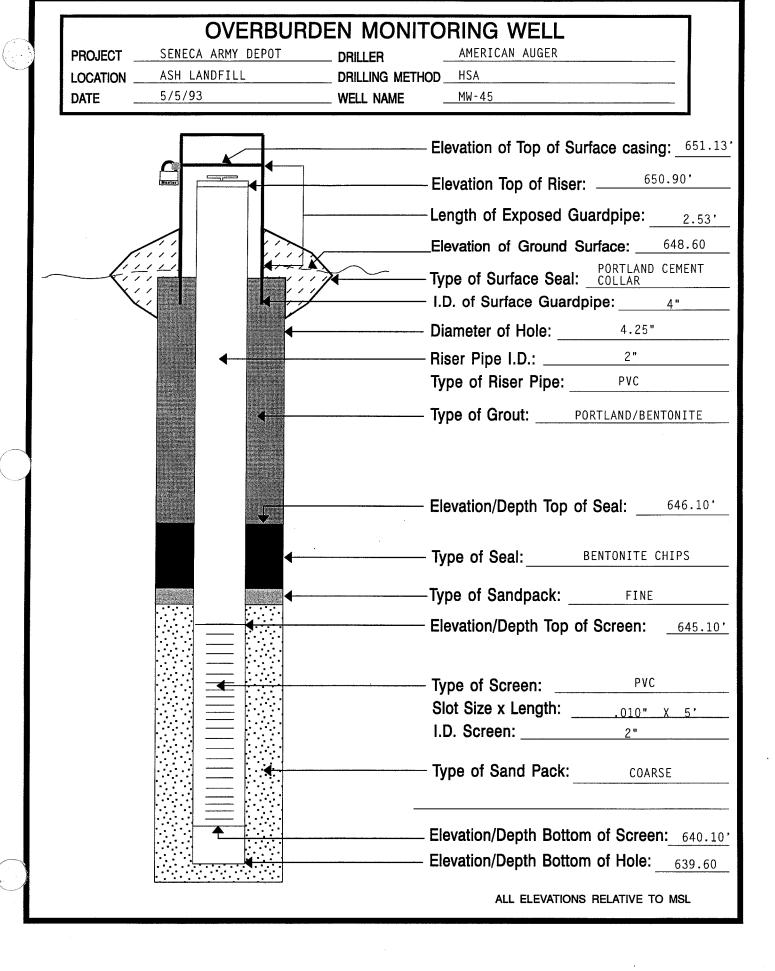


		BEDROC	K MONITORING	WELL
	Project _	Seneca Army Depot	_ Driller	Empire Soils, Inc.
	Location _		_ Drilling Method	Hol.Stem Auger/Air Rotary
	Date _	November 6, 1991	_ Development Method	Teflon Bailer
Wea	Overburden Competent Bedrock ————————————————————————————————————		Elevation  Length  Elevation  Type of  I.D. of  Diamet  Riser For  Type of  PVC I.I.  Type of  Elevation  Type of  Slot Six  I.D. So  Diamet  Core/Fix  Elevation  Elevation  Elevation  Type of  Slot Six  I.D. So  Diamet  Core/Fix  Elevation	op of Surface casing): _694.04' on Top of Riser:694.02' of Exposed Guardpipe: _2.44' on/Ground Surface:691.6' of Surface Seal: _Concrete Collar Surface Guardpipe:4" er of Hole:10.25" on/Ere I.D.:2" of Riser Pipe: _Schedule 40 PVC of Grout:Cement/Bentonite  D. (Surface to Bedrock):6" of Grout (outside PVC): Cem./Bent. on/Depth Top of Seal:682.8' on/Depth Top of Screen: _677.1'  on/Depth Top of Screen: _677.1'  on/Soreen:2"  on/Bottom of Screen: _647.1' on/Bottom of Screen: _647.1' on/Bottom of Hole:646.6'

			CK MONITORING	
-	Project _	Seneca Army Depot	Driller	Empire Soils, Inc.
	Location _	Ash Landfill (MW-42D) November 8, 1991		Hol.Stem Auger/Air Rotary Teflon Bailer
	Date _	11010111201 0, 1001	Development Method	a
Weat	Overburden / Sime Competent Bedrock ————————————————————————————————————		Elevat Lengti Elevat Type of I.D. o Diame Riser Type of PVC I Type of Elevat  Type of Elevat  Type Elevat  Type Elevat  Type Slot S I.D. S  Type Diame Core/ Elevat	Top of Surface casing): _683.18'  tion Top of Riser:683.04' h of Exposed Guardpipe: _2.48'  tion/Ground Surface:680.7' of Surface Seal: _Concrete Collar f Surface Guardpipe:4"  eter of Hole:10.25"  Pipe I.D.:2"  of Riser Pipe: _Schedule 40 PVC  of Grout:Cement/Bentonite  D. (Surface to Bedrock):6"  of Grout (outside PVC): _Cem./Bent  tion/Depth Top of Seal:661.9'  of Seal:Bentonite  tion/Depth Top of Screen:656.0'  of Screen:2"  of Sand Pack:43 Sand  eter of Hole in Bedrock:

#### SENECA ARMY DEPOT DRILLER AMERICAN AUGER PROJECT ASH LANDFILL DRILLING METHOD \_\_\_HSA LOCATION 5/3/93 MW-43 DATE WELL NAME Elevation of Top of Surface casing: 657.90 - Elevation Top of Riser: \_\_\_\_\_657.73' -Length of Exposed Guardpipe: \_\_\_\_\_2.30 Elevation of Ground Surface: 655.60 Type of Surface Seal: PORTLAND CEMENT COLLAR I.D. of Surface Guardpipe: Diameter of Hole: \_\_\_\_\_4.25" Riser Pipe I.D.: 2" Type of Riser Pipe: PVC Type of Grout: PORTLAND/BENTONITE Elevation/Depth Top of Seal: 653.50' - Type of Seal: BENTONITE CHIPS -Type of Sandpack: \_\_\_\_\_FINE Elevation/Depth Top of Screen: Type of Screen: I.D. Screen: 2" - Type of Sand Pack: COARSE \_ Elevation/Depth Bottom of Screen: 650.6 — Elevation/Depth Bottom of Hole: 650.1 ALL ELEVATIONS RELATIVE TO MSL

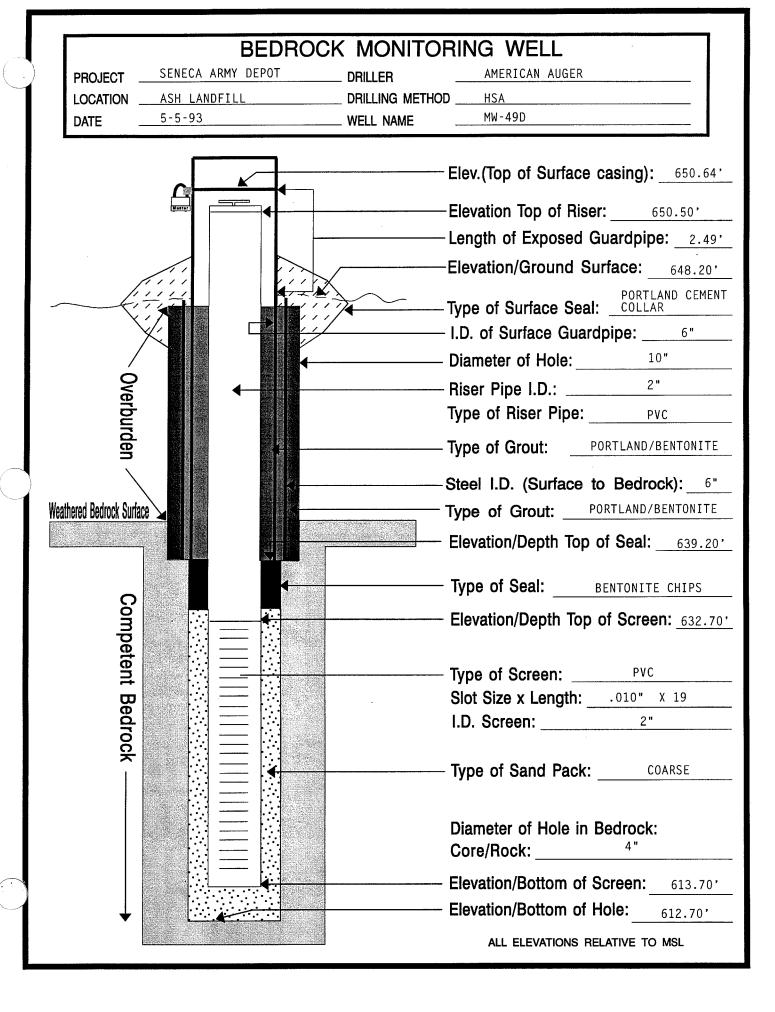


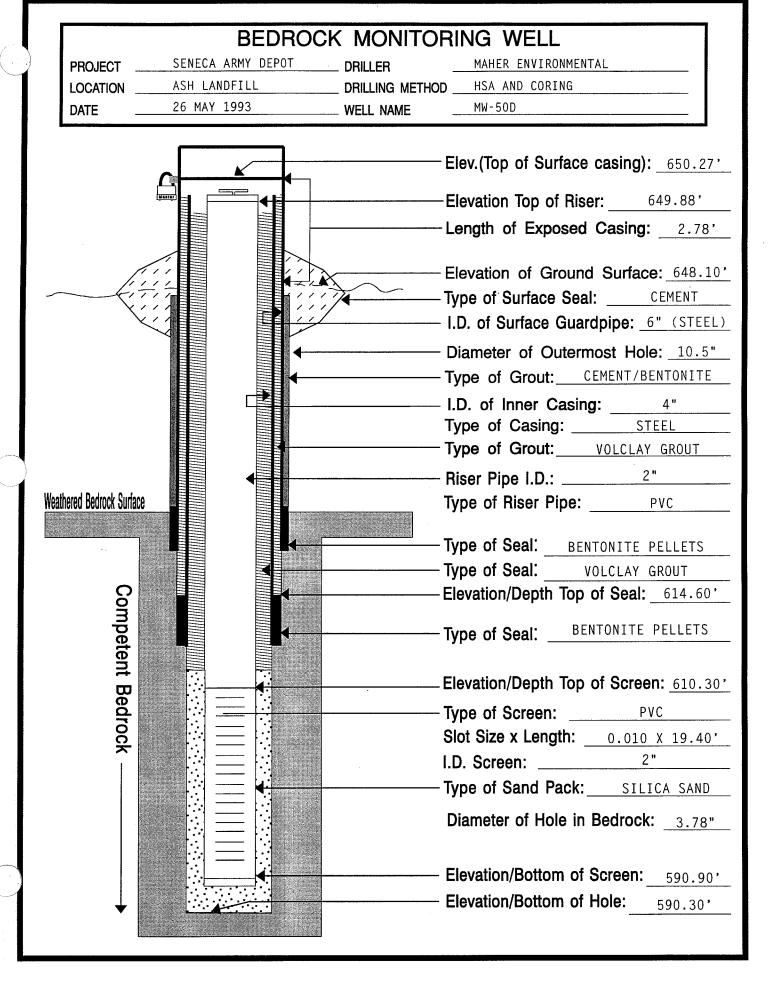


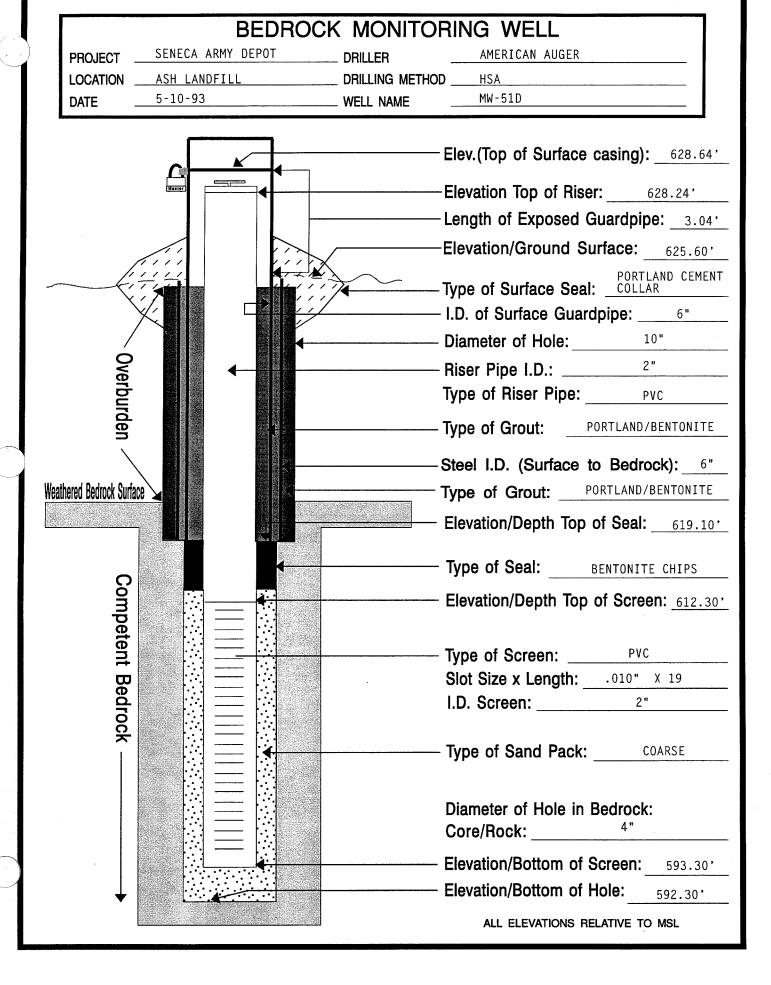
#### SENECA ARMY DEPOT DRILLER AMERICAN AUGER PROJECT ASH LANDFILL DRILLING METHOD \_ HSA LOCATION 5/5/93 DATE WELL NAME MW-46 Elevation of Top of Surface casing: 650.65 Elevation Top of Riser: -Length of Exposed Guardpipe: 2.55, 648.10' Elevation of Ground Surface: \_\_\_ - Type of Surface Seal: PORTLAND CEMENT I.D. of Surface Guardpipe: Diameter of Hole: \_\_\_\_ 4.25" Riser Pipe I.D.: 2" PVC Type of Riser Pipe: - Type of Grout: \_\_\_\_\_ PORTLAND/BENTONITE - Elevation/Depth Top of Seal: 645.60' - Type of Seal: BENTONITE CHIPS -Type of Sandpack: FINE Elevation/Depth Top of Screen: Type of Screen: I.D. Screen: 2" Type of Sand Pack: COARSE \_ Elevation/Depth Bottom of Screen: 639.60 Elevation/Depth Bottom of Hole: 639.10 ALL ELEVATIONS RELATIVE TO MSL

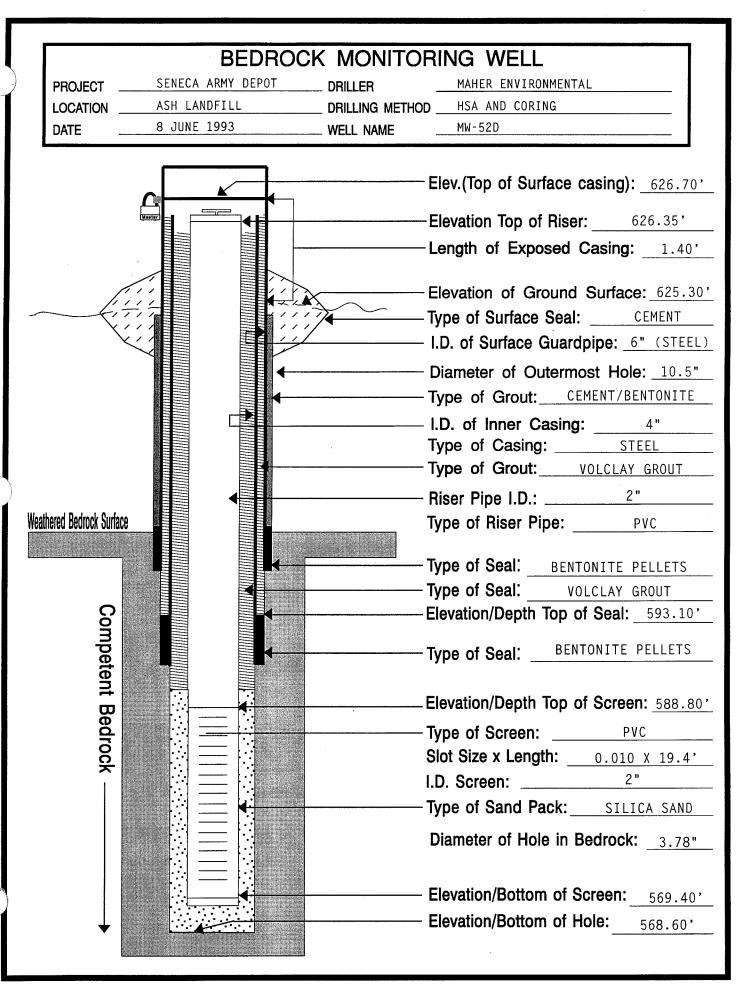
PROJECT	SENECA ARMY DEPOT	DRILLERAMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD HSA
DATE	5/11/93	WELL NAME MW-47
		Elevation of Top of Surface casing: 628.5  Elevation Top of Riser: 628.06'  Length of Exposed Guardpipe: 3.24'  Elevation of Ground Surface: 625.30'  Type of Surface Seal: PORTLAND CEMENT COLLAR  I.D. of Surface Guardpipe: 4"
		Diameter of Hole: 4.25"
		Riser Pipe I.D.: 2"
		Type of Riser Pipe:PVC
	4	Type of Grout:PORTLAND/BENTONITE
		Elevation/Depth Top of Seal: 624.657  Type of Seal: BENTONITE CHIPS
		Type of Sandpack: FINE
		•
		Elevation/Depth Top of Screen: 621.80
		Type of Screen: PVC
		Slot Size x Length:010" X 1.5
		I.D. Screen: 2"
		Type of Sand Pack: coarse
		Florestics / Donath Both
		Elevation/Depth Bottom of Screen: 620.3
		Elevation/Depth Bottom of Hole: 619.80
		ALL ELEVATIONS RELATIVE TO MSL

PROJECT SENECA ARMY DEPOT  LOCATION ASH LANDFILL	EN MONITORING WELL  DRILLER DRILLING METHOD HSA WELL NAME MW-48
	Elevation of Top of Surface casing: 648.57'  Elevation Top of Riser: 648.32'  Length of Exposed Guardpipe: 2.57'  Elevation of Ground Surface: 646.00'  Type of Surface Seal: PORTLAND CEMENT COLLAR  I.D. of Surface Guardpipe: 4"  Diameter of Hole: 4.25"  Riser Pipe I.D.: 2"  Type of Riser Pipe: PVC  Type of Grout: PORTLAND/BENTONITE
	Elevation/Depth Top of Seal: 643.50'  Type of Seal: BENTONITE CHIPS
	Type of Sandpack: FINE
	Elevation/Depth Top of Screen: 642.50
	Type of Screen: PVC  Slot Size x Length: 2"  I.D. Screen: 2"
	Type of Sand Pack: coarse
	Elevation/Depth Bottom of Screen: 637.50' Elevation/Depth Bottom of Hole: 637.00'
<u> </u>	ALL ELEVATIONS RELATIVE TO MSL

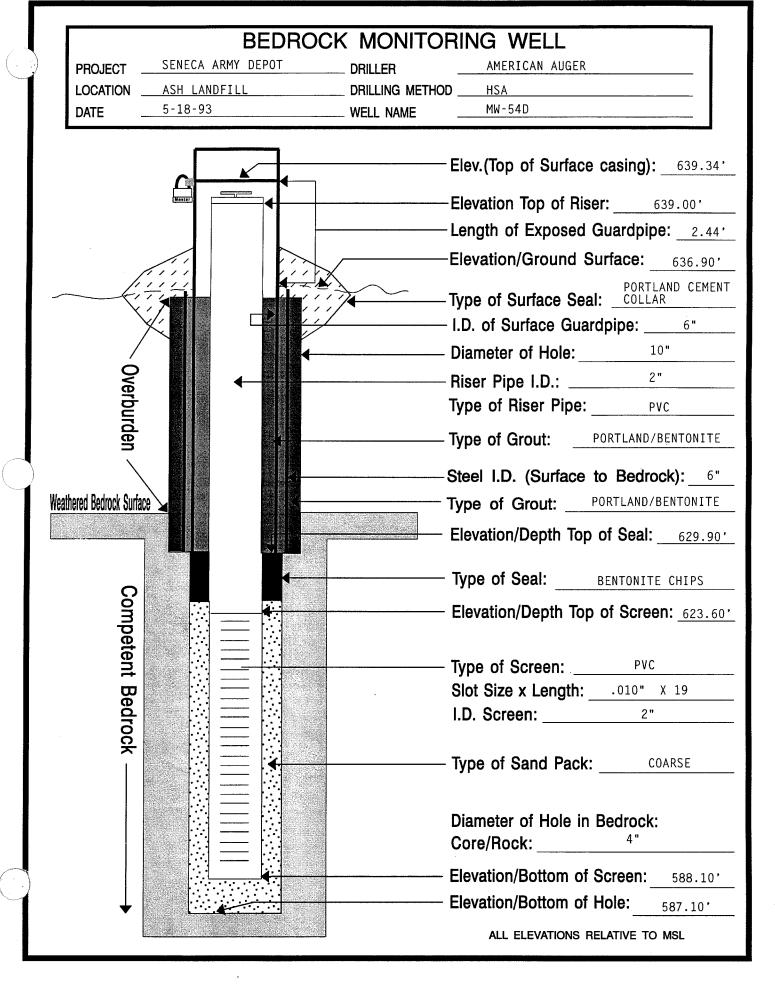


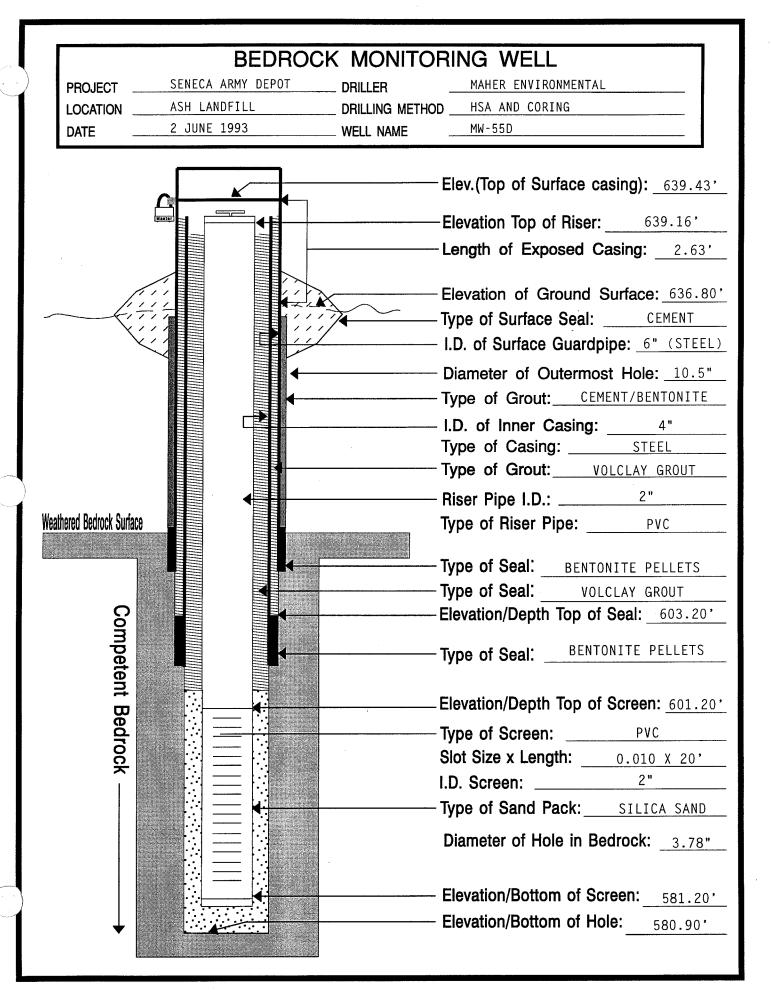




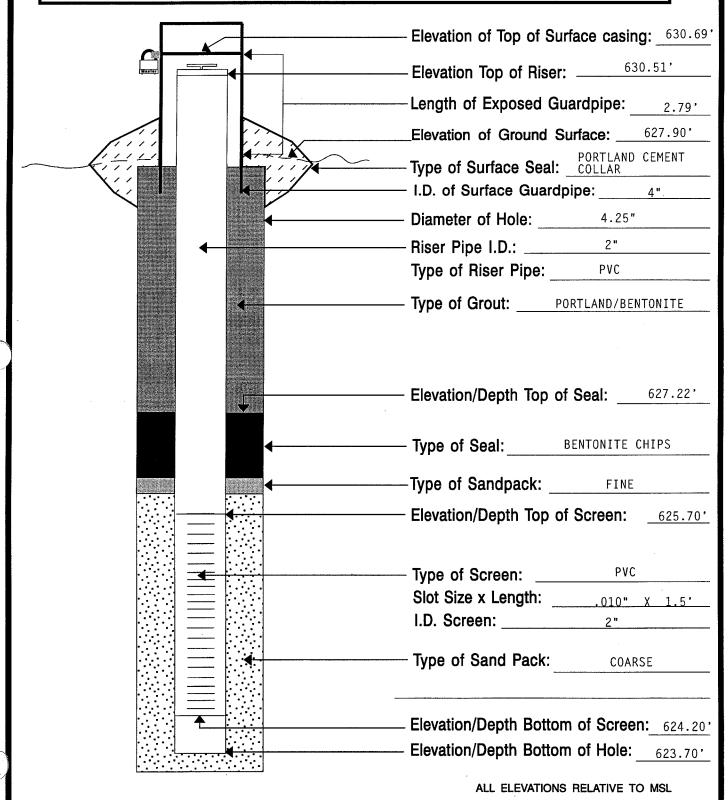


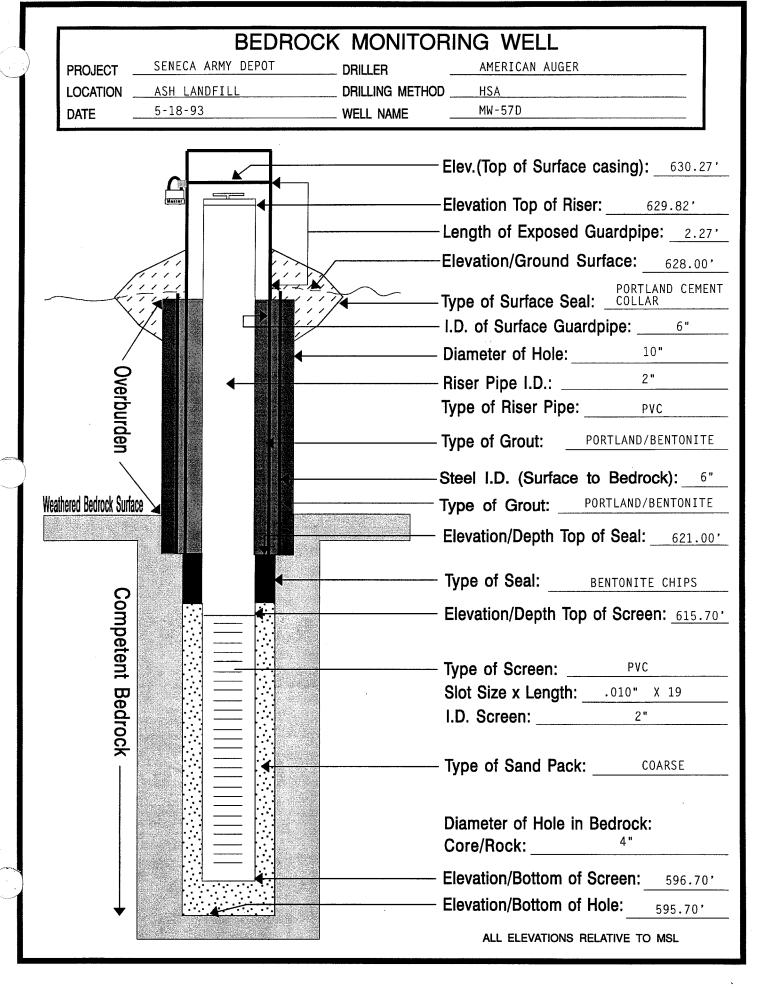
#### AMERICAN AUGER SENECA ARMY DEPOT DRILLER PROJECT ASH LANDFILL DRILLING METHOD HSA LOCATION MW-53 5/6/93 DATE WELL NAME Elevation of Top of Surface casing: 639.63 - Elevation Top of Riser: -Length of Exposed Guardpipe: 2.13 Elevation of Ground Surface: 637.00' - Type of Surface Seal: PORTLAND CEMENT I.D. of Surface Guardpipe: Diameter of Hole: 4.25" Riser Pipe I.D.: 2" Type of Riser Pipe: PVC - Type of Grout: PORTLAND/BENTONITE - Elevation/Depth Top of Seal: 635.50 - Type of Seal: BENTONITE CHIPS -Type of Sandpack: \_\_\_\_ FINE Elevation/Depth Top of Screen: 633.00' Type of Screen: I.D. Screen: 2" Type of Sand Pack: COARSE Elevation/Depth Bottom of Screen: 629.007 — Elevation/Depth Bottom of Hole: 629.50\* ALL ELEVATIONS RELATIVE TO MSL

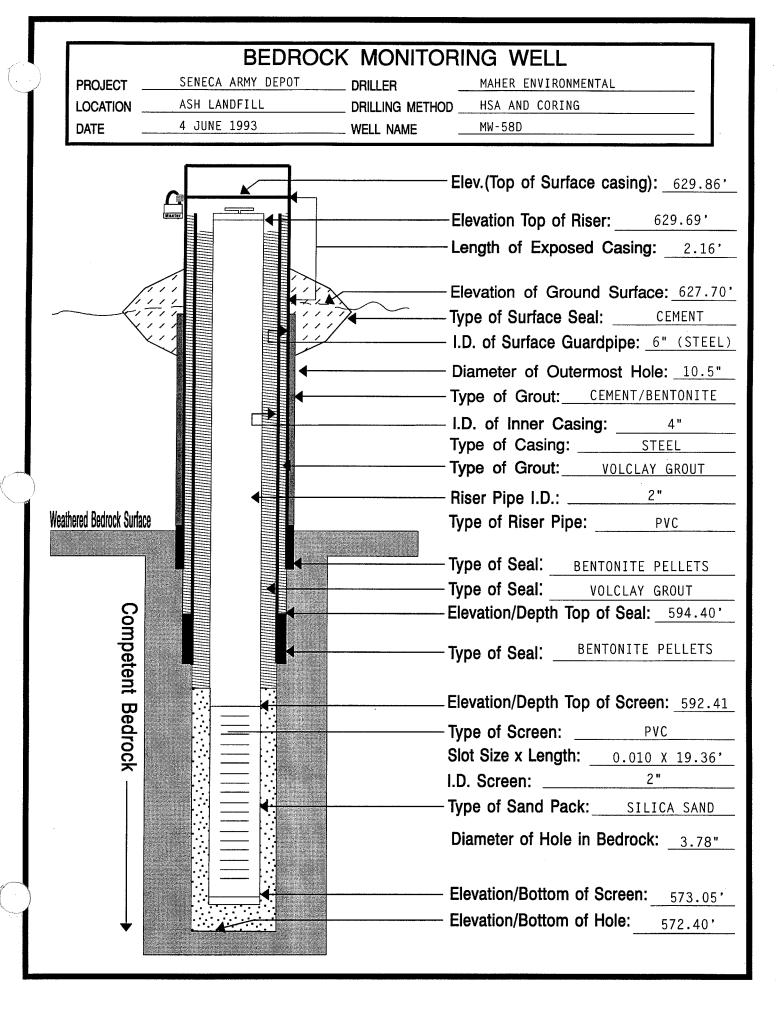




# OVERBURDEN MONITORING WELL PROJECT SENECA ARMY DEPOT DRILLER AMERICAN AUGER LOCATION ASH LANDFILL DRILLING METHOD HSA DATE 5/11/93 WELL NAME MW-56







TOP OF ROCK (TOR) Q11 295 100

11-8-06 11-8-06 1025 mw-26 SS HB = 204, 15,15 TORQ 10' 6 10.5 MW-270 Chip. TO Sand To 3.5 0850 1020

11-8-06 11-8-06 MW-26 mw-23 \$ 10' MW-23 5.6 TOR. Chyps 4,5 to 63 10'2 TT 11.564.5 30 TORQ 11 11.6.66.5 screens 1228 mw-29 1540 5,68-14 mw-29 HB TOR@10 Chipo 3 to 65 sell (Top Sail) 23'X 10' TOR LO

11-8-6 11-8-6 MB=12,13 14,15 mw-29 63 Chips 35 763 10.5 to 5.5 scree TOREGO.Z 3.5 To HA15, 5, 6, 5 mw-29 HBZ50/2

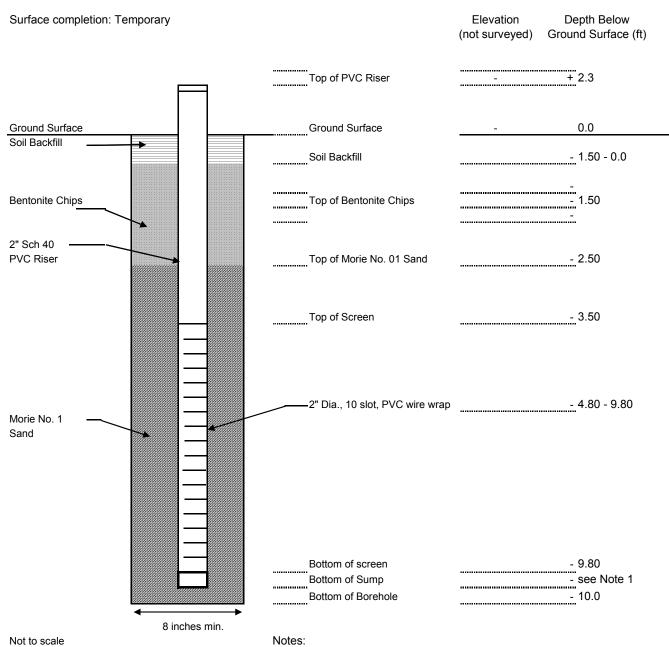
Det 11-9-06 11-9-06 site with MW-2 loven to chips 3 to 63 MW-25 Dard 1063 TOR 6.8 pt-18A Some as above HB= WOH, 2, 3, HB-7, 13, 11, 10 CTOP SOIL, 2-6' HBM, 5,53

11-9-06 11-9-06 HB=6,13,15,17 Chips 2.8 to 65 S TOR 26.9 sanf 9.8 to 2.8 Screen 9.8 To 4.8'. TP 9.8' 15, 38, 59, SS-

11-10-06 mw-24 mw-24 mw-24 05 Sono 11 to 6' 1400 1300 in

#### **Monitoring Well Construction Detail SEAD-48**

Ash Landfill - Biowall Depot Activity Priling Contractor: Project: Geologic Drilling, Inc. Well Number: MWT-17R **Date Started:** 8/22/2005 Geologist: McAllister **Date Completed:** 8/22/2005



(1) 6 inch end cap installed at bottom of well screen.

Measured length of casing and screen prior to installation is 15.5 (before the well casing was cut to 2.30

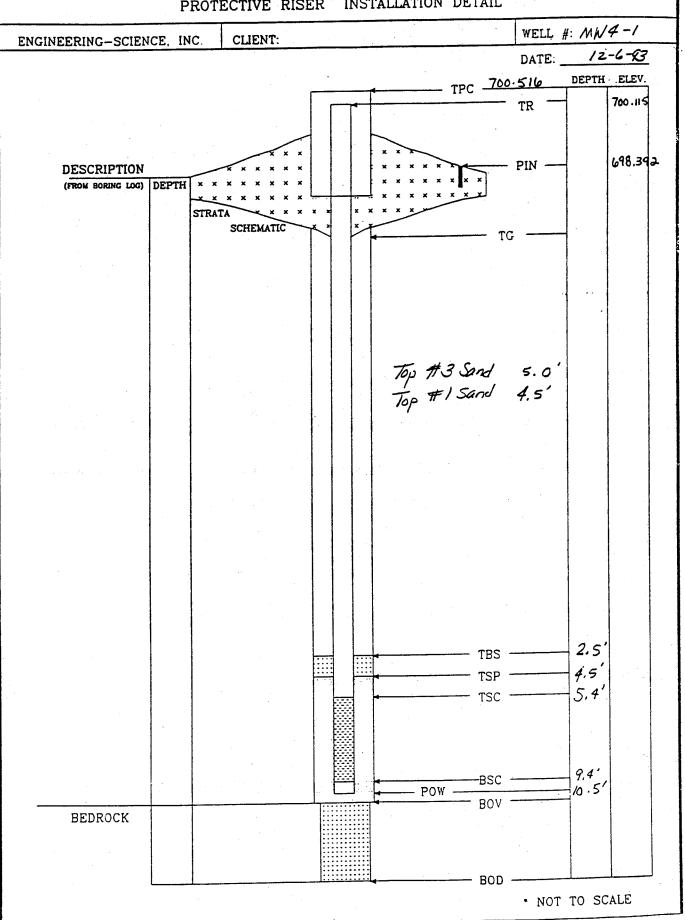
PAGE 1 OF 2 OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW4-/ PROJECT: 10 SWMU PROJECT NO: 720477 SEAD 4 LOCATION: INSPECTOR: ES/&B CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 10.5 Scott DRILLER: INSTALLATION STARTED: 12-6-93 DRILLING COMPLETED: 12-6-93 INSTALLATION COMPLETED: 12-6-93 BORING DEPTH: SURFACE COMPLETION DATE: 12-6-93 DRILLING METHOD(S): COMPLETION CONTRACTOR/CREW: Empike BORING DIAMETER(S): 8/21 BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: 698.392 PROTECTIVE SURFACE CASING: DIAMETER: 4" 4" Steel LENGTH: RISER: TYPE: PVC - D DIAMETER: 2" LENGTH: TR: SCREEN: SLOT TSC: 5,4' TYPE: PVC 40 DIAMETER: 2" LENGTH: 4' SIZE: 0.01" POINT OF WELL: (SILT SUMP) POW: 10,5 GROUT: TG: Ground TYPE: Coment-benton't LENGTH: 2,5 SEAL: TYPE: bentant pollets LENGTH: TSP: 4.5' #1 5.0'#1 TYPE: SAND PACK: #34#/ LENGTH: SURFACE COLLAR: RADIUS: 2 X2 THICKNESS CENTER: TYPE: THICKNESS EDGE: / CENTRALIZER DEPTHS DEPTH 1: \_\_\_\_ DEPTH 2: \_\_\_\_ DEPTH 3: \_\_\_\_ DEPTH 4: COMMENTS:

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

## OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

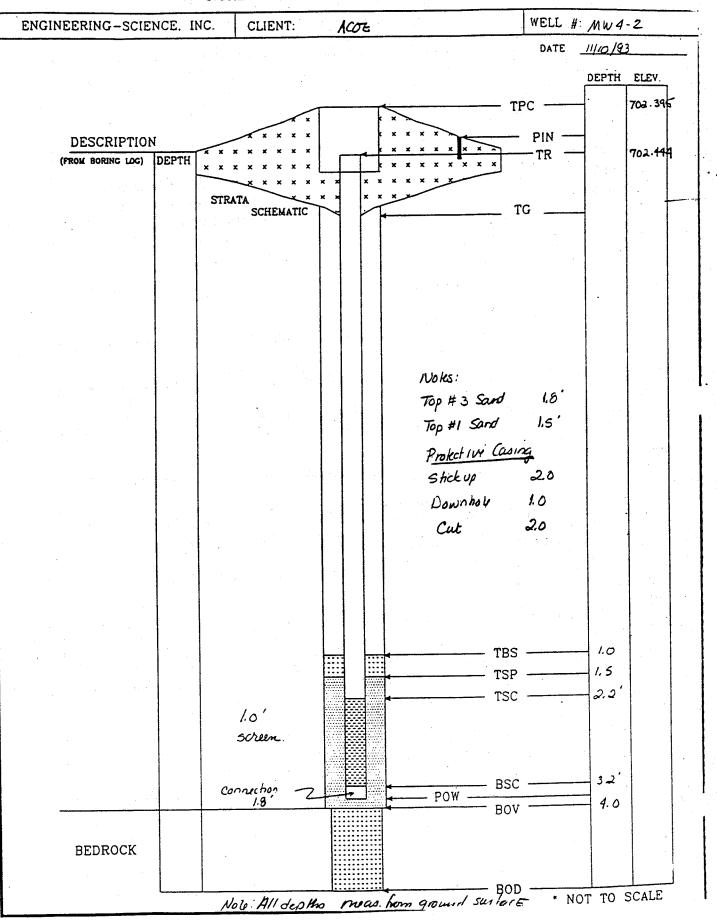


OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL ROADWAY BOX - SURFACE COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW-4-2 PROJECT: \_\_ 10 SWMU LOCATION: 5590 4 INSPECTOR: ES CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 4,0 DRILLER: Bob INSTALLATION STARTED: 11/10/93 DRILLING COMPLETED: 11/10/93 INSTALLATION COMPLETED: 11/10/93 BORING DEPTH: 4.0 SURFACE COMPLETION DATE: 11/10/93 DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: EMPIRE BORING DIAMETER(S): 81/21 BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: 699.448 PROTECTIVE SURFACE CASING: DIAMETER: 4"x4" Ske/ LENGTH: RISER: TR: TYPE: PVC 40 DIAMETER: SCREEN: DIAMETER: 11 1 2 SIZE: 0.01" POINT OF WELL: (SILT SUMP) TYPE: Pyc point GROUT: TG: ground TYPE: Com.-bentonia LENGTH: SEAL: TBS: 1.0' TYPE: bentonit pellet LENGTH: SAND PACK: 1.5'- #1 16'-#3 TYPE: #3 + #1 TSP: LENGTH: SURFACE COLLAR: TYPE: Cement RADIUS: THICKNESS CENTER: THICKNESS EDGE: CENTRALIZER DEPTHS DEPTH 1: DEPTH 2: DEPTH 3: COMMENTS: \*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

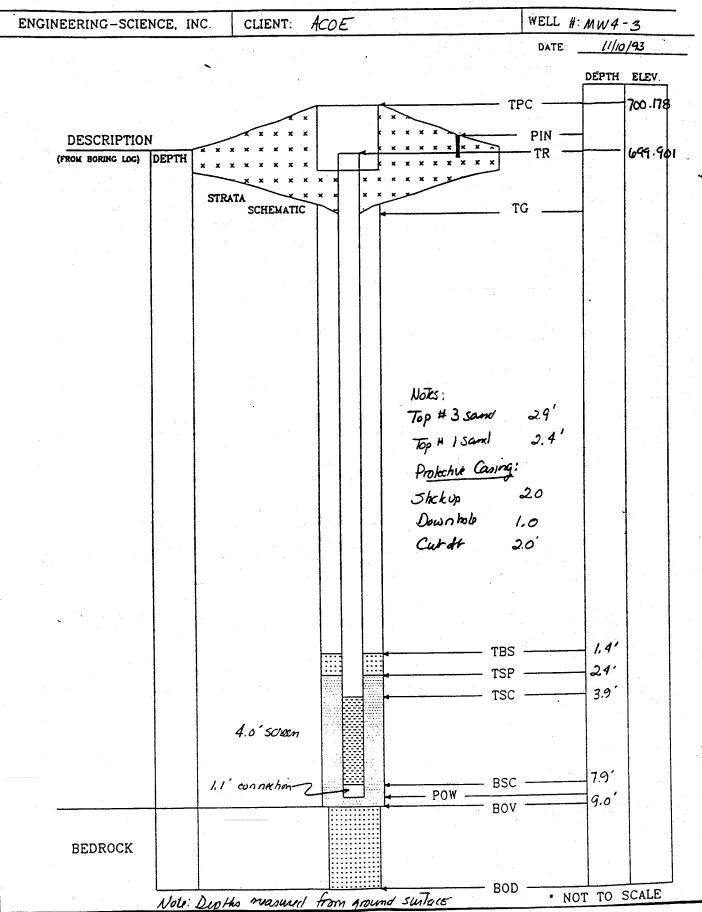
## OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL



OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL ROADWAY BOX - SURFACE COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW4-3 PROJECT: 10 SWMU PROJECT NO: 720477 LOCATION: SEAD 4 INSPECTOR: CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 90' DRILLER: Bob INSTALLATION STARTED: 11/10/93 DRILLING COMPLETED: 11/10/93 INSTALLATION COMPLETED: 11/10/93 BORING DEPTH: 9.0 SURFACE COMPLETION DATE: 11/10/93 DRILLING METHOD(S): HSA COMPLETION CONTRACTORICREW: Empire BORING DIAMETER(S): 81/2" BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: 697.669 PROTECTIVE SURFACE CASING: DIAMETER: 4"x 4" Shel LENGTH: RISER: TR: DIAMETER: 2" SCREEN: SLOT TSC: 3,9' SIZE: .0/" POINT OF WELL: (SILT SUMP) TYPE: PYC point GROUT: Ground LENGTH: SEAL: TYPE: <u>bentont</u> pelots LENGTH: SAND PACK: TYPE: #3 - #/ LENGTH: SURFACE COLLAR: TYPE: Cement RADIUS: THICKNESS CENTER: / THICKNESS EDGE: CENTRALIZER DEPTHS DEPTH 1: DEPTH 2: DEPTH 3: COMMENTS: \* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE SEE PAGE 2 FOR SCHEMATIC PAGE 1 OF 2

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### OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

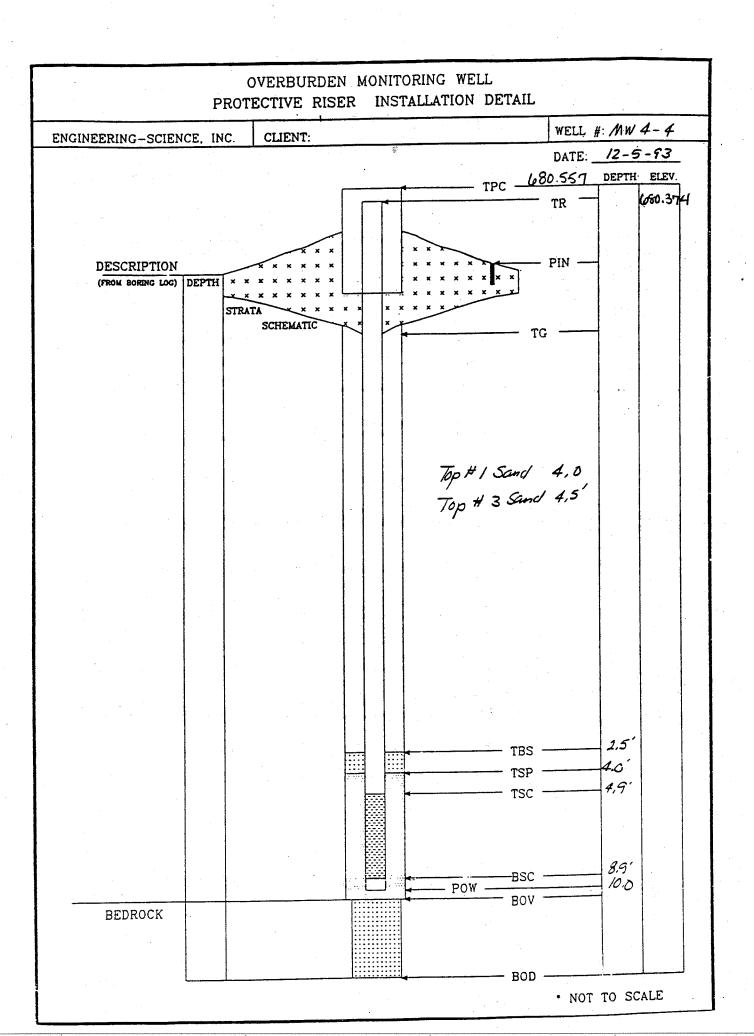


OVERBURDEN MONITORING WEI **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW 4-4 PROJECT: 10 SWMU PROJECT NO: 720477 LOCATION: SEAD 4 INSPECTOR: CHECKED BY: DRILLING CONTRACTOR: Empic POW DEPTH: 10.0 DRILLER: INSTALLATION STARTED: 12-5-93 DRILLING COMPLETED: INSTALLATION COMPLETED: /2-5-93 BORING DEPTH: SURFACE COMPLETION DATE: 12-5-93 DRILLING METHOD(S): ASA COMPLETION CONTRACTOR/CREW: Empire BORING DIAMETER(S): 812" BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: 678.217 PROTECTIVE SURFACE CASING: DIAMETER: 4" x 4" Steel LENGTH: RISER: DIAMETER: SCREEN: SLOT DIAMETER: LENGTH: 4.0 POINT OF WELL: (SILT SUMP) TYPE: PVC DOINT GROUT: TYPE: Cement - ban tom tilength: TG: Ground SEAL: 4.0 - #1 4.5- #3 TYPE: #3 and #1 SAND PACK: SURFACE COLLAR: TYPE: Cement 2'x 2' RADIUS: THICKNESS CENTER: THICKNESS EDGE: CENTRALIZER DEPTHS DEPTH 1: DEPTH 2: DEPTH 3: DEPTH 4: COMMENTS:

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE



PAGE 1 OF 2 OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW4-5 PROJECT: 10 SWMU PROJECT NO: 720477 LOCATION: SEAD 4 INSPECTOR: ES/LB CHECKED BY: DRILLING CONTRACTOR: Empiré POW DEPTH: DRILLER: John W. INSTALLATION STARTED: /2/5/93 DRILLING COMPLETED: 12-5-93 INSTALLATION COMPLETED: 12/5/93 BORING DEPTH: SURFACE COMPLETION DATE: 12/5/93 DRILLING METHOD(S): HSA. COMPLETION CONTRACTOR/CREW: Empire BORING DIAMETER(S): 8 1/2" BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: 699.182 PROTECTIVE SURFACE CASING: 4"x 4" Steel DIAMETER: LENGTH: TR: DIAMETER: SLOT TYPE: PVC - 40 DIAMETER: LENGTH: SIZE: 001 POINT OF WELL: (SILT SUMP) TYPE: Coment - bento note LENGTH:

SAND PACK:	TSP: 2-#/ 2.5	'-#3 TY	PE: #3 and # 1	LENGTH:	4.0	
SURFACE COLLAF	•	2'x2'	THICKNESS CENTER:	/	THICKNESS EDGE:	′ ′
CENTRALIZER DE DEPTH 1:	PTHS DEPTH 2:		DEPTH 3:		DEPTH 4:	

COMMENTS:

RISER:

SCREEN:

GROUT:

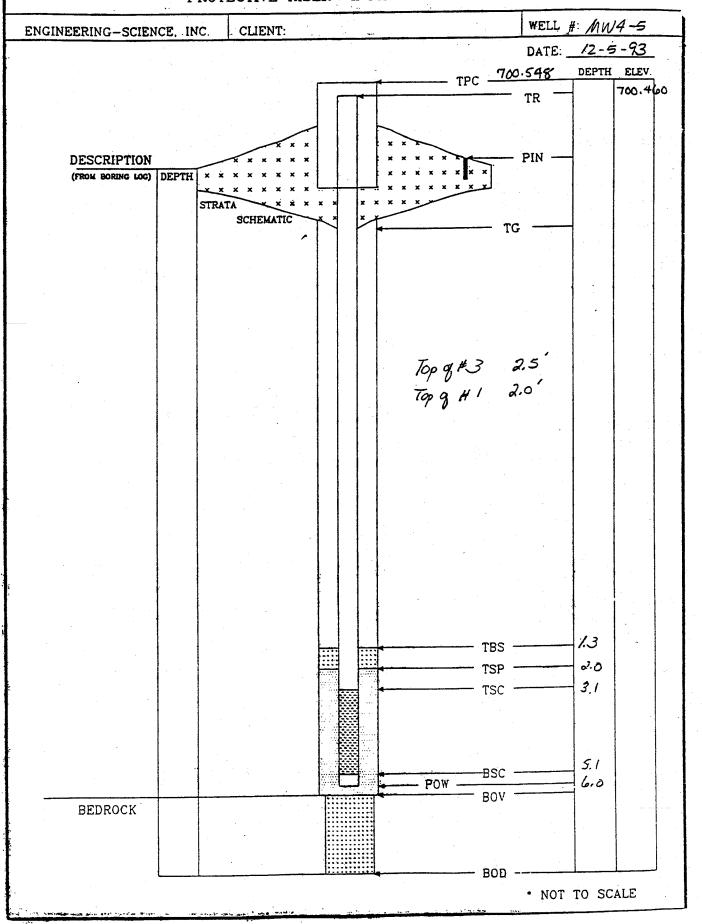
SEAL:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

#### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL



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WELL NUMBER: MW4-6

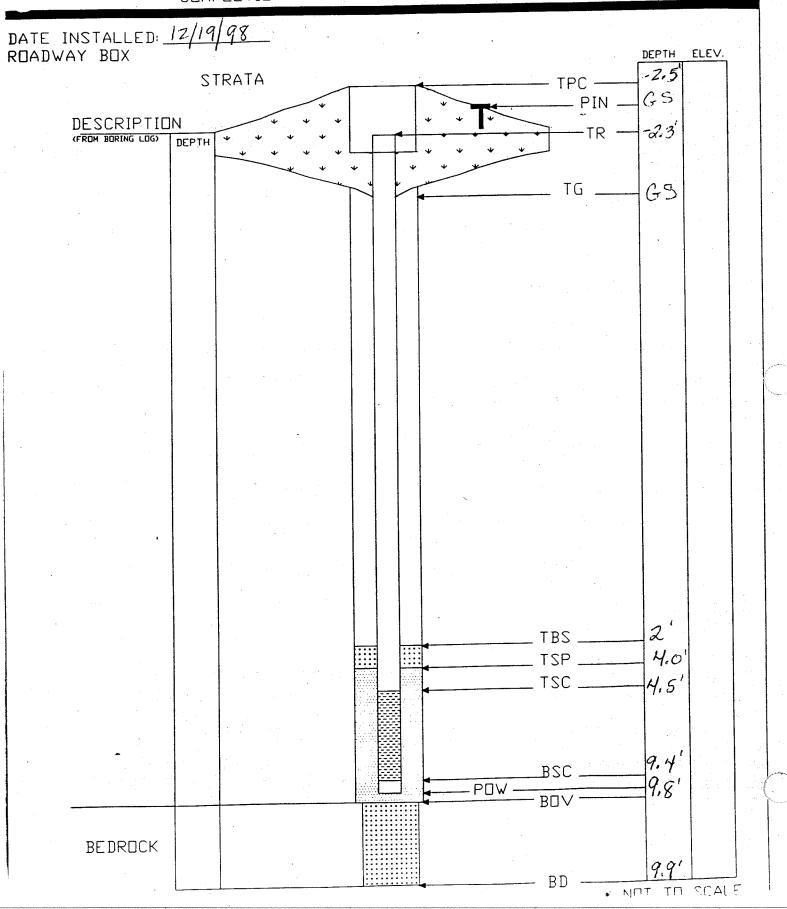
#### OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: LOCATION:	Senera Army Depot Sead 4		PROJECT NO: <u>734539</u> INSPECTOR: <u> </u>	01001
DRILLING CONTRACTOR: DRILLER: DRILLING COMPLETED: BORING DEPTH: DRILLING METHOD(S): BORING DIAMETER(S):	5. Breeds 12/19/98	SUI	POW DEPTH INSTALLATION STARTED ISTALLATION COMPLETED RFACE COMPLETION DATE TION CONTRACTOR/CREW BEDROCK CONFIRMED	: 12/19/98 : 12/19/98 : 14/99 : Maxim/Bacds
ASSOCIATED SWMU/AOC: COORDINATE SYSTEM: DATUM ELEVATIONS: PIN:	: NGVD 1929	NORTHING:	EASTING TPC:	
PROTECTIVE CASING: TYPE:	Steel DIAMET	er: <u>4"</u>	LENGTH: 5'	_
RISER: TR: -2.3'	TYPE: PVC	diameter: <u>a</u> "	LENGTH: 6.8	_
SCREEN: TSC: 4.5'	туре: РИС	diameter: <u>2</u> "	LENGTH: 4,9'	SLOT SIZE: //O
POINT OF WELL:(SILT SUM	P) TYPE: <u>PVC</u>	BSC: <u>9.4</u>	/_ POW: 9.8	-
SURFACE SEAL:	TYPE: Grout	DIAMETER: 2'	THICKNESS:	
GROUT: TG:	GS TYPE:	Sand 4 Griff Gravel	LENGTH: 2'	-
SEAL: TBS: _	2' TYPE:	Bentonite	LENGTH: 2'	
SAND PACK: TSP:	4.0', 4.5' TYPE:	#00,#0	LENGTH: 5.9'	·
COMMENTS:				
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE TR-TOP OF RISER PIN-SURVEYED GROUND TG-TOP OE GROUT BD-BOTTOM OF DRILL HO OV-BASE OF OVERBURI	) SURFACE OLE	* ALL MEASUREMEN	TBS-TOPOF BENT TSP-TOP OF SANI TSC-TOP OF SCRE BSC-BOTTOM OF POW-POINT OF W TS REFERENCED TO GROU	DPACK EEN SCREEN 'ELL

Parsons ES Inc.

WELL: MW 4-6

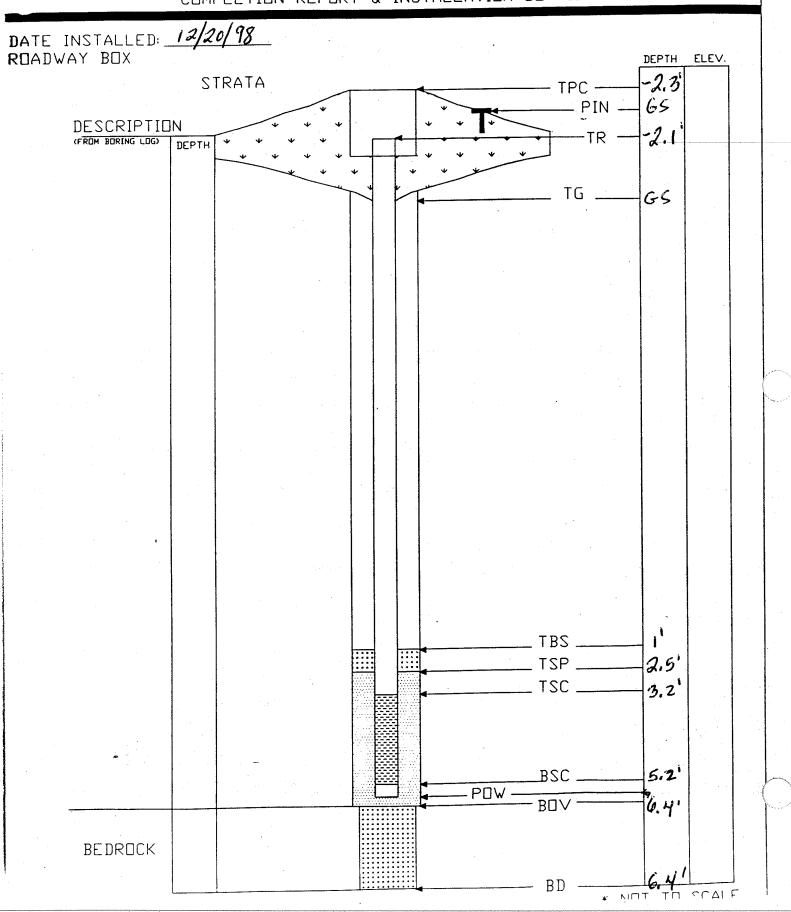
## OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL



WELL NUMBER: MW-1-7

CLIENT/PROJECT: Senera Formy Deport LOCATION: Sead 4	PROJECT NO: 734539 - 01001 INSPECTOR: LLB CHECKED BY:
DRILLING CONTRACTOR: Maxim  DRILLER: S. Breeds  DRILLING COMPLETED: 12/10/93  BORING DEPTH: 6  DRILLING METHOD(S): 44" 454  BORING DIAMETER(S): 3"	POW DEPTH: 6.4'  INSTALLATION STARTED: 13/30/93'  INSTALLATION COMPLETED: 12/30/98'  SURFACE COMPLETION DATE: 17/99  COMPLETION CONTRACTOR/CREW: Maxim/Ricecus  BEDROCK CONFIRMED: Y
ASSOCIATED SWMU/AOC: Sead  COORDINATE SYSTEM:  DATUM: NGVD 1929  ELEVATIONS: PIN: TOC:	NORTHING: EASTING:
PROTECTIVE CASING:  TYPE: Stee / DIAMETER	R: <u>4" LENGTH: 5'</u>
RISER: TR: - 2.1 TYPE: PVC	diameter: 2" length: 5,3'
SCREEN: TSC: 3,2' TYPE: P/C	DIAMETER: $a''$ LENGTH: $a'$ SLOT SIZE: $10$
POINT OF WELL:(SILT SUMP)  TYPE: P ✓ C	BSC: <u>5,2'</u> POW: <u>6'</u>
SURFACE SEAL: TYPE: Grout	DIAMETER: 2' THICKNESS: /'
GROUT: TG: <u>G</u> 5 TYPE: <u>S</u>	and + Grave   LENGTH: 1 18
SEAL: TBS: // TYPE: /	entonite LENGTH: 1,5'
SAND PACK: TSP: <u>0,5', 3,0'</u> TYPE:	F00, #0 LENGTH: 3.5'
COMMENTS:	
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE CASING:  TR-TOP OF RISER  PIN-SURVEYED GROUND SURFACE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL HOLE  BOV-BASE OF OVERBURDEN	TBS-TOPOF BENTONITE SEAL TSP-TOP OF SANDPACK TSC-TOP OF SCREEN BSC-BOTTOM OF SCREEN POW-POINT OF WELL ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

WELL: MW M-7

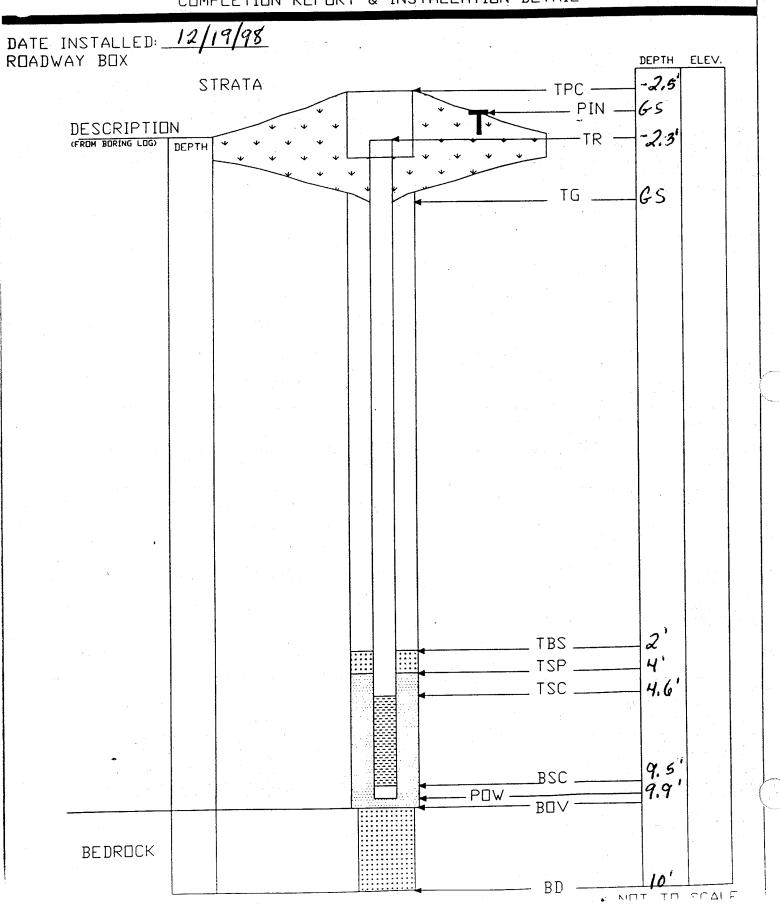


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WELL NUMBER: 1864-8

CLIENT/PROJECT: Senera Aimy Depot LOCATION: Sead 4	PROJECT NO: 734539-01001 INSPECTOR: 21.6 CHECKED BY:
DRILLING CONTRACTOR: Maxim  DRILLER: S. Rieeds  DRILLING COMPLETED: 12/19/98  BORING DEPTH: 10'  DRILLING METHOD(S): 4'4' 454  BORING DIAMETER(S): 8"	POW DEPTH: 9,9'  INSTALLATION STARTED: 12/19/98'  INSTALLATION COMPLETED: 12/19/98'  SURFACE COMPLETION DATE: 14/99'  COMPLETION CONTRACTOR/CREW: Maxim/Rived's  BEDROCK CONFIRMED: Y
ASSOCIATED SWMU/AOC: Send  COORDINATE SYSTEM:  DATUM: NGVD 1929  ELEVATIONS: PIN: TOC:	NORTHING: EASTING:
PROTECTIVE CASING:  TYPE: <u>Stee  </u> DIAMETE	R: 4" LENGTH: 5'
RISER: TR: -2.3 TYPE: PVC	diameter: 2" length: 6.9'
SCREEN: TSC: 4,6' TYPE: PVC	DIAMETER: 2" LENGTH: 4,9' SLOT SIZE: 10
POINT OF WELL:(SILT SUMP)  TYPE: PVC	BSC: <u>9,5</u> POW: <u>10</u>
SURFACE SEAL: TYPE: Grout	DIAMETER: $2'$ THICKNESS: $1'$
GROUT: TG: <u>G</u> 5 TYPE: S	Sand + Grave   LENGTH: 3'
SEAL: TBS: 2' TYPE: ]	Sentonite LENGTH: 2'
SAND PACK: TSP: 4.0', 4.6' TYPE: 3	#00, #0 LENGTH: 6.0'
COMMENTS:	
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE CASING:  TR-TOP OF RISER  PIN-SURVEYED GROUND SURFACE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL HOLE  BOV-BASE OF OVERBURDEN	TBS-TOPOF BENTONITE SEAL TSP-TOP OF SANDPACK TSC-TOP OF SCREEN BSC-BOTTOM OF SCREEN POW-POINT OF WELL ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

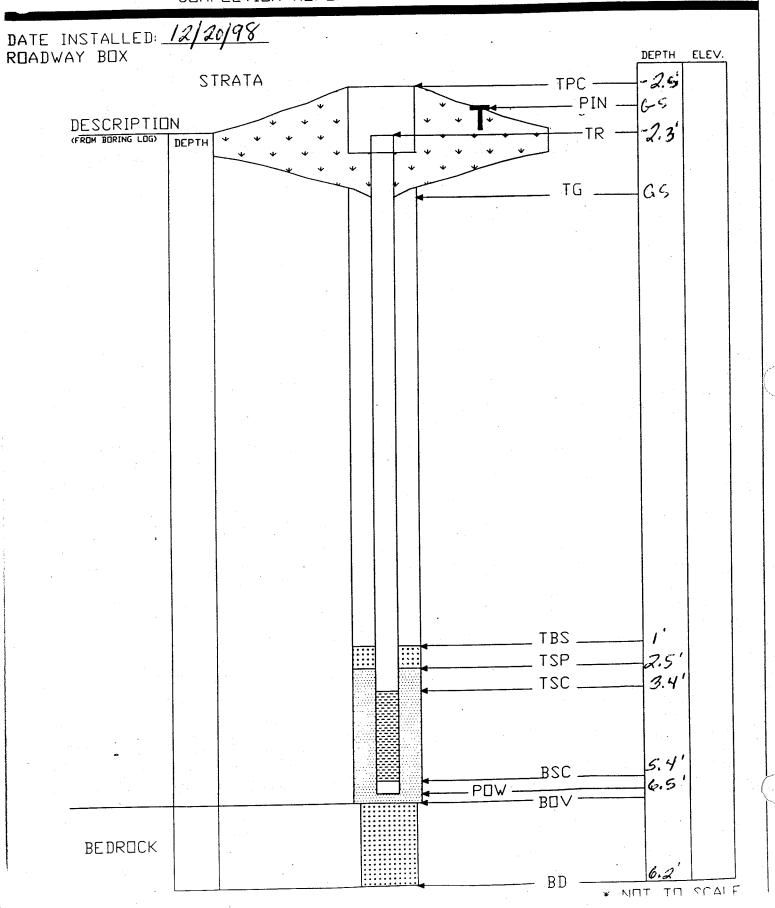
WELL: MW 4-8



WELL NUMBER: MW4-9

CLIENT/PROJECT: Series fing Bept LOCATION: Sead 4	PROJECT NO: 734539-01000 INSPECTOR: LLB CHECKED BY:
DRILLING CONTRACTOR: Maxim  DRILLER: S. Bileds  DRILLING COMPLETED: 12/20/98  BORING DEPTH: 6.2  DRILLING METHOD(S): 4 4" HSA  BORING DIAMETER(S): 8"	POW DEPTH: 6,5'  INSTALLATION STARTED: 12/20/93'  INSTALLATION COMPLETED: 12/20/93'  SURFACE COMPLETION DATE: 14/98  COMPLETION CONTRACTOR/CREW: Maxim/Bicelds  BEDROCK CONFIRMED: Y
ASSOCIATED SWMU/AOC: SEAD  COORDINATE SYSTEM: DATUM: NGVD 1929 ELEVATIONS: PIN: TOC:	NORTHING: EASTING: TPC:
PROTECTIVE CASING:  TYPE: Stee   DIAMETER	:_4"
RISER: TR: -2.3 TYPE: PVC	DIAMETER: $2''$ LENGTH: $5.7'$
SCREEN: TSC: 3.4' TYPE: 7/C	DIAMETER: $2''$ LENGTH: $2'$ SIZE: $10$
POINT OF WELL:(SILT SUMP)  TYPE: PVC	BSC: <u>5,4'</u> POW: <u>6,2'</u>
	DIAMETER: 2' THICKNESS: /'
GROUT: TG: <u>G</u> S TYPE: Sa	and + Gravel LENGTH: 1'
SEAL: TBS: / TYPE: 8	entonite LENGTH: 1,5'
SAND PACK: TSP: 2,5', 3,0' TYPE: #	EDO, # O LENGTH: 3,8'
COMMENTS:	
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE CASING:  TR-TOP OF RISER  PIN-SURVEYED GROUND SURFACE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL HOLE  OV-BASE OF OVERBURDEN  * A	TBS—TOPOF BENTONITE SEAL TSP—TOP OF SANDPACK TSC—TOP OF SCREEN BSC—BOTTOM OF SCREEN POW—POINT OF WELL ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

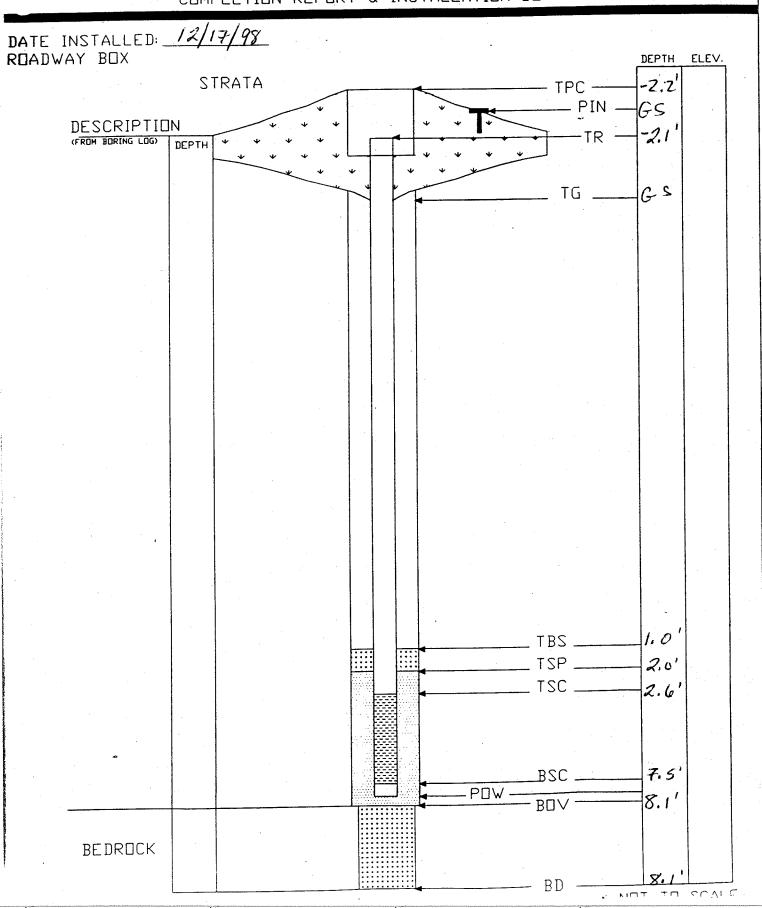
WELL: MW 4-9



WELL NUMBER: MW4-10

CLIENT/PROJECT: Severa Army Depot Seady	PROJECT NO: 734539-01001 INSPECTOR: LL/3 CHECKED BY:
DRILLING CONTRACTOR: Maxim  DRILLER: S. Bireds  DRILLING COMPLETED: 12/14/98  BORING DEPTH: 8.0'  DRILLING METHOD(S): 42," HSA  BORING DIAMETER(S): 8"	POW DEPTH: 8./"  INSTALLATION STARTED: 12/17/98  INSTALLATION COMPLETED: 12/17/98  SURFACE COMPLETION DATE: 17/98  COMPLETION CONTRACTOR/CREW: Maxim/Bixeds  BEDROCK CONFIRMED: Y
ASSOCIATED SWMU/AOC: SEAD  COORDINATE SYSTEM:  DATUM: NGVD 1929  ELEVATIONS: PIN: TOC:	NORTHING: EASTING:
PROTECTIVE CASING:  TYPE: Stee   DIAMETE	R: <u>4"</u> LENGTH: <u>5'</u>
RISER: TR: - 2.1 TYPE: PVC.	DIAMETER: 2" LENGTH: 4.7
screen:  TSC: $2.6'$ Type: $P_{V'C}$	DIAMETER: 2" LENGTH: 4,9' SLOT SIZE: 10
POINT OF WELL:(SILT SUMP)  TYPE: アック	BSC: <u>7. 5′</u> POW: <u>8. 0′</u>
	DIAMETER: 2' THICKNESS: /'
GROUT: TG: <u>← S</u> TYPE: <u>S</u>	and & Grave   LENGTH: 1.0'
SEAL: TBS: /, 0' TYPE: _	Bentonite LENGTH: 1,0'
SAND PACK: TSP: 2,0', 2,5' TYPE:**	60,#0 LENGTH: 6.0'
COMMENTS:	
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE CASING:  TR-TOP OF RISER  PIN-SURVEYED GROUND SURFACE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL HOLE  BOV-BASE OF OVERBURDEN	TBS-TOPOF BENTONITE SEAL TSP-TOP OF SANDPACK TSC-TOP OF SCREEN BSC-BOTTOM OF SCREEN POW-POINT OF WELL ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

WELL: mw 4-10

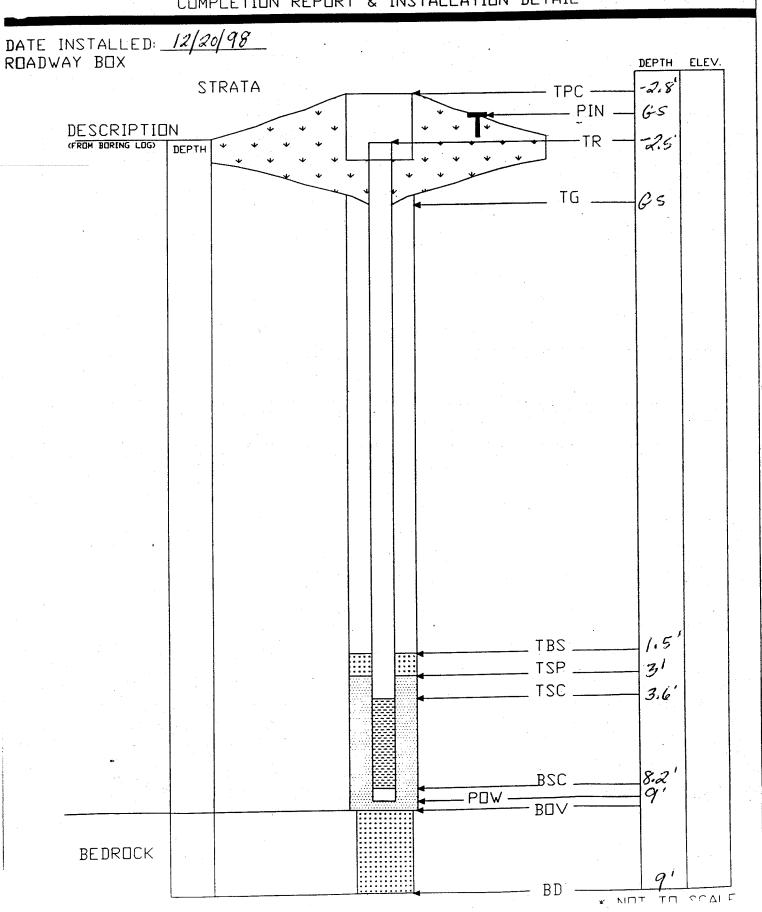


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WELL NUMBER: MW4-11

CLIENT/PROJECT: LOCATION:	Senera Armo	J Depot	PROJE INSPE CHECK	CT NO: 73 ECTOR: 64 ED BY:	34539-0 CB	7/001
DRILLING CONTRACT DRILL DRILLING COMPLET BORING DE DRILLING METHOR BORING DIAMETER	CER: <u>S. Breeds</u> TED: <u>13/20/98</u> PTH: <u>9'</u> O(S): <u>4'4" HS</u>	4	INSTALL SURFACE COMPLETION C	ALLATION ST ATION COMP COMPLETION	PLETED: 70 N DATE: 10 R/CREW: 10	1/20/98 2/20/98
ASSOCIATED SWMU/ COORDINATE SYS DA ELEVATIONS:	TEM: NG	NORTHI VD 1929 TOC:	NG:	TPC:	EASTING: _	
PROTECTIVE CASING		DIAMETER: 4"	L	ength: 5	<i>i</i>	
RISER: TR: -2.	5' TYPE: 1/V	DIAMETE	R: <u>2</u> 4 L	ength: <i>6</i>	5. 1'	
SCREEN: TSC: 3,6'	<u> </u>	OLAMETE	R: <u>2"</u> L	ength: <u>4,</u>	6	SLOT SIZE: /O
POINT OF WELL:(SILT		<i>/</i> B	sc: <u>8.2′</u>	POW:	·/	
SURFACE SEAL:	ТҮРЕ: <u><i>G с (</i></u>	DIAMETEI	R: <u>J'</u>	THICK	NESS:	1'.
GROUT:	TG: <u>6</u> 5	TYPE: Sand + G.	ravel LEN	NGTH: /. (	5′	
SEAL: 7	TBS: //5'	TYPE: Bentonit	<u>LEN</u>	NGTH: /	5'	
SAND PACK:	SP: 3.0', 3.5'	TYPE: #00, #0	LEN	NGTH: 6	.0'	
COMMENTS:						
LEGEND (DEPTH TO) TPC-TOP OF PROTECTR-TOP OF RISER PIN-SURVEYED GROTG-TOP OE GROUT BD-BOTTOM OF DRI	TIVE CASING: OUND SURFACE LL HOLE	* ALL MEAS	UREMENTS REF	TSP-TOP O TSC-TOP O BSC-BOTT POW-POIN	OF BENTON OF SANDPA OF SCREEN OM OF SCR NT OF WELI O GROUND	CK LEEN

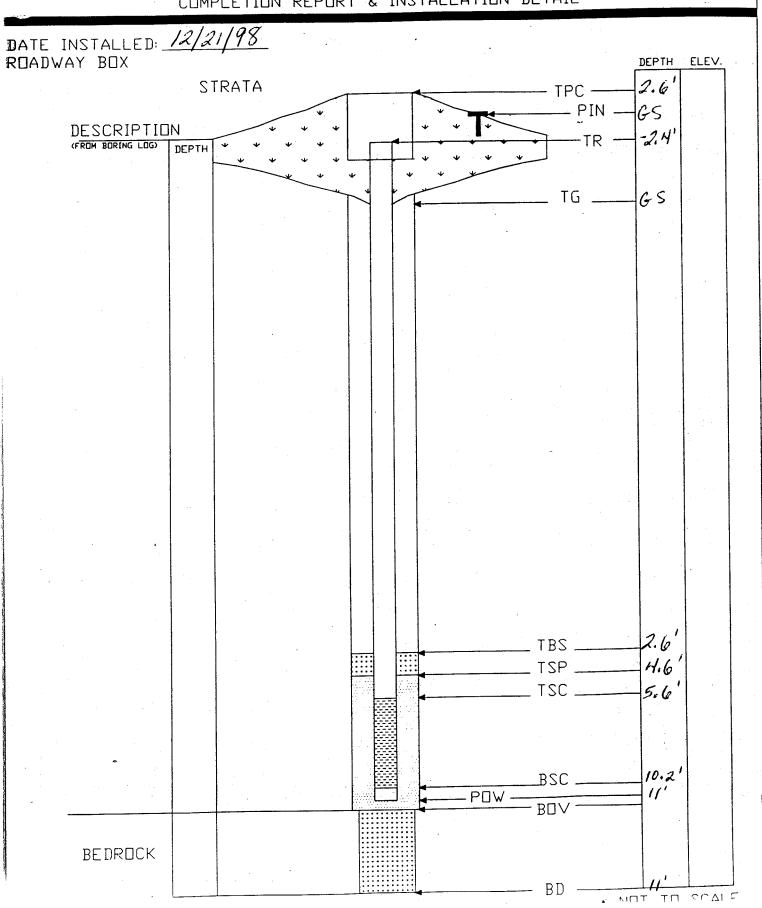
WELL: MW 4-11



WELL NUMBER: MW 4-12

CLIENT/PROJECT: Seneca Hung Deg LOCATION: Sead 4	PROJECT NO: 734539 - 01001 INSPECTOR: 1LB CHECKED BY:
DRILLING CONTRACTOR: Maxim  DRILLER: S. Ripe ds  DRILLING COMPLETED: 12/21/98  BORING DEPTH: 11'  DRILLING METHOD(S): 4'1," HSA  BORING DIAMETER(S): 8"	POW DEPTH: //  INSTALLATION STARTED: 12/21/93/  INSTALLATION COMPLETED: 12/21/93/  SURFACE COMPLETION DATE: 1/4/99  COMPLETION CONTRACTOR/CREW: Maxim/Bixeds  BEDROCK CONFIRMED: Y
ASSOCIATED SWMU/AOC: SEAD  COORDINATE SYSTEM:  DATUM: NGVD 19  ELEVATIONS: PIN: T	NORTHING: EASTING:  29 OC: TPC:
PROTECTIVE CASING:  TYPE: 5tee   DIAM	eter: 4" length: 5'
RISER: TR: -2. 4' TYPE: PUC	DIAMETER: 2" LENGTH: 8.0'
SCREEN: TSC: 5.6 TYPE: PVC	DIAMETER: 2" LENGTH: 4.6' SIZE: 10
POINT OF WELL:(SILT SUMP)  TYPE: PVC	BSC: <u>/0, 2'</u> POW: <u>//</u>
	DIAMETER: 3' THICKNESS: 1'
GROUT: TG: 65 TY	PE: Soud & Grave LENGTH: 2.6'
SEAL: TBS: 2.6' TY	PE: Bentonite LENGTH: 20°
SAND PACK: TSP: 4,6', 5,6' TY	PE: # 00, # 0 LENGTH: 6. 4'
COMMENTS:	
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE CASING:  TR-TOP OF RISER  PIN-SURVEYED GROUND SURFACE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL HOLE  BOV-BASE OF OVERBURDEN	TBS-TOPOF BENTONITE SEAL TSP-TOP OF SANDPACK TSC-TOP OF SCREEN BSC-BOTTOM OF SCREEN POW-POINT OF WELL * ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

WELL: MW 4-12



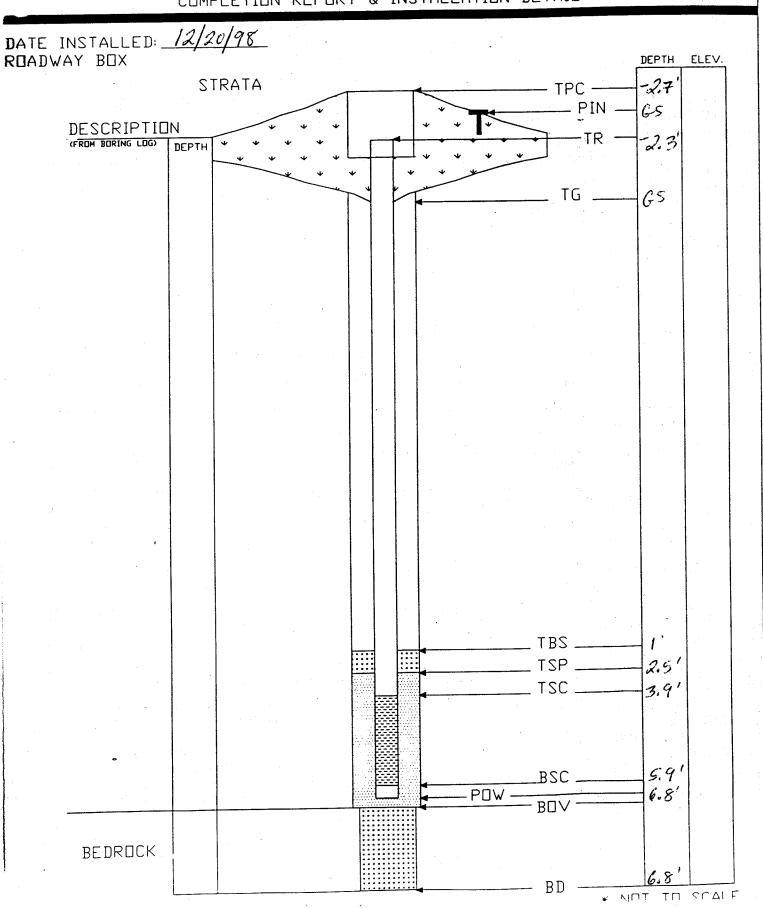
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WELL NUMBER: 116 4-13

CLIENT/PROJECT: LOCATION:	Seneca for Sead 4	ny Dupot		PROJE INSPE CHECK	ECTOR: _	734539 -	01001
DRILLING CONTRACTOR: DRILLER: DRILLING COMPLETED: BORING DEPTH: DRILLING METHOD(S): BORING DIAMETER(S):	S. Breed 12/20/98 6.7' 4 4 4 H		CO	INSTALI SURFACE MPLETION C	ALLATION ATION CO COMPLET CONTRACT	OW DEPTH: I STARTED: OMPLETED: TON DATE: FOR/CREW: ONFIRMED:	12/20/98 12/20/98 117/99 Maxim/Breads
ASSOCIATED SWMU/AOC COORDINATE SYSTEM DATUM ELEVATIONS: PIN	[:	NGVD 1929 TOC:	NORTHING:			EASTING	:
PROTECTIVE CASING: TYPE:	Steel	DIAMETE	R: <i>4"</i>	L	ENGTH: _	5'	
RISER: TR: $-2.3'$	TYPE: _	PVC	DIAMETER:	2" L	ENGTH:	6.2'	
SCREEN: TSC: 3,9'	TYPE:	PVC	DIAMETER:	<i>2"</i> ப	ENGTH: _	2'	SLOT SIZE: /O
POINT OF WELL:(SILT SUM		PVC	BSC:	5.9'	POW:_	6.7'	
SURFACE SEAL:	TYPE: <u>(</u>	rout	DIAMETER:	2'	ТНІ	CKNESS:	1'
GROUT: TG:	G.S	TYPE: S	and + Grasel	LEN	NGTH: _	1'	
SEAL: TBS:	1'	TYPE: 1	Pentantite	LEN	NGTH:	1.5'	
SAND PACK: TSP:	2.51, 3.01	TYPE:	#00, #0	LEN	IGTH: _	4.2'	
COMMENTS:							
LEGEND (DEPTH TO):  TPC-TOP OF PROTECTIVE  TR-TOP OF RISER  PIN-SURVEYED GROUNE  TG-TOP OE GROUT  BD-BOTTOM OF DRILL H  OV-BASE OF OVERBURE	SURFACE	•	ALL MEASURE	MENTS REF	TSP-TC TSC-TC BSC-BC POW-P	POF BENTO P OF SANDE OF OF SCREE OTTOM OF SC OINT OF WE OTO GROUN	ACK IN CREEN LL

WELL:

mw 4-13



#### COMPLETION REPORT OF WELL No. MW5-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/16/94

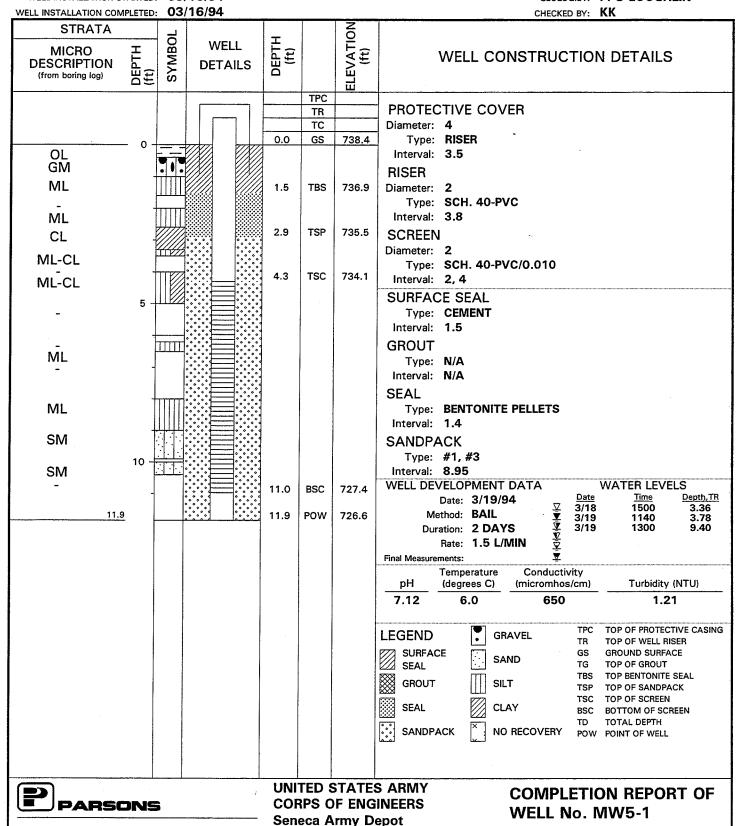
ENGINEERING-SCIENCE, INC.

WELL LOCATION (N/E): 998728.7 750506.4

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 738.4

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW5-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/04/94

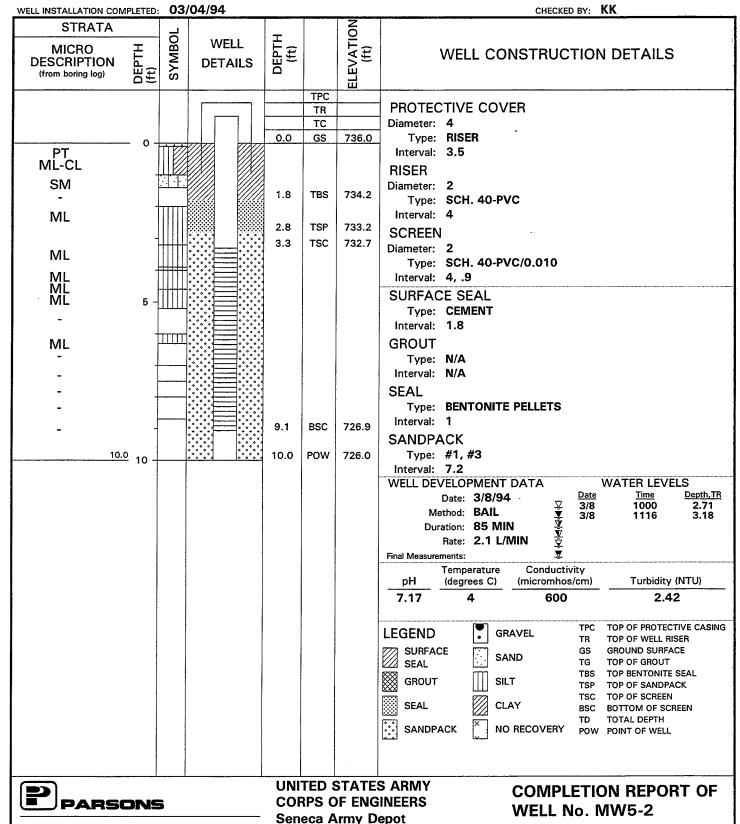
ENGINEERING-SCIENCE, INC.

WELL LOCATION (N/E): 998755.5 750226.3

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 736.0

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### **COMPLETION REPORT OF WELL No. MW5-3**

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS** 

DRILLING METHOD: HOLLOW STEM AUGER

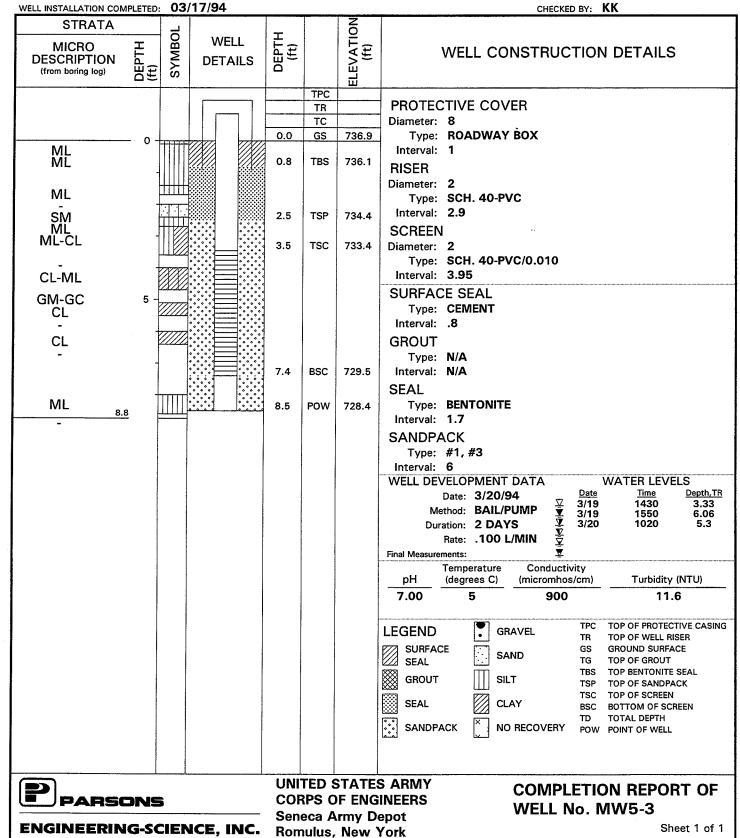
WELL INSTALLATION STARTED: 03/17/94

WELL LOCATION (N/E): 998884.9 750255.7

REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLAN

GROUND SURFACE ELEVATION (ft): 736.9

DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN



	PAGE 1 OF 2
OVERBURDEN W	ONITORING WELL
COMPLETION REPORT	& INSTALLATION DETAIL
PROTECTIVE R	SER COMPLETION
1	OF WELL #: MW/I-1
PROJECT: 10 SWMU -	PROJECT NO:
LOCATION: SEAD -11	INSPECTOR: ES/LB
	CHECKED BY:
DRILLING CONTRACTOR: Empire	
DRILLER: Alan	POW DEPTH: 14,2'
DRILLING COMPLETED: 11/3/93	INSTALLATION STARTED: 11/3/93
BORING DEPTH: 14.2'	INSTALLATION COMPLETED: 11/3 /93
DRILLING METHOD(S): HSA	SURFACE COMPLETION DATE: /1/3/93
BORING DIAMETER(S): 842 1/	COMPLETION CONTRACTOR/CREW: Empire
ASSOCIATED SWMU/AOC:	BEDROCK CONFIRMED (Y/N?)
	ESTIMATED GROUND ELEVATION:
PROTECTIVE SURFACE CASING:	
DIAMETER: 4" Y 4" Stel	LENGTH: 5'
RISER:	
TR: TYPE: PVC-40	DIAMETER: 2" LENGTH:
SCREEN:	SLOT
TSC: 6.1' TYPE: PVC - 40	DIAMETER: 2" LENGTH: 2" SIZE: 001"
POINT OF WELL: (SILT SUMP)	DIAMETER: 2" LENGTH: 2" SIZE: 001"
POINT OF WELL: (SILT SUMP)	
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: 13.5'  GROUT:	POW: 14.2" J.5 Doin-
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3.5'  GROUT:  TG: 6.0 TYPE: W	POW: 14.2 0.5 Doin!
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3,5'  GROUT:  TG:	POW: 14.2 9.5 DO:n-1  17.3 Euren - Length: 3.5  Tage - 2.5 - Length: 1.0
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3,5'  GROUT:  TG:	POW: 14.2 0.5 Doin!
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3,5'  GROUT:  TG:	POW: 14.2 9.5 DO:n-1  17.3 Euren - Length: 3.5  Tage - 2.5 - Length: 1.0
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: P.01  SAND PACK: TSP: 4.6' TYPE: 3  SURFACE COLLAR:	POW: 14.2" 3.5 DO:n-1  2.50 Do:
POINT OF WELL: (SILT SUMP)  TYPE: PVC power BSC: 13.5'  GROUT:  TG: 5.0 TYPE: 200  SEAL: TBS: 3.6' TYPE: Power Surface Collar:  TYPE: 200  TYPE	POW: 14.2 9.5 DO:n=  27.5 DO:n=  27.5 DO:n=  2.5 DO:n=
POINT OF WELL: (SILT SUMP)  TYPE: PVC powif BSC: /3.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: P.01  SAND PACK: TSP: 4.6' TYPE: 3  SURFACE COLLAR:	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 0  HICKNESS CENTER: 1  THICKNESS EDGE: 1
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 5.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: P.01  SAND PACK: TSP: 4.6' 47 TYPE: 4  SURFACE COLLAR:  TYPE: 200 TYPE: 4  CENTRALIZER DEPTHS	POW: 14.2" 3.5 DO:n-1  2.50 Do:
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 5.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: P.01  SAND PACK: TSP: 4.6' 47 TYPE: 4  SURFACE COLLAR:  TYPE: 200 TYPE: 4  CENTRALIZER DEPTHS	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 9  HICKNESS CENTER: 1 THICKNESS EDGE: 1
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: 20  SAND PACK: TSP: 4.6' 5' TYPE: 3  SURFACE COLLAR:  TYPE: 20  TABLE TYPE: 20  TOTALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 9  HICKNESS CENTER: 1 THICKNESS EDGE: 1
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: 20  SAND PACK: TSP: 4.6' 5' TYPE: 3  SURFACE COLLAR:  TYPE: 20  TABLE TYPE: 20  TOTALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 9  HICKNESS CENTER: 1 THICKNESS EDGE: 1
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: 20  SAND PACK: TSP: 4.6' 5' TYPE: 3  SURFACE COLLAR:  TYPE: 20  TABLE TYPE: 20  TOTALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 9  HICKNESS CENTER: 1 THICKNESS EDGE: 1
POINT OF WELL: (SILT SUMP)  TYPE: PVC point BSC: 13.5'  GROUT:  TG: 8.0 TYPE: 20  SEAL: TBS: 3.6' TYPE: 20  SAND PACK: TSP: 4.6' 5' TYPE: 3  SURFACE COLLAR:  TYPE: 20  TABLE TYPE: 20  TOTALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 14.2 3.5 DO: n=  18.8 Ear Ear 2 LENGTH: 50  TOP 3 3 5 = LENGTH: 1.0  Silica LENGTH: 0  HICKNESS CENTER: 1  THICKNESS EDGE: 1

SEE PAGE 2 FOR SCHEMATIC

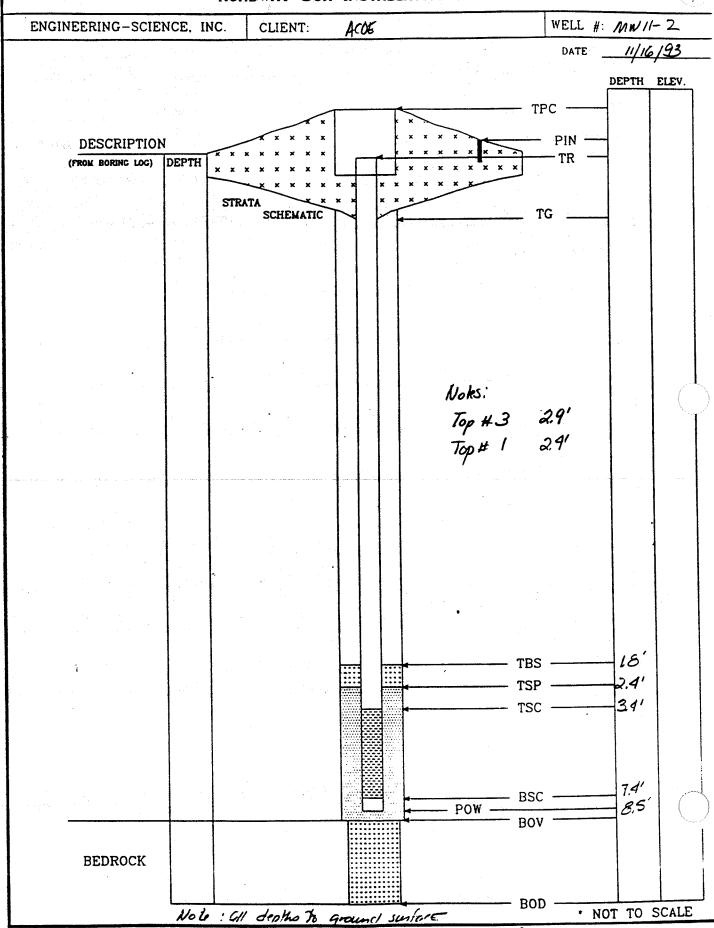
PAGE 1 OF 2

### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

WELL #: MW/(- ) ACOE ENGINEERING-SCIENCE, INC. CLIENT: DATE: \_ DEPTH ELEV. TPC TR PIN DESCRIPTION (FROM BORING LOG) DEPTH SCHEMATIC Note: Top of #3 sand Top of #1 sord Total Scien- 7' Bottom - 5' screen Top - Q' Screen Connection - 0.4' 6.1 TSC POW BOV **BEDROCK** BOD . NOT TO SCALE depths measured from ground surface.

OVEDBIIDDEN	PAGE 1 OF 2
OVERBURDEN	MONITORING WELL
COMPLETION REPORT	T & INSTALLATION DETAIL
KOADWAY BOX -	SURFACE COMPLETION
	ACOE WELL #: MW/1-2
PROJECT: 10 SWMU	PROJECT NO:
LOCATION: SEAD 11	INSPECTOR: ES
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH: 8,5
DRILLER: John W.	INSTALLATION STARTED: 11/16/93
DRILLING COMPLETED: 11/16/93	
BORING DEPTH: 8,5	
DRILLING METHOD(S): HSA	COMPLETION CONTRACTOR (CROSS)
BORING DIAMETER(S): 8 1/2 "	
ASSOCIATED SWMU/AOC: //	BEDROCK CONFIRMED (Y/N?)
PROTECTIVE SURFACE CASING:	ESTIMATED GROUND ELEVATION:
_	
DIAMETER: 4"x1" STRC	LENGTH:
RISER:	
TR: TYPE: PVC-40	DIAMETER: 2" LENGTH:
SCREEN:	TOJE
TSC: 34 TYPE: PVC-40	DIAMETER: 112" LENGTH: 4' SIZE: 0.01"
POINT OF WELL: (SILT SUMP)	
TYPE: PVC POINT BSC: 7, 4	now 6.5'
GROUT:	POW: <u>8.5</u>
^	
TG: Ground TYPE:	ament-benjamite LENGTH: 1/8
SEAL: TBS: /8' TYPE: /	contant pellets LENGTH: 0.6'
0.1	
SURFACE COLLAR:	13 + # / LENGTH: 6, 7'
	THICKNESS CENTER: '/' - THICKNESS EDGE: /'
CENTRALIZER DEPTHS	
DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:
2014	
COMMENTS:	
All Depression	· · · · · · · · · · · · · · · · · · ·
EE PAGE 2 FOR SCHEMATIC	UREMENTS REFERENCED TO GROUND SURFACE

# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL



OVEDDIDDEN M	ONITODING TURK						
OVERBURDEN MONITORING WELL							
	E INSTALLATION DETAIL						
	SER COMPLETION						
ENGINEERING-SCIENCE, INC. CLIENT:	WELL #: MW-11-3						
PROJECT: 10-Swmu	PROJECT NO:						
LOCATION: SEAD :11	INSPECTOR: FS/LB						
	CHECKED BY:						
DRILLING CONTRACTOR: Empire	POW DEPTH: 90'						
DRILLER: A	INSTALLATION STARTED: _11/4 /93						
DRILLING COMPLETED: 11/4/43	installation completed: 11/5/93						
BORING DEPTH: 9.0'	SURFACE COMPLETION DATE: 11/5/93						
DRILLING METHOD(S):	COMPLETION CONTRACTOR/CREW:						
BORING DIAMETER(S): 842 "	BEDROCK CONFIRMED (Y/N?)						
ASSOCIATED SWMU/AOC:	ESTIMATED GROUND ELEVATION:						
PROTECTIVE SURFACE CASING:							
DIAMETER: 4"x4" Steel	LENGTH: 4'- total length						
RISER:	-						
TR: TYPE: PVC-40	DIAMETER: 2" LENGTH:						
SCREEN:	SLOT						
TSC: 3.9 TYPE: <u>PVC-40</u>	DIAMETER: 2" LENGTH: 4.0' SIZE: 0.01"						
POINT OF WELL: (SILT SUMP)							
TYPE: PYC point BSC: 7.9'	POW: 9.0' 11' betw. Pow and BSC.						
GROUT:							
TG: NA TYPE:	LENGTH:						
SEAL: TBS: <u>new surface</u> Type: <u>ben</u>	tonite pullets LENGTH: 24'						
SAND PACK: TSP: 24 - # 1 29 # 3 TYPE: # 3	and #   LENGTH: <u>6.6'</u>						
SURFACE COLLAR:	•						
TYPE: <u>Coment</u> RADIUS: 2'x2' T	111C(A)ESS CEATED //						
	HICKNESS CENTER: / THICKNESS EDGE: /						
CENTRALIZER DEPTHS	HICKNESS CENTER: 1' THICKNESS EDGE: 1'						
CENTRALIZER DEPTHS							
	DEPTH 3: DEPTH 4:						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2: COMMENTS:  Will screen is 4.0'  Depth to Pow from BSC 1.1'	DEPTH 4:  J note Change						
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2: COMMENTS:  Will screen is 4.0'  Depth to Pow from BSC 1.1'	DEPTH 3: DEPTH 4:						

PAGE 1 OF 2

### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

WELL #: MWII-3 ENGINEERING-SCIENCE, INC. CLIENT: DATE: \_ DEPTH ELEV. TR DESCRIPTION PIN (FROM BORING LOC) DEPTH TG Notes: Top # 3 Sand 2.9' Top # 1 Sand 2.4' Protect. Casing! 2.5' Shekup 1.5' into ground 1.0' Cut off to refusinfacE TSP 2.4 TSC ' 3.9 40' Screen. 1.1 6000 70 POW 25 BOV BEDROCK All depths measured from ansumed since . NOT TO SCALE

PAGE 1 OF 2 OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: WELL #: MW/1-4 PROJECT: 10 SWMU PROJECT NO: LOCATION: DEAD -11 INSPECTOR: E/S / LB CHECKED BY: DRILLING CONTRACTOR: EMPIRE POW DEPTH: 10,5 DRILLER: INSTALLATION STARTED: 11/4/93 DRILLING COMPLETED: 11/4/93 INSTALLATION COMPLETED: BORING DEPTH: 10.5 SURFACE COMPLETION DATE: DRILLING METHOD(S): COMPLETION CONTRACTOR/CREW: Empire HSA BORING DIAMETER(S): 81/2" BEDROCK CONFIRMED (Y/N?) \_\_\_y ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: PROTECTIVE SURFACE CASING: DIAMETER: 4"x4" Steel LENGTH: 29' Stickup RISER: TYPE: PYC-40 DIAMETER: 2" LENGTH: SCREEN: TSC: 4.8 SIZE: 0.01 POINT OF WELL: (SILT SUMP) TYPE: PYC point 9.8' BSC: POW: 10.5' 0.5' Point GROUT: TG: TYPE: Com- ben bonito LENGTH: SEAL: 28' TBS: TYPE: bentonite pellets LENGTH: SAND PACK: 3.3' TYPE: #3 and #1 LENGTH: SURFACE COLLAR: TYPE: Cerred RADIUS: 2/2 THICKNESS CENTER: / ' THICKNESS EDGE: / CENTRALIZER DEPTHS DEPTH 1: -DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_ COMMENTS: \* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

WELL #: ACOE MW11-4 ENGINEERING-SCIENCE, INC. CLIENT: DATE: DEPTH TPC TR DESCRIPTION PIN (FROM BORING LOG) DEPTH ground Noks: Top of # 3 Sand 3.8' Top of # 1 sand 3.3' Prot. Casing dipth 25' Shick up 2.5' 2.8 TBS 3.3 48° 5.4 TSC .2 connection <del>-B</del>SC POW 10.5 BOV **BEDROCK** - BOD deptho measured from ground surber · NOT TO SCALE

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SO	CIENCE, INC.	CLIENT:				WELL#- N	11./// - 25	
PROJECT: SEAD -				PI	ROJECT NO:	WELL#: MW11-5		
	ca Army Depot		-	INSPECTOR:				
	<del></del>		-		ECKED BY:			
DRILLING CONTRACTOR:	Perret	+ Wolfe				0 5	,	
DRILLER:	-	Tedd Merch		POW DEPTH:			9.5'	
DRILLING COMPLETED:	10/2	0	•	INSTALLATION STARTED: INSTALLATION COMPLETED:			1 / 06 26 / 00	
BORING DEPTH:	11.0	(		SURFACE COMPLETION DATE:				
DRILLING METHOD(S):	HSA			ION CONTRACT		Paret	27/08 + Wolfe	
BORING DIAMETER(S):		et .		ROCK CONFIRM	•	Y		
ASSOCIATED SWMU/AOC:	SEA	D - 11		ED GROUND EI	•			
PROTECTIVE SURFACE CAS	SING:							
	DIAMETER:	4.0	LENGTH:	4',2"	<b></b>	TOR:	+2.6	
RISER:								
TOC: _ + 2.5	TYPE:	2" Sched. 40	DIAMETER:	2."	LENGTH:	6.74	,	
SCREEN:		PVC					SLOT	
TSC: 4,24	TYPE:		DIAMETER:	_ 2"-	LENGTH:	4.58	SIZE: O.O.O	
POINT OF WELL: (SILT SUMP	)					,		
YPE: Point - PVC	BSC:	8.82	POW	9.5				
GROUT:								
TG:	+ 0.5	TYPE: (	Quickcrete	LENGTH:		2,25		
SEAL: TBS:	71.75			***************************************				
		TYPE:	Bentonite	LENGTH:		2.0'		
SAND PACK: TSP:	-4,25	TYPE:	© Ø Ø *:	LENGTH A	bove Sc).	0.83		
SURFACE COLLAR:							-	
TYPE: Quickerete	RADIUS:	2.0	THICK	NESS CENTER:	1.35	THICKNES	SS EDGE: 0,25	
CENTRALIZER DEPTHS							1	
DEPTH 1: N/A	DEPTH 2:	N/A	DEPTH 3	:_ N/A		DEPTH 4:	NA	
COMMENTS:						,		
		ALL DEPTH ME	ASUREMENT:	S REFERENCET	TO GROU	ND SURFACE		
SEE PAGE 2 FOR SCHEMA					10 01100	JOIN ACL		

PAGE 1\_OF\_2

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SC	IENCE, INC.	CLIENT:				WELL#: M	W11-6	
PROJECT: SEAD -11	ee/ca	W-14-11-11-11-11-11-11-11-11-11-11-11-11-	_	PR	ROJECT NO:	734543	5-01001	
LOCATION: Serece Army Depot			_	n	NSPECTOR: _	KKS		
		•		СН	ECKED BY: _			
DRILLING CONTRACTOR:	Parret W	lel fe		Po	OW DEPTH:	8.08	1	
DRILLER:	Todd in			NSTALLATION	STARTED:	10/26	100	
DRILLING COMPLETED:	10/26	100	INST	ALLATION CO	OMPLETED:	10/26/00		
BORING DEPTH:	8.5	1	SURF	ACE COMPLET	TION DATE: _	10/27/00		
DRILLING METHOD(S):	HSA		COMPLETI	ON CONTRACT	TOR/CREW:	P+W - Todd brench		
BORING DIAMETER(S):	10 "		BEDR	OCK CONFIRM	MED (Y/N?)	γ		
ASSOCIATED SWMU/AOC:	SEAD	-11	ESTIMATE	D GROUND E	LEVATION:			
PROTECTIVE SURFACE CASI	NG:							
	DIAMETER: _	4" I D	LENGTH:	42		TOR:	+2.52	
riser: , Toc: +2,42	TYPE:	PUC	DIAMETER:	2.	LENGTH:	5,25 (7	oc) -	
SCREEN:		0.1.6	·				SLOT	
TSC: 2.82	TYPE: _ i	Nive way	DIAMETER:	2"	LENGTH: _	4.58	SIZE: <u>∅,01∂</u>	
POINT OF WELL: (SILT SUMP)								
YPE: PVC POIN	BSC:_	7.40	POW:	8.08			:	
GROUT:								
TG:	+ 0.25	TYPE	: Quickerete	LENGTH:		1.5	•	
SEAL: Envisoply TBS:	1.32'		: Bentonte			1.0"		
SAND PACK: TSP:	- 2.60 2.32	·	: 0/00	LENGTH:	Above TSC _	0.5		
SURFACE COLLAR:		,		**************************************				
TYPE: Quickerite	RADIUS:	2.0	THICK	NESS CENTER	1.5	THICKNES	S EDGE: 0.5	
CENTRALIZER DEPTHS								
DEPTH 1: <u>\(\rangle\)/A</u>	DEPTH 2:	N/A	DEPTH 3:	N/A	_	DEPTH 4:	N/A	
COMMENTS:								
	*	ALL DEPTH M	IEASUREMENT:	S REFERENCE	D TO GROU	ND SURFACE		
SEE PAGE 2 FOR SCHEMAT	ПC			_				

H:\ENG\SENECA\FORMS\MWOBPR.XLS

8.08

10.4

FIGURE A-8

#### OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL**

PROTECTIVE RISER COMPLETION

							<u> </u>	
PARSONS ENGINEERING SCIENCE, INC.   CLIENT:						WELL#: M	W11-7	
PROJECT: SEAD-11 0=/ca		_	PROJECT NO:					
LOCATION: Sens	eca Army I	)epot		INSPECTOR:				
				CH	ECKED BY:			
DRILLING CONTRACTOR:	Parret	+ Wolfe		P	OW DEPTH:	÷ 5,2	5'	
DRILLER:	Todd	Merch	_	INSTALLATION STARTED:			10/26/00	
DRILLING COMPLETED:	10/26	100	_ IN	INSTALLATION COMPLETED:		10/26/00		
BORING DEPTH:	<i>6.</i>	0 '	SUI	RFACE COMPLE	TION DATE:	10/27/00		
DRILLING METHOD(S):	HSA	•	COMPLE	TION CONTRAC	TOR/CREW:	P+W Toda		
BORING DIAMETER(S):			BEI	ROCK CONFIR	MED (Y/N?)	· ·		
ASSOCIATED SWMU/AOC:	SEAD	-11	ESTIMAT	ED GROUND E	LEVATION:			
PROTECTIVE SURFACE CAS	ING:							
	DIAMETER:	4.0 T	<b>D</b> LENGTH	42		TOR:	2.66	
RISER:		Puc						
TOC: _ + 2.55	TYPE:	Select. 40	DIAMETER	= <u>2"</u>	LENGTH:	5.05	÷	
SCREEN:		PUC					SLOT	
TSC: 2.5	TYPE:		DIAMETER	2"	LENGTH:	2,6	SIZE: 0.010	
POINT OF WELL: (SILT SUMP)					•	,		
YPE: PVC-Flat		5.10	POV	v: <u>5.25</u> °		•		
GROUT:								
TG:	+ 0.25	TYPE:	Quekeret	LENGTH:		1.35		
SEAL: TBS:	-1.1'		Bentocite	******		1.5		
	-1.6		0		11	183		
SAND PACK: TSP:	<u> </u>	TYPE:	00	LENGTH	TSC).			
SURFACE COLLAR:	:	7					<b>+</b> =	
TYPE: Quickacte	RADIUS:	2.0	THIC	KNESS CENTER	: <u> 1.35                                    </u>	THICKNES	s edge: 0, 25	
CENTRALIZER DEPTHS DEPTH 1: N/A	D.D.D.			,			1.	
DEFIN I. N/A	DEPTH 2:	N/A	DEPTH	3: <u>N/A</u>	<del></del>	DEPTH 4:	N/A	
COMMENTS:								
•								
· · · · · · · · · · · · · · · · · · ·	,	* ALL DEPTH MI	EASUREMEN	reference	D TO GROU	ND SURFACE		
SEE PAGE 2 FOR SCHEMA	TIC		-					

#### COMPLETION REPORT OF WELL No. MW12A-1

ENGINEERING-SCIENCE, INC.

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

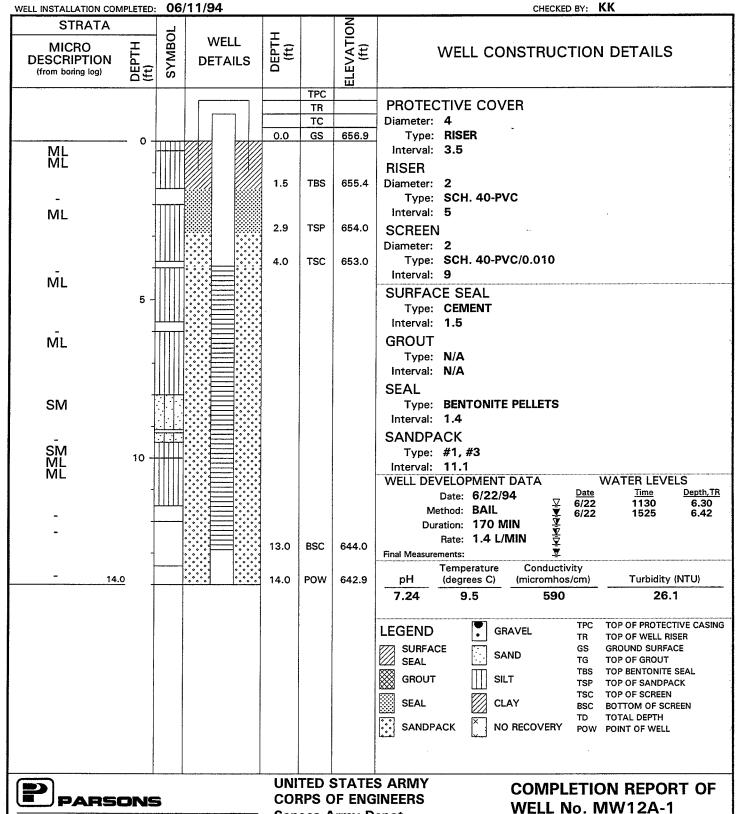
WELL INSTALLATION STARTED: 06/10/94

WELL LOCATION (N/E): 1015496.7 745165.9

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 656.9

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



Seneca Army Depot

#### COMPLETION REPORT OF WELL No. MW12A-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 06/11/94

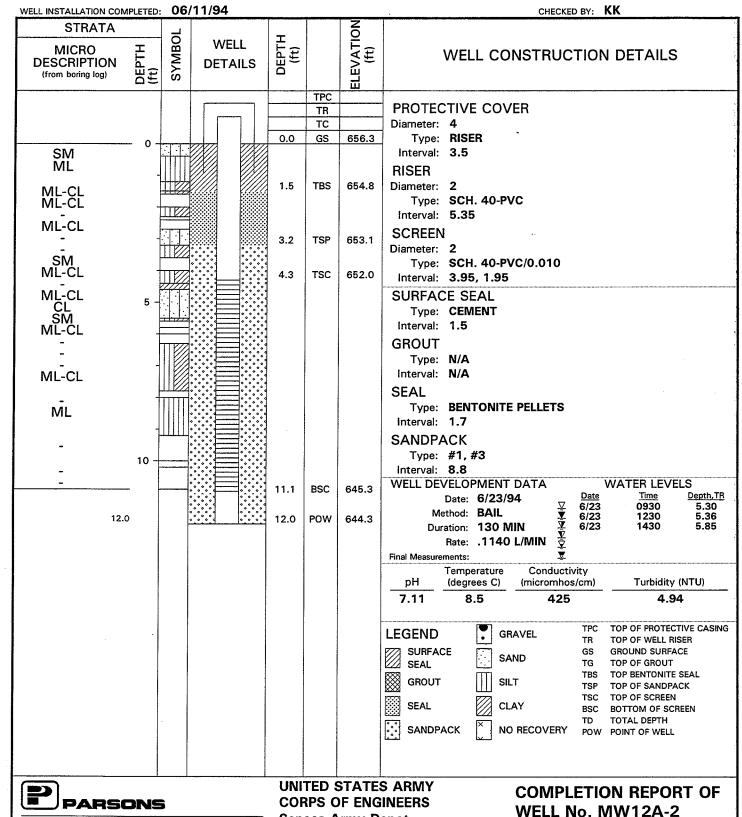
ENGINEERING-SCIENCE, INC.

WELL LOCATION (N/E): 1015117.5 744926.6

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 656.3

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



Seneca Army Depot

#### COMPLETION REPORT OF WELL No. MW12A-3

ENGINEERING-SCIENCE, INC.

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 06/12/94

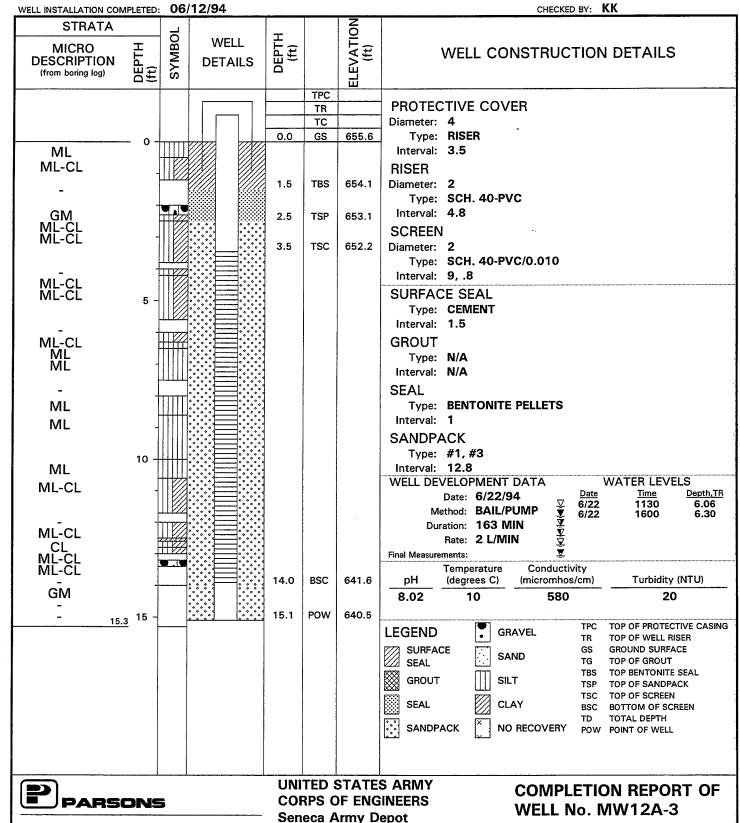
WELL LOCATION (N/E): 1015521.5 744532.2

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 655.6

**DATUM: NAD 1983** 

GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW12B-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 06/13/94

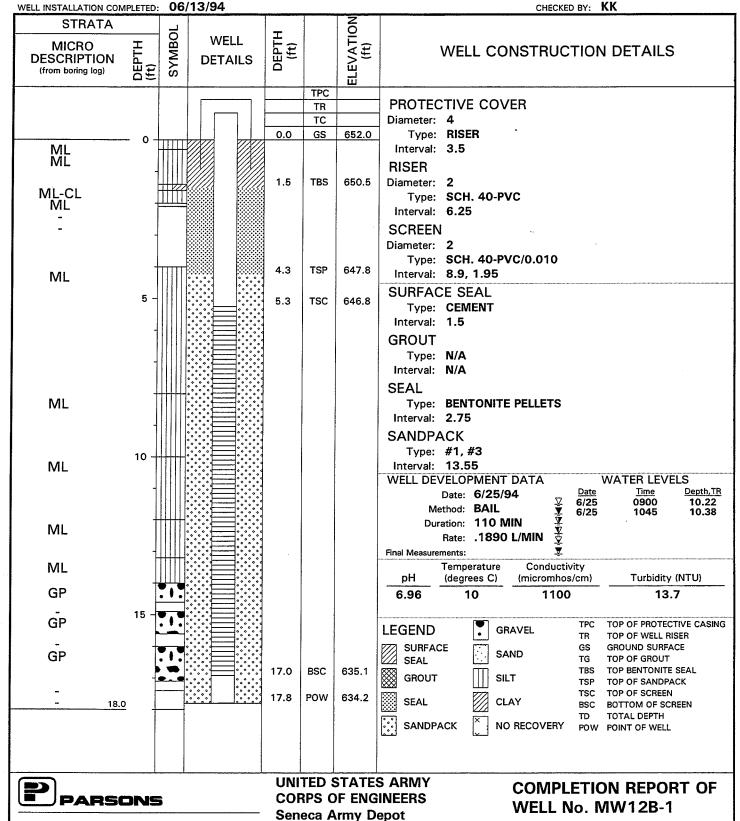
**ENGINEERING-SCIENCE, INC.** 

WELL LOCATION (N/E): 1015934.0 743739.7

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 652.0

DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW12B-2

**ENGINEERING-SCIENCE, INC.** 

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 06/12/94

WELL LOCATION (N/E): 1015919.8 743522.9

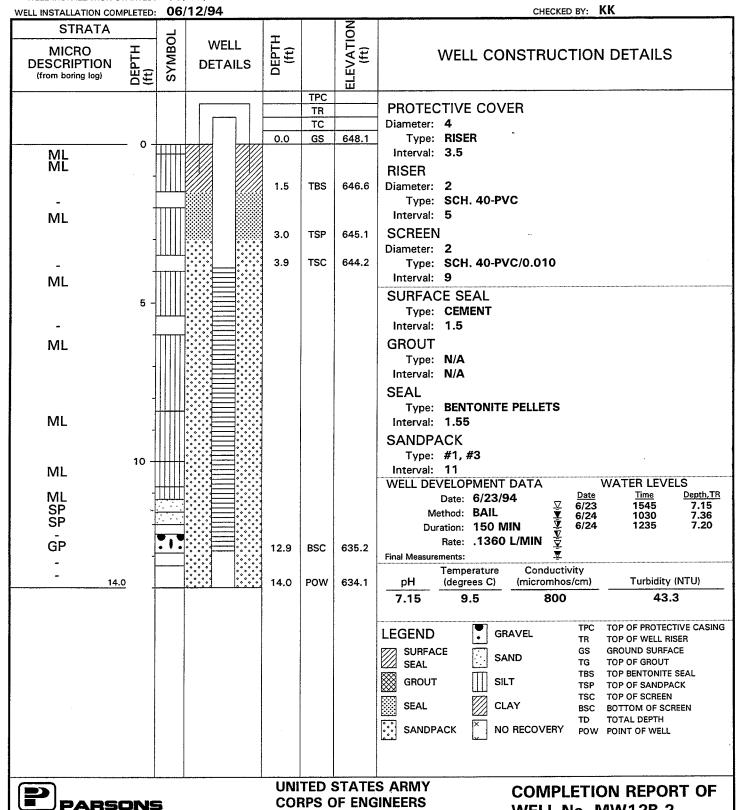
REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 648.1

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN

WELL No. MW12B-2

Sheet 1 of 1



Seneca Army Depot

#### COMPLETION REPORT OF WELL No. MW12B-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

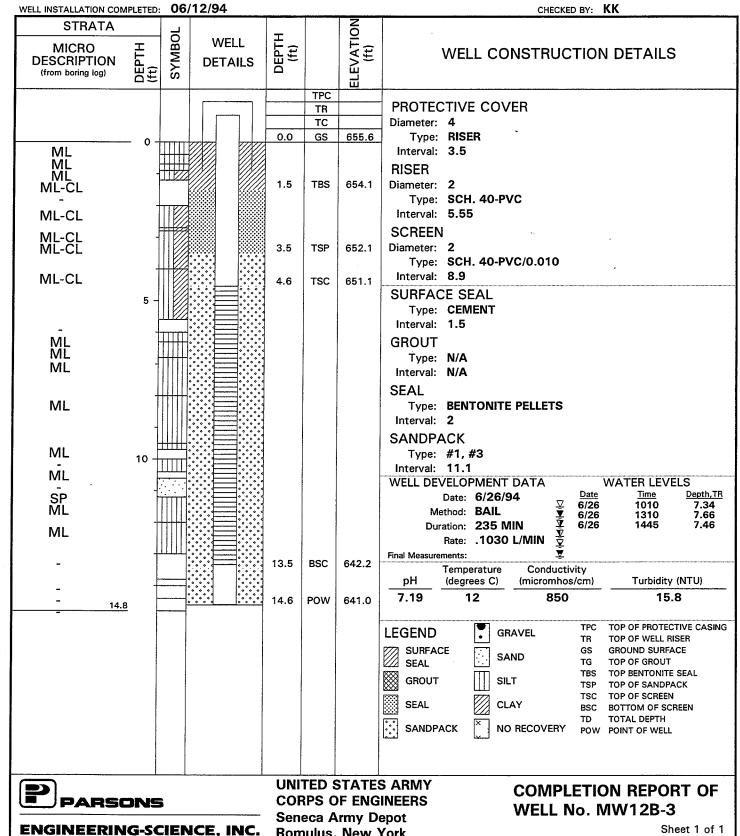
WELL INSTALLATION STARTED: 06/12/94

WELL LOCATION (N/E): 1015995.8 743517.1

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 655.6

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### **TEMPORARY WELL COMPLETION REPORT: MW12-3**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 11/6/97 WELL INSTALLATION COMPLETED 11/6/97

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

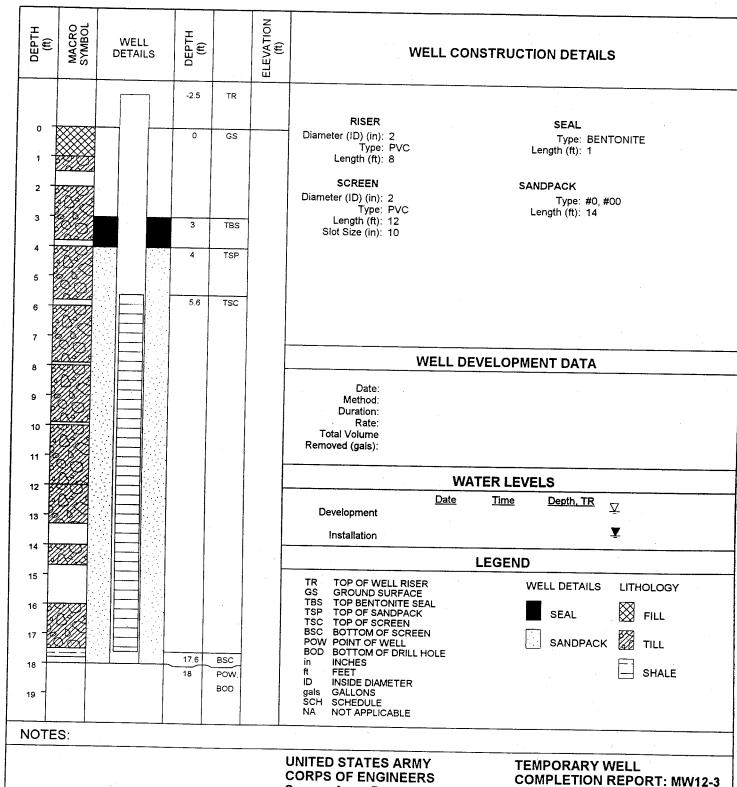
**TOTAL DEPTH: 18** DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: EAF CHECKED BY:



Seneca Army Depot Romulus, New York

PAGE 1 OF 2 OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION Parsons ES Inc. CLIENT: Senera Army Depit WELL #: MW12-4 Sead-12 NI/FS PROJECT NO: 730047 - 01001 INSPECTOR: FAF CHECKED BY: DRILLING CONTRACTOR: POW DEPTH: /2.4 ( BGs) Maxim Tech INSTALLATION STARTED: 11/5/97 DRILLER: John Warner 11/4/97 INSTALLATION COMPLETED: 11/5/97 DRILLING COMPLETED: 12.4 (BGS) BORING DEPTH: SURFACE COMPLETION DATE: 11/7/99 444 HSA COMPLETION CONTRACTOR/CREW: Maxim Tech DRILLING METHOD(S): BORING DIAMETER(S): BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: Sead-12 PROTECTIVE SURFACE CASING: DIAMETER: LENGTH: RISER: TR: -2,5 TYPE: Sih Yl pu DIAMETER: LENGTH: SCREEN: SLOT TSC: 4,77 TYPE: Sch 40 PUC LENGTH: 7,21 SIZE: O.OIO POINT OF WELL: (SILT SUMP) TYPE: Sumo POW: 12,2 GROUT: None TG: TYPE: LENGTH: SEAL: TYPE: Bentenite chip LENGTH: mne # 00 SAND PACK: TSP: TYPE: LENGTH: SURFACE COLLAR: TYPE: Concrete RADIUS: THICKNESS EDGE: 4 THICKNESS CENTER: CENTRALIZER DEPTHS None DEPTH 1: DEPTH 2: DEPTH 3:

\*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

COMMENTS:

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/28/98 WELL INSTALLATION COMPLETED 10/28/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 13.6 DEPTH TO WATER:

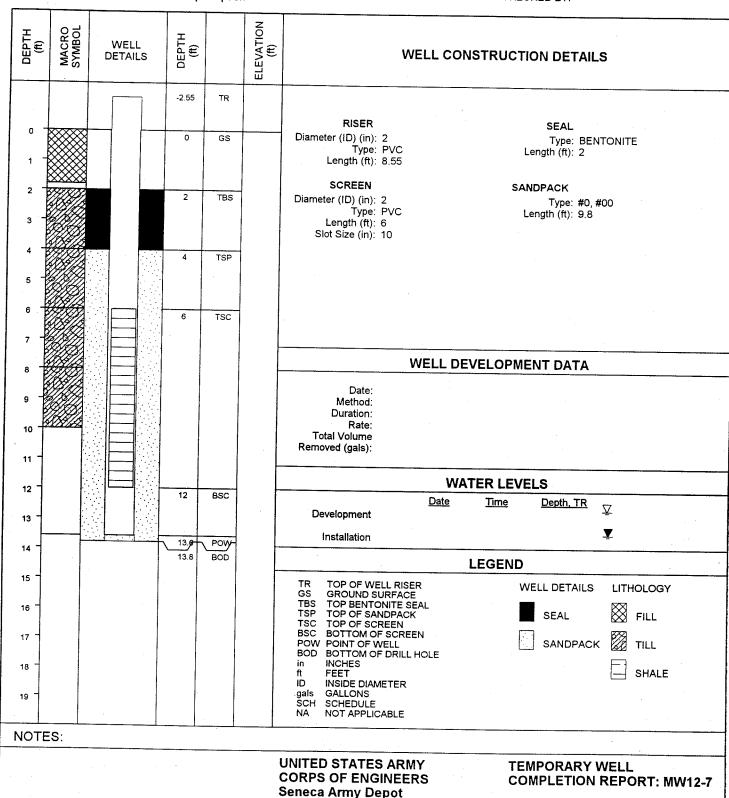
BORING LOCATION:

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** INSPECTOR: TGH

CHECKED BY:



Romulus, New York

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047 WELL INSTALLATION STARTED: 10/28/98

WELL INSTALLATION COMPLETED 11/2/98 DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8"

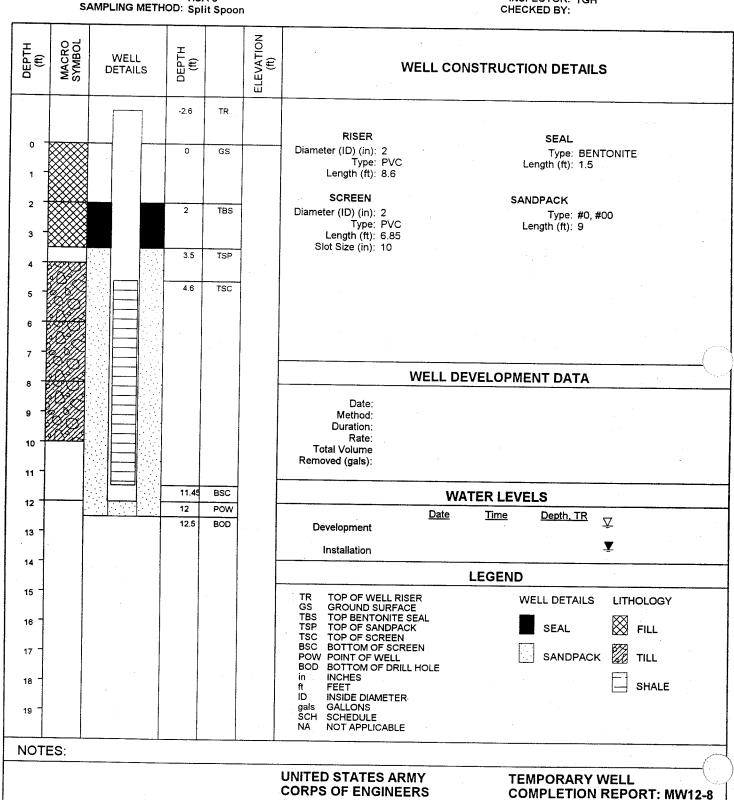
**TOTAL DEPTH: 12** DEPTH TO WATER: **BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** INSPECTOR: TGH

CHECKED BY:



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/17/98 WELL INSTALLATION COMPLETED 10/17/98 DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon TOTAL DEPTH: 14.1

DEPTH TO WATER: BORING LOCATION:

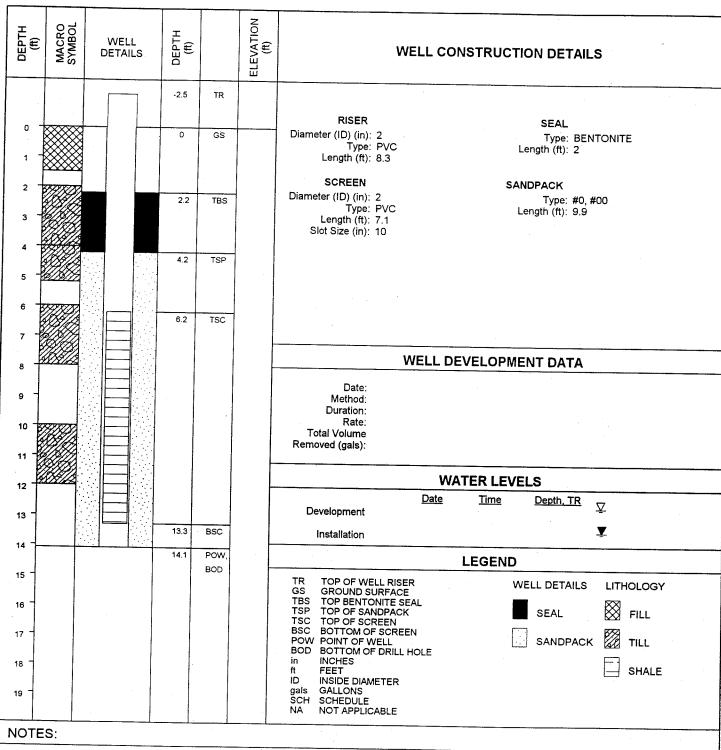
COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION: **ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:

**TEMPORARY WELL** 

**COMPLETION REPORT: MW12-9** 



UNITED STATES ARMY

**CORPS OF ENGINEERS** 

PROJECT: SEDA

JECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 9/29/98
WELL INSTALLATION COMPLETED 9/30/98
DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"

TOTAL DEPTH: 17.1 DEPTH TO WATER: BORING LOCATION:

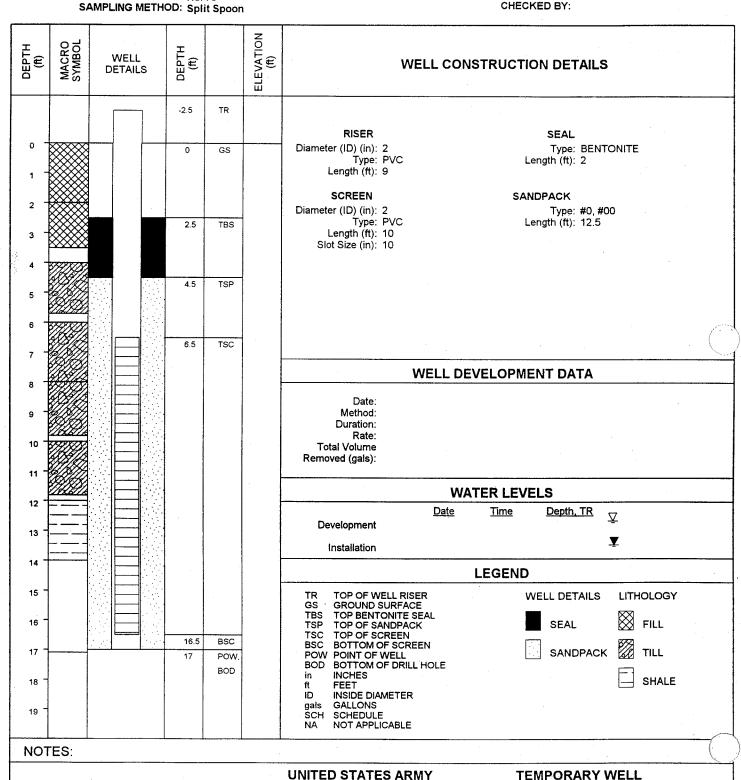
COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

ELEVATION DATUM: NAVD1927

INSPECTOR: ITR CHECKED BY:

**COMPLETION REPORT: MW12-10** 



**CORPS OF ENGINEERS** 

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047
WELL INSTALLATION STARTED: 10/29/98 WELL INSTALLATION COMPLETED 10/29/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

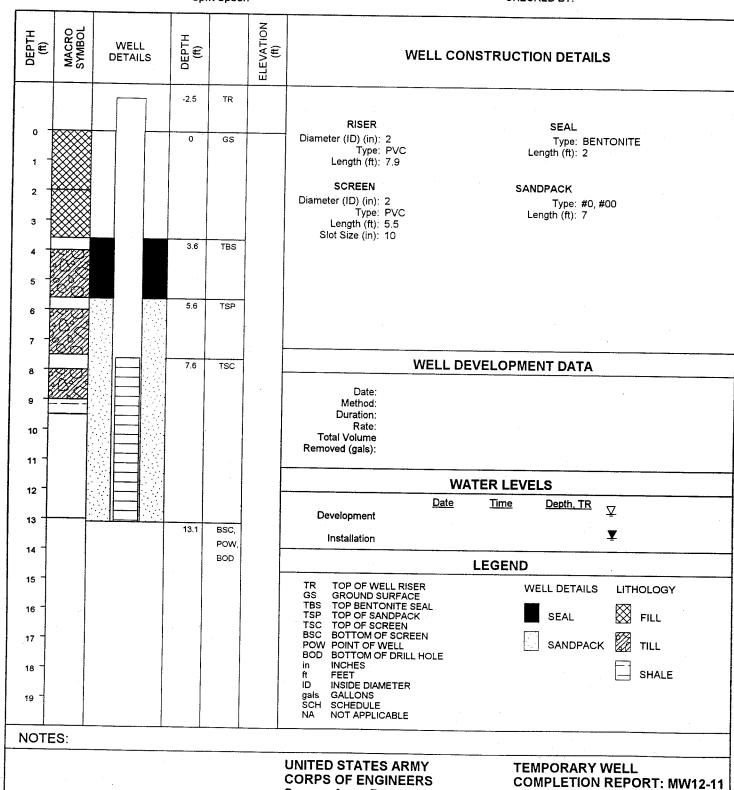
TOTAL DEPTH: 13 DEPTH TO WATER: **BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/6/98 WELL INSTALLATION COMPLETED 10/6/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

**TOTAL DEPTH: 13** DEPTH TO WATER: BORING LOCATION:

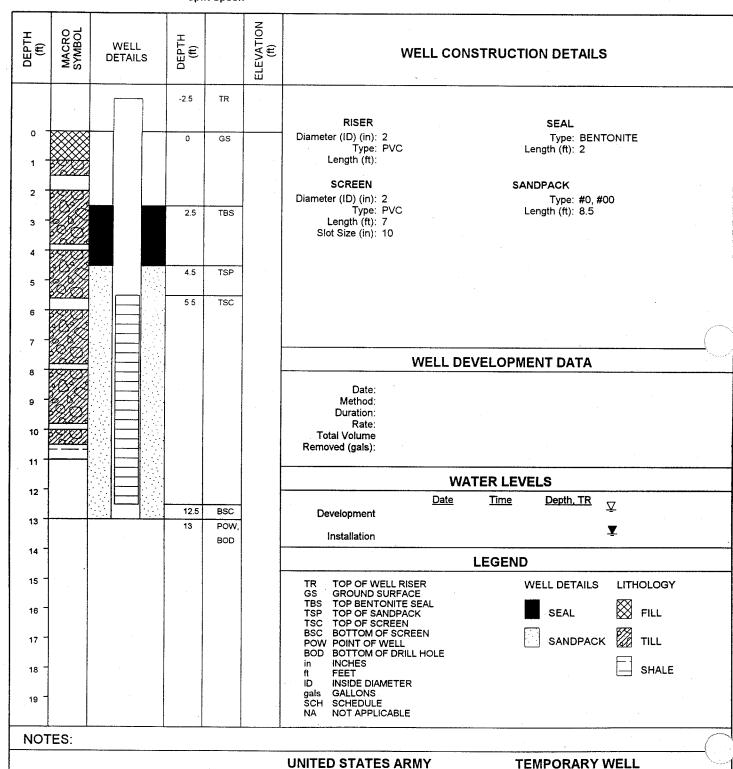
COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

**COMPLETION REPORT: MW12-12** 

INSPECTOR: ITR CHECKED BY:



**CORPS OF ENGINEERS** 

PROJECT: SEDA

PROJECT: SEDA
PROJECT LOCATION: Seneca Army Depot, Romulus, New York
ASSOCIATED AREA/UNIT: SEAD 12
PROJECT NO.: 730047
WELL INSTALLATION STARTED: 10/1/98
WELL INSTALLATION COMPLETED 10/1/98
DRILLING CONTRACTOR: 10/1/98

DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 13 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:

	-: 2.110 M2 111		nt Spoon	ŀ		CHE	CKED BY:	
DEPTH (ft) MACRO SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CO	NSTRUCT	ION DETAILS	
		-2.8	TR					
					RISER		SEAL	
°		0	GS		Diameter (ID) (in): 2		Type: BENTONITE	
1					Type: PVC Length (ft): 10.3		Length (ft): 2	
2 800000					SCREEN		NDPACK	
		2	TBS		Diameter (ID) (in): 2 Type: PVC		Type: #0, #00	
3 - 4					Length (ft): 7.5	I	_ength (ft): 9	
4 88900					Slot Size (in): 10			
		4	TSP					
5 7								
6		5.5	TSC					
7 - 2/2/2								
				-	WELLD	EVEL ORM		
8				F	WELL DI	EVELOPM	ENIDAIA	
9 2/1/2/2					Date: Method:			
===					Duration: Rate:			
10 7					Total Volume Removed (gals):			
11					(gaio).			
12				L	WA	ATER LEVI	ELS	
40					<u>Date</u> Development	<u>Time</u>	Depth, TR	
13		13	POW,		Installation		<b>T</b> .	
14			BOD	-	modulatori			
15				F	TO TOO 1	LEGEND		
					TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL	<u>v</u>	VELL DETAILS LITHOLOGY	
16					TSP TOP OF SANDPACK TSC TOP OF SCREEN		SEAL FILL	
17					BSC BOTTOM OF SCREEN POW POINT OF WELL		SANDPACK TILL	ł
18				.	BOD BOTTOM OF DRILL HOLE in INCHES			
· <del>-</del>					ft FEET ID INSIDE DIAMETER		SHALE	
19					gals GALLONS SCH SCHEDULE			.
NOTEC					NA NOT APPLICABLE			
NOTES:								7
				(	JNITED STATES ARMY CORPS OF ENGINEERS Seneca Army Depot	CO	MPORARY WELL MPLETION REPORT: MV	W12-13
				1	Romulus, New York			

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/15/98
WELL INSTALLATION COMPLETED 10/21/98

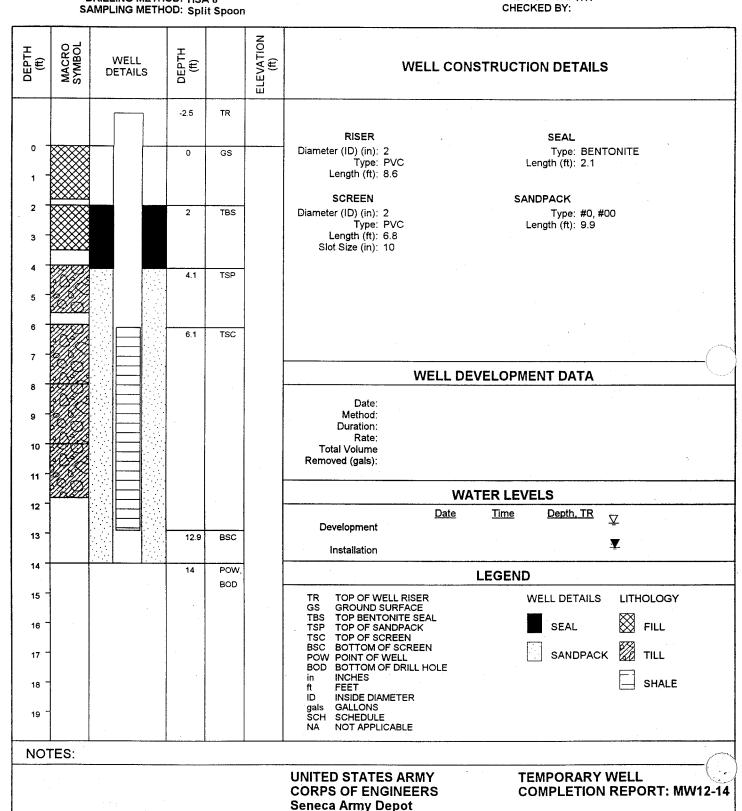
DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"

TOTAL DEPTH: 14
DEPTH TO WATER:
BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

ELEVATION DATUM: NAVD1927 INSPECTOR: ITR CHECKED BY:



Romulus, New York

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION

Parsons ES Inc. CLIENT:	enera Henry Depot WELL #: MW12-15					
PROJECT: Senew Sead-12 RIJFS	PROJECT NO: 730097 -01001					
LOCATION: North of disposed pit X	$\frac{75009 + -67061}{10000000000000000000000000000000000$					
J. J. C.	CHECKED BY: DRG					
DRILLING CONTRACTOR: Maxim Tell						
	POW DEPTH: 13.1					
- TOOTICY DUST	INSTALLATION STARTED: 10/1/98					
DRILLING COMPLETED: 10/1/98	INSTALLATION COMPLETED: _/0/1/98					
BORING DEPTH: 13.1 (BCs)	SURFACE COMPLETION DATE: 10/5/98					
DRILLING METHOD(S): 4 1/4 HSA  BORING DIAMETER(S): 8"	COMPLETION CONTRACTOR/CREW: Maxim					
	BEDROCK CONFIRMED (Y/N?)					
ASSOCIATED SWMU/AOC: SEAD - 12_	ESTIMATED GROUND ELEVATION:					
PROTECTIVE SURFACE CASING:						
DIAMETER:	LENGTH: 5'					
RISER:						
TR: 2.6' TYPE: PK 51440	DIAMETER: 2 LENGTH: /0					
SCREEN:	SLOT					
TSC: 5.4 (BLG) TYPE: Sch.40 px	DIAMETER: 2" LENGTH: 7.2' SIZE: 0.010"					
POINT OF WELL: (SILT SUMP)						
<b>TYPE:</b> <u>5υπρ</u> <b>BSC:</b> <u>12.6 (β(x5)</u>	POW: 13.1 (BCES)					
GROUT: None 1.91 (Bas) Gel) TG: Salace (0.0 Bas) TYPE:						
SEAL: TBS: 1,9 BGS TYPE:	Bentanite chy? LENGTH: 21					
	morie de LENGTH: 8.7'					
SURFACE COLLAR:						
TYPE: Convete / Binton, & RADIUS: 2	THICKNESS CENTER: / THICKNESS EDGE: 4"					
CENTRALIZER DEPTHS None.						
DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:					
COMMENTS:						
SOMME(175)						
	1					
ALL DEDOLLAGE	UREMENTS REFERENCED TO GROUND SURFACE					

PAGE 1 OF 2

#### **TEMPORARY WELL COMPLETION REPORT: MW12-16**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/17/98
WELL INSTALLATION COMPLETED 10/17/98

DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 14.2 DEPTH TO WATER:

COORDINATE SYSTEM: NAD83

BORING LOCATION:

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

**TEMPORARY WELL** 

**COMPLETION REPORT: MW12-16** 

INSPECTOR: ITR CHECKED BY:

ELEVATION (ft) MACRO SYMBOL DEPTH (ft) DEPTH (ft) WELL WELL CONSTRUCTION DETAILS **DETAILS** -2 45 TR RISER SEAL 0 0 GS Diameter (ID) (in): 2 Type: BENTONITE Type: PVC Length (ft): 2 Length (ft): 8.85 SCREEN SANDPACK Diameter (ID) (in): 2 Type: #0, #00 2.4 TRS Type: PVC Length (ft): 9.8 Length (ft): 7 Slot Size (in): 10 4.4 TSP TSC WELL DEVELOPMENT DATA Date: Method: Duration: Rate: 10 Total Volume Removed (gals): 11 WATER LEVELS 12 **Date** Time Depth, TR  $\nabla$ Development 13 ¥ Installation 13.4 BSC 14 14.2 POW **LEGEND** BOD 15 TOP OF WELL RISER WELL DETAILS LITHOLOGY GROUND SURFACE TOP BENTONITE SEAL TOP OF SANDPACK GS TBS 16 SEAL TSP TOP OF SCREEN TSC BSC BOTTOM OF SCREEN SANDPACK TILL 17 POW POINT OF WELL
BOD BOTTOM OF DRILL HOLE
IN INCHES 18 SHALE FEET INSIDE DIAMETER GALLONS 19 SCH SCHEDULE NOT APPLICABLE NOTES:

**UNITED STATES ARMY** 

**CORPS OF ENGINEERS** 

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/17/98
WELL INSTALLATION COMPLETED 10/17/98
DRILLING CONTRACTOR: Maxim

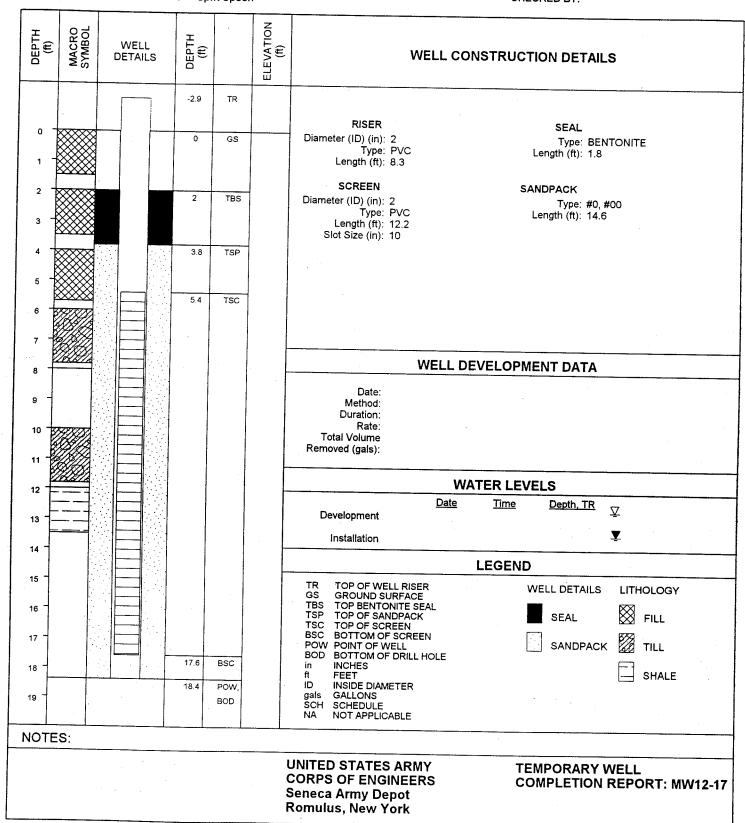
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 18.4
DEPTH TO WATER:
BORING LOCATION:

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

ELEVATION DATUM: NAVD1927 INSPECTOR: ITR



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/2/98
WELL INSTALLATION COMPLETED 10/2/98 DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 14.5 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:

DEPTH (ft)	MACRO	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONS	STRUCTION DETAILS	
			-2.5	TR				
0 -						RISER	SEAL	
1 -			0	GS		Diameter (ID) (in): 2 Type: PVC Length (ft): 8.5	Type: BENTONITE Length (ft): 2	
2	****					SCREEN	SANDPACK	
3 -			2.5	TBS		Diameter (ID) (in): 2 Type: PVC Length (ft): 7.3 Slot Size (in): 10	Type: #0, #00 Length (ft): 10	
5			4.5	TSP				
6			6	700				
7 -				TSC				(
						WELL DEV	/ELOPMENT DATA	
9 -						Date: Method: Duration: Rate: Total Volume Removed (gals):		
				-		WAT	FER LEVELS	
12						<u>Date</u> Development	Time Depth, TR <sub>∑</sub>	···
13			13.3	BSC		Installation	Ţ	
14 -							LEGEND	
15			14.5	POW, BOD		TR TOP OF WELL RISER	WELL DETAILS LITHOLOGY	
16						GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK	SEAL FILL	
17 -						TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL	SANDPACK TILL	
18 <sup>-</sup>						BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS. SCH SCHEDULE	SHALE	
						NA NOT APPLICABLE		
NOT	TES:		<del> </del>		- 4			_(```
						UNITED STATES ARMY CORPS OF ENGINEERS	TEMPORARY WELL COMPLETION REPORT: MW	12-18

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/3/98 WELL INSTALLATION COMPLETED 10/3/98

DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

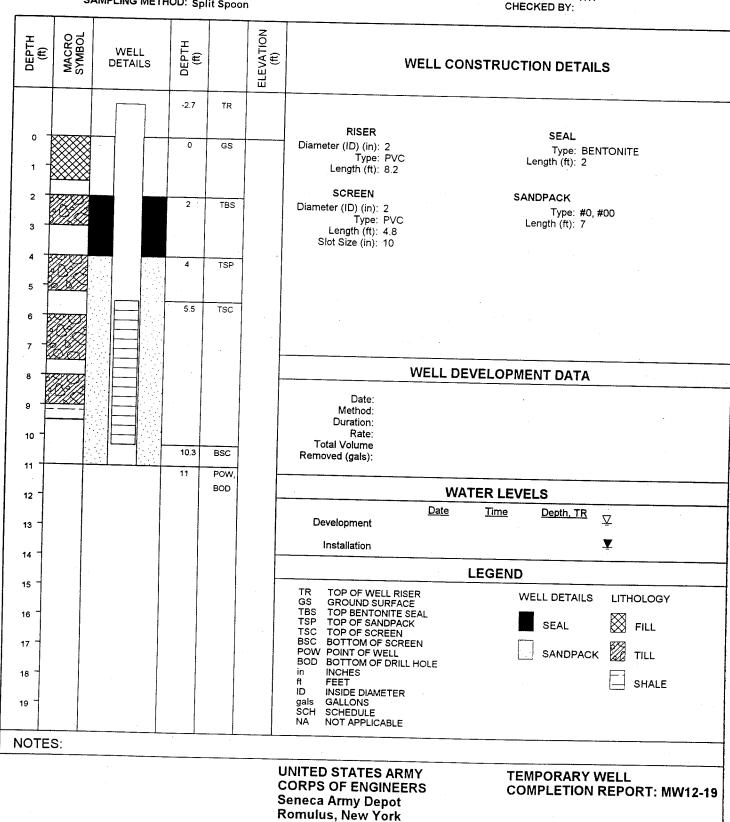
TOTAL DEPTH: 11 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/3/98
WELL INSTALLATION COMPLETED 10/3/98

DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

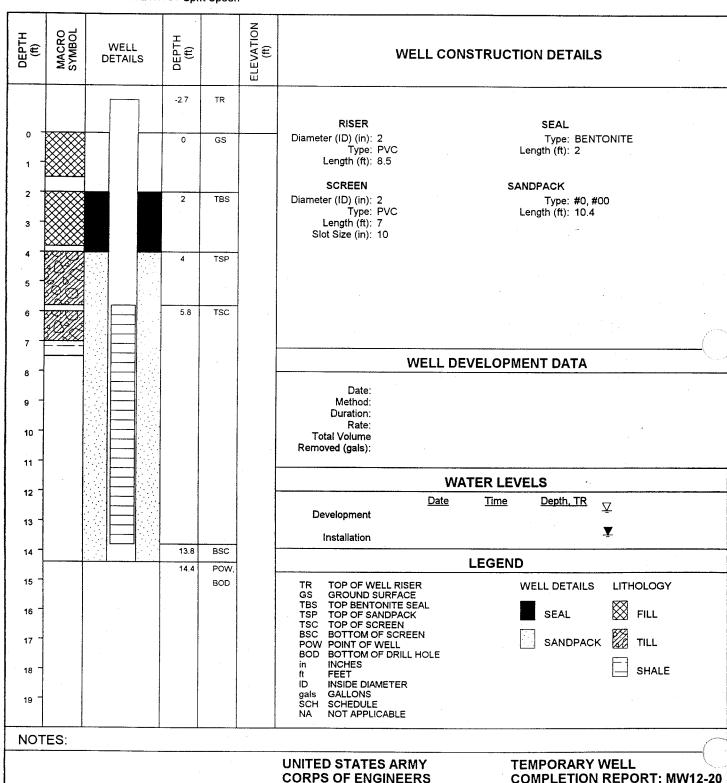
TOTAL DEPTH: 14.4 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR



PROJECT: SEDA
PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047 WELL INSTALLATION STARTED: 10/3/98 WELL INSTALLATION COMPLETED 10/3/98 DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 11.2 DEPTH TO WATER:

BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

ELEVATION DATUM: NAVD1927

INSPECTOR: ITR CHECKED BY:

DEPTH (ft)	MACRO	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAIL	s
			-2.9	TR			
0						RISER SEAL	
1			0	GS		Diameter (ID) (in): 2 Type: BEN Type: PVC Length (ft): 2 Length (ft): 8.3	TONITE
2			2	TBS		SCREEN SANDPACK Diameter (ID) (in): 2 Type: #0.1	
3 -						Diameter (ID) (in): 2 Type: #0, # Type: PVC Length (ft): 7 Length (ft): 4.75 Slot Size (in): 10	<b>\$00</b>
4			4	TSP			
5 -							
6 -			5.6	TSC			
7 -							
8 -					.	WELL DEVELOPMENT DATA	
.9						Date: Method: Duration:	
10 -			10.35	BSC		Rate: Total Volume Removed (gals):	
			11.2	POW, BOD	ľ	WATER LEVELS	
12						<u>Date</u> <u>Time</u> <u>Depth, TR</u> Development	<u> </u>
13 7						Installation	_ <u></u>
14					-	LEGEND	
15 -		·				TR TOP OF WELL RISER WELL DETAILS	LITHOLOGY
16						TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK	FILL
17						TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WE!! SANDPACK	(2.2.2)
18						BOD BOTTOM OF DRILL HOLE in INCHES	
19						ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	SHALE
NOT	ES:						
					:	UNITED STATES ARMY TEMPORARY CORPS OF ENGINEERS COMPLETION Seneca Army Depot Romulus, New York	WELL REPORT: MW12-21

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/4/98
WELL INSTALLATION COMPLETED 10/4/98 DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8"

SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 12.6 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ff)		ELEVATION (ft)	WELL CONST	TRUCTION DETAILS
			-2.9	TR			
						RISER	SEAL
0 -			0	GS		Diameter (ID) (in): 2 Type: PVC	Type: BENTONITE Length (ft): 1.5
1	$\bowtie$					Length (ft): 7.3	Lengur (II). 1.3
	$\bowtie$		1.7	TBS		SCREEN	SANDPACK
2				1.50		Diameter (ID) (in): 2 Type: PVC	Type: #0, #00 Length (ft): 9.4
3 -						Length (ft): 6.7	Length (tt). 9.4
	*****		3.2	TSP		Slot Size (in): 10	
4			4.4	TSC			
5							
6 7							
7 -							
8						WELL DEVE	ELOPMENT DATA
9 -						Date: Method: Duration: Rate: Total Volume Removed (gals):	
11 -			11.1	BSC			ER LEVELS
12					ļ	<u>Date</u>	Time Depth, TR
13		· · · · · · · · · · · · · · · · · · ·	12.6	POW,		Development	<u>~</u>
				BOD		Installation	Ţ
14						· LI	EGEND
15					Ī	TR TOP OF WELL RISER	WELL DETAILS LITHOLOGY
16 -	:					GS GROUND SURFACE TBS TOP BENTONITE SEAL	SEAL FILL
,						TSP TOP OF SANDPACK TSC TOP OF SCREEN	
17						BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE	SANDPACK TILL
18	·					in INCHES ft FEET	SHALE
19						ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	
NOT	FQ.		Ll		1		
1101	LU.		···			LIMITED STATES ADMY	TEMPODADYWELL
						UNITED STATES ARMY CORPS OF ENGINEERS	TEMPORARY WELL COMPLETION REPORT: MW12-22

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/5/98
WELL INSTALLATION COMPLETED 10/5/98
DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

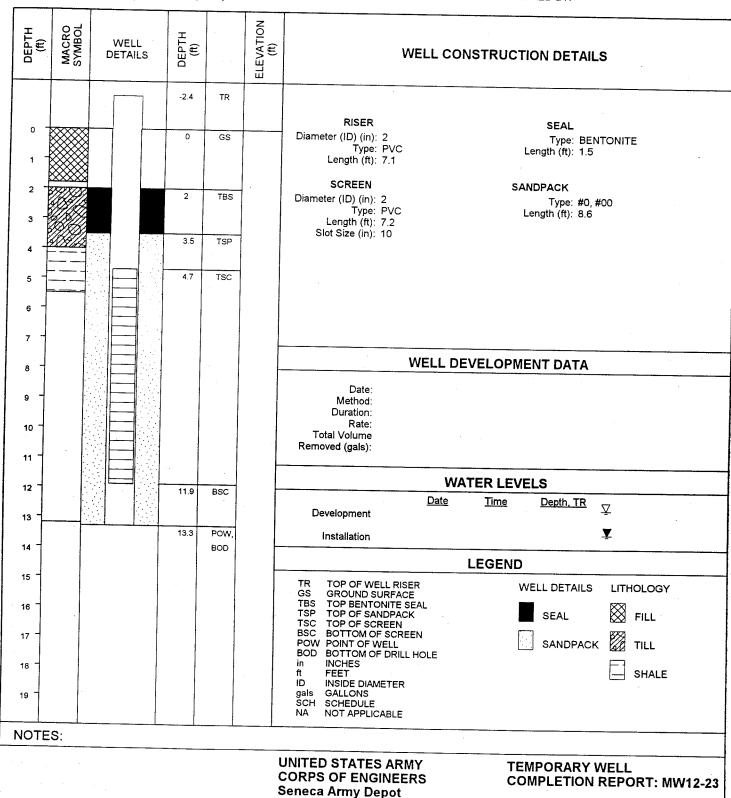
TOTAL DEPTH: 13.3 DEPTH TO WATER:

BORING LOCATION:

COORDINATE SYSTEM: NAD83 GROUND SURFACE ELEVATION:

ELEVATION DATUM: NAVD1927

INSPECTOR: ITR CHECKED BY:



Romulus, New York

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/19/98
WELL INSTALLATION COMPLETED 10/19/98

DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

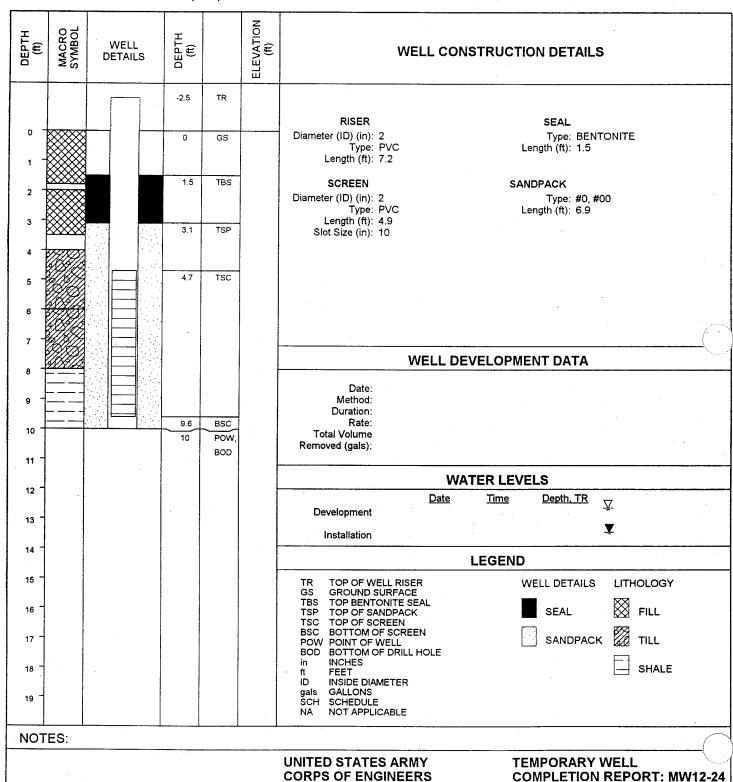
TOTAL DEPTH: 10 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:



#### **TEMPORARY WELL COMPLETION REPORT: MW12-25**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/18/98
WELL INSTALLATION COMPLETED 10/18/98

DRILLING CONTRACTOR: Maxim
DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 10.3
DEPTH TO WATER:
BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

**TEMPORARY WELL** 

**COMPLETION REPORT: MW12-25** 

INSPECTOR: ITR CHECKED BY:

ELEVATION (ft) MACRO SYMBOL DEPTH (ft) DEPTH (ft) WELL WELL CONSTRUCTION DETAILS **DETAILS** RISER SEAL n Diameter (ID) (in): 2 0 GS Type: BENTONITE Type: PVC Length (ft): 1.95 Length (ft): 7.85 **SCREEN** SANDPACK TBS Diameter (ID) (in): 2 Type: #0, #00 Type: PVC Length (ft): 7.4 Length (ft): 4.9 Slot Size (in): 10 3.95 TSP 4.95 TSC **WELL DEVELOPMENT DATA** 8 Date: 9 Method: Duration: Rate: 10 9.85 BSC Total Volume 10.3 POW, Removed (gals): 11 BOD WATER LEVELS 12 <u>Date</u> Time Depth, TR  $\nabla$ Development 13 Ā Installation 14 **LEGEND** 15 TOP OF WELL RISER WELL DETAILS LITHOLOGY **GROUND SURFACE** TOP BENTONITE SEAL TOP OF SANDPACK TOP OF SCREEN BOTTOM OF SCREEN TBS 16 FILL TSP SEAL TSC BSC 17 SANDPACK POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES 18 SHALE FEET INSIDE DIAMETER ID gals GALLONS 19 SCHEDULE NOT APPLICABLE NOTES:

UNITED STATES ARMY

**CORPS OF ENGINEERS** 

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

PROJECT NO.: 730047
WELL INSTALLATION STARTED: 10/18/98
WELL INSTALLATION COMPLETED 10/18/98
DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 10.1 DEPTH TO WATER:

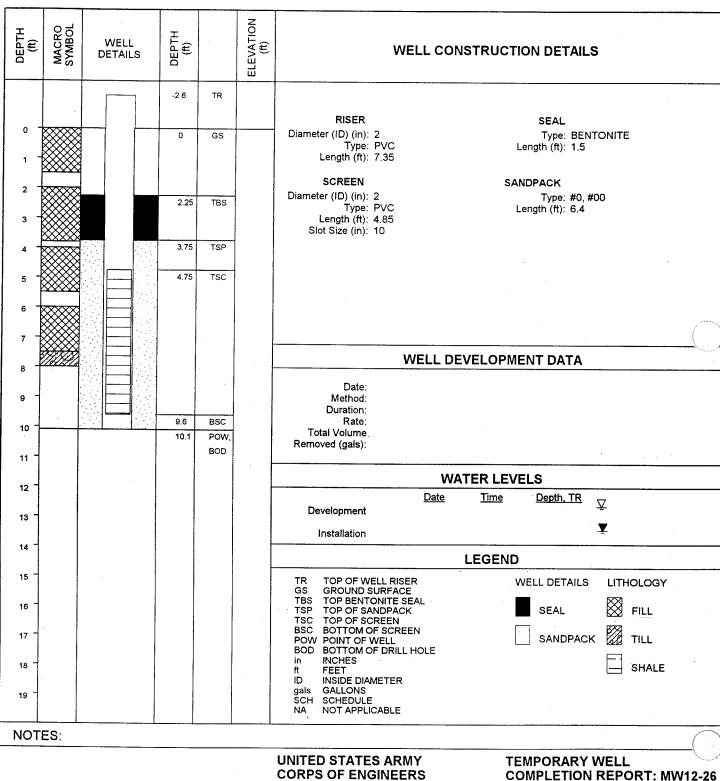
BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:



# **TEMPORARY WELL COMPLETION REPORT: MW12-27**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/4/98 WELL INSTALLATION COMPLETED 10/4/98

DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon TOTAL DEPTH: 12.9

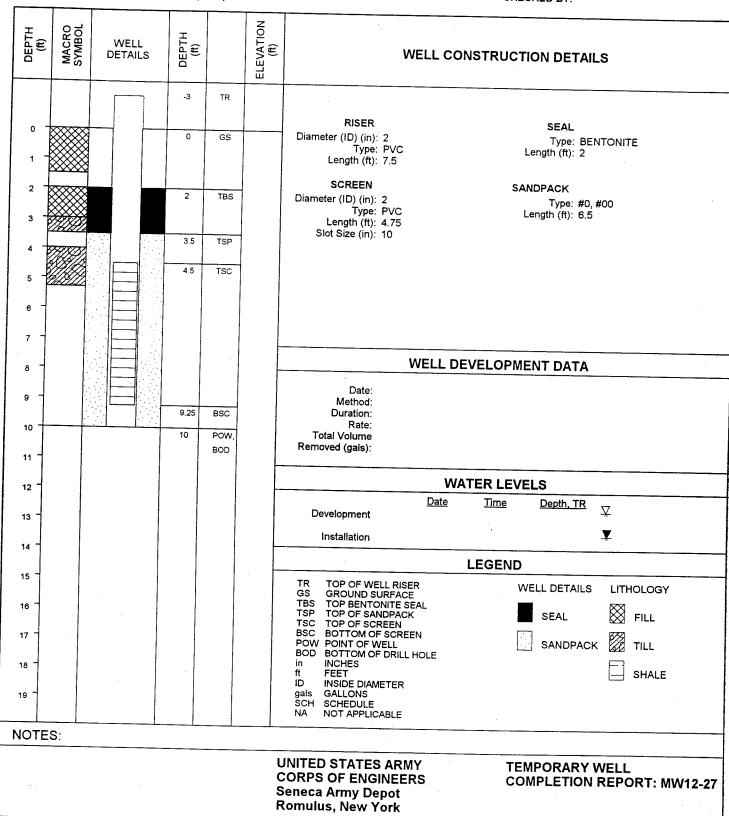
DEPTH TO WATER: **BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12 PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/15/98
WELL INSTALLATION COMPLETED 10/15/98
DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

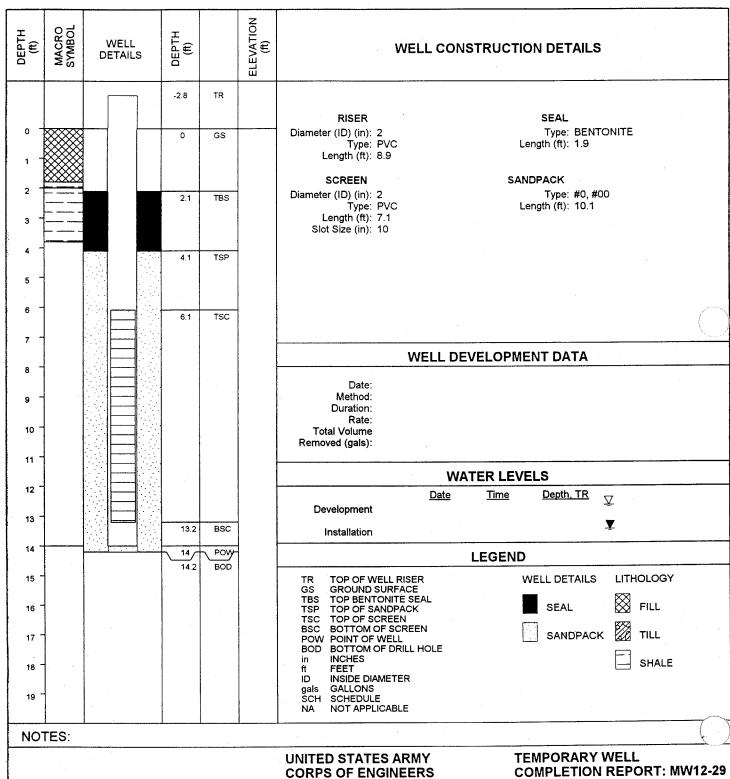
TOTAL DEPTH: 14
DEPTH TO WATER:
BORING LOCATION:

COORDINATE SYSTEM: NAD83

GROUND SURFACE ELEVATION:

ELEVATION DATUM: NAVD1927 INSPECTOR: ITR

CHECKED BY:



PROJECT: SEDA

PROJECT: SEDA
PROJECT LOCATION: Seneca Army Depot, Romulus, New York
ASSOCIATED AREA/UNIT: SEAD 12
PROJECT NO.: 730047
WELL INSTALLATION STARTED: 10/16/98
WELL INSTALLATION COMPLETED 10/16/98

DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8"
SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 14.1 DEPTH TO WATER:

**BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR CHECKED BY:

DЕРТН (ft)	MACRO SYMBOL	WELL DETAILS		DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			1	-2.7	TR		
							RISER SEAL
1				0	GS		Diameter (ID) (in): 2 Type: BENTONITE Type: PVC Length (ft): 2 Length (ft): 8.5
2							SCREEN SANDPACK
3	<b>***</b>			2	TBS		Diameter (ID) (in): 2 Type: #0, #00 Type: PVC Length (ft): 10.1 Length (ft): 7.2 Slot Size (in): 10
4				4	TSP		
5							
6	ŀ		-	5.8	TSC	·	
				0.0	.00		
7 7							W=11
8 -	:					.	WELL DEVELOPMENT DATA
9							Date: Method:
10							Duration:Rate:
							Total Volume Removed (gals):
11 7						-	WATER LEVELO
12							WATER LEVELS  Date Time Depth, TR T
13			-	13	BSC		Development
44 -				13	BSC		Installation
14		· · · · · · · · · · · · · · · · · · ·		14.1	POW, BOD		LEGEND
15					800		TR TOP OF WELL RISER WELL DETAILS LITHOLOGY GS GROUND SURFACE
16							TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK SEAL FILL
17							TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL SANDPACK TILL
18							BOD BOTTOM OF DRILL HOLE in INCHES
19							ff FEET  ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE
NOTE	ES:						
							UNITED STATES ARMY CORPS OF ENGINEERS Seneca Army Depot Romulus, New York  TEMPORARY WELL COMPLETION REPORT: MW12-30

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/26/98 WELL INSTALLATION COMPLETED 10/26/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

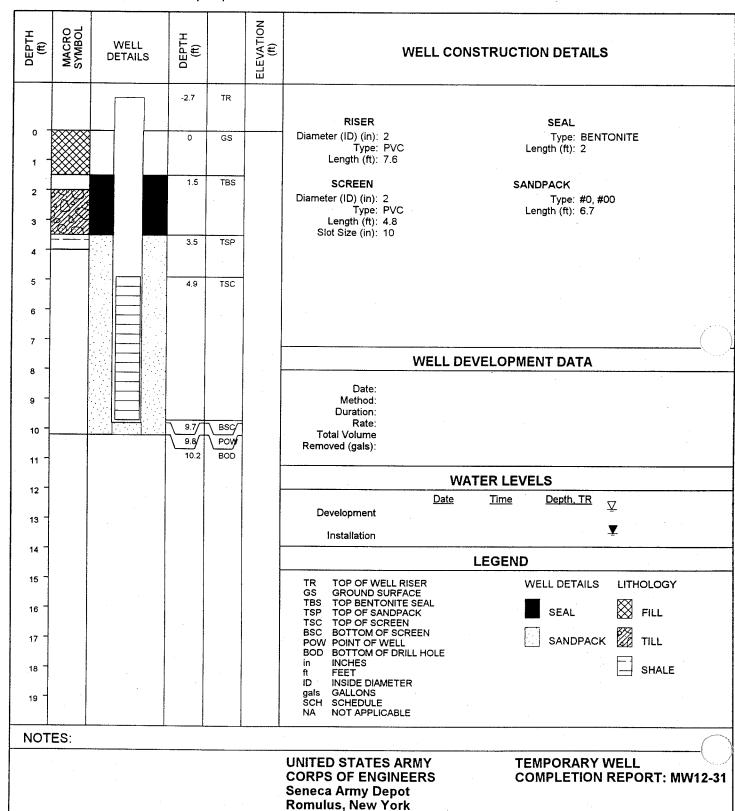
TOTAL DEPTH: 9.8 DEPTH TO WATER: BORING LOCATION:

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: TGH



# **TEMPORARY WELL COMPLETION REPORT: MW12-32**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/26/98

WELL INSTALLATION COMPLETED 10/26/98 DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon TOTAL DEPTH: 10.5

DEPTH TO WATER:

BORING LOCATION:

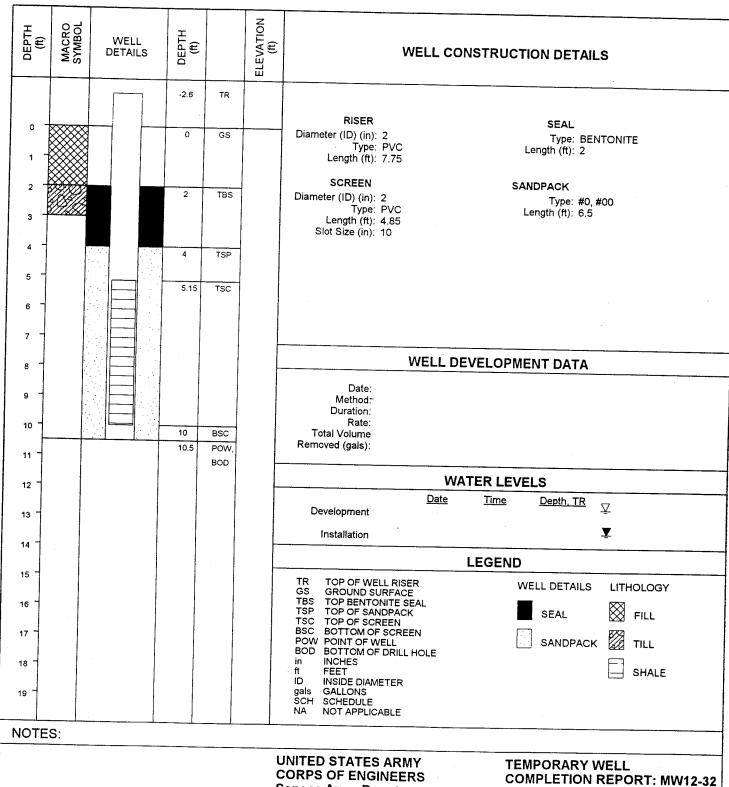
COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

ELEVATION DATUM: NAVD1927

INSPECTOR: TGH

CHECKED BY:



BEDROCK MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: Senew Army Depot Spack-12 RILIFS PROJECT: PROJECT NO: 730047 -01001 North of 804, immediately compression LOCATION: INSPECTOR: DRG/ITR CHECKED BY: 226 of Washest UST DRILLING CONTRACTOR: Maxim Technology POW DEPTH: 38' (BGS) DRILLER: Rodney Bush OUTER CASING INSTALLATION: 10/30/98 DRILLING COMPLETED: 11/3 / 98 INNER CASING INSTALLATION: 11/3/98 DEPTH TO BEDROCK: 16.8 SURFACE COMPLETION DATE: 11/4/98 38.8 BORING DEPTH: COMPLETION CONTRACTOR/CREW: Maxim DRILLING METHOD(S): HQ core CORE TYPE/SIZE: HQ (2.5" 3.1/2 BORING DIAMETER(S): FOOTAGE CORED: Sead-12 ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: PROTECTIVE CASING: DIAMETER: LENGTH: OUTER CASING: TC: -2.5 TYPE: Stect DIAMETER: LENGTH: RISER: TR:  $-2.5^{-1}$ TYPE: FUC SILL YO DIAMETER: SCREEN: SLOT DIAMETER: SIZE: ().010 POINT OF WELL: (SILT SUMP) 37,5 (BGS) TYPE: Sump POW: 38' (BCcs) GROUT: OUTER TYPE: CEMENT / BENTON TE LENGTH: 14.8 TG: TYPE: ( Elment / Bentanite LENGTH: INNER SEAL: TYPE: Bentinite chip SAND PACK: LENGTH: SURFACE COLLAR: TYPE: Concrete RADIUS: 2 THICKNESS EDGE: 4" THICKNESS CENTER: / CENTRALIZER DEPTHS DEPTH 1: 38'-37.5' DEPTH 2: 27.5'-27.0' DEPTH 4:

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 11/1/98 WELL INSTALLATION COMPLETED 11/1/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

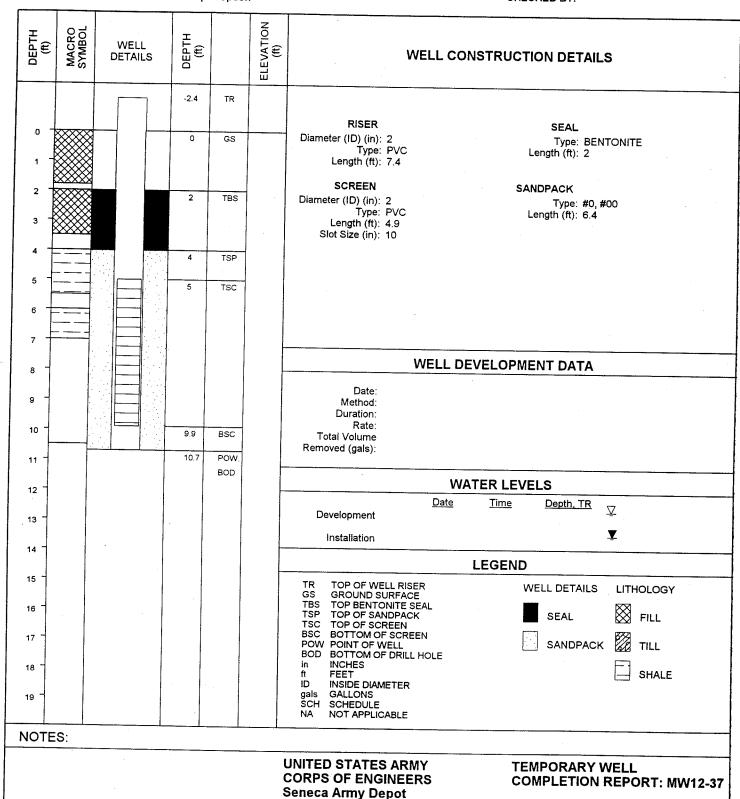
TOTAL DEPTH: 10.7 **DEPTH TO WATER: BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: TGH CHECKED BY:



Romulus, New York

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 11/1/98 WELL INSTALLATION COMPLETED 11/1/98

DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

TOTAL DEPTH: 10.5 **DEPTH TO WATER:** 

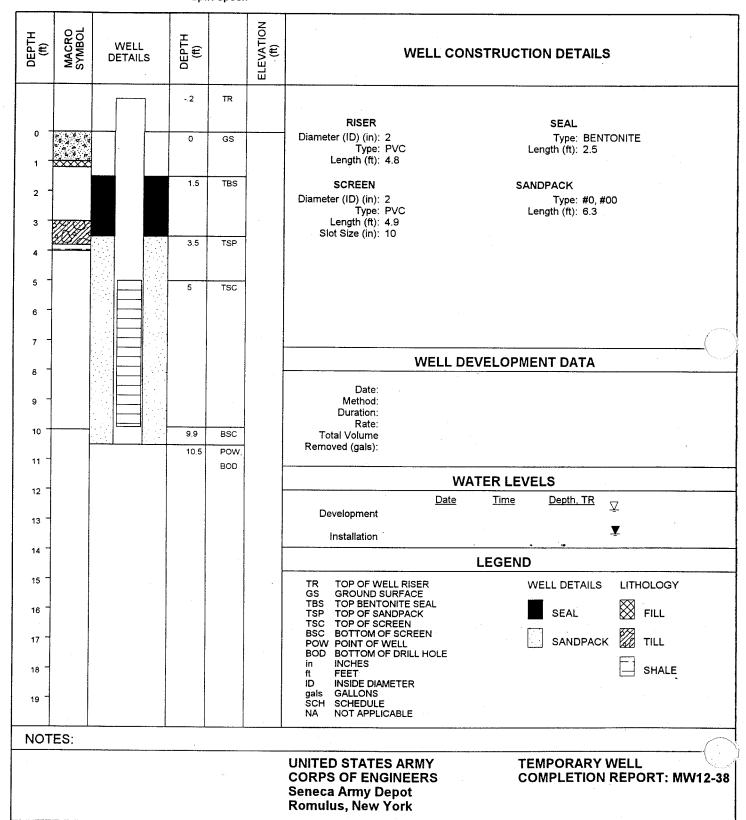
**BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: TGH



PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 11/1/98 WELL INSTALLATION COMPLETED 11/1/98 DRILLING CONTRACTOR: Maxim

DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon TOTAL DEPTH: 10.5

DEPTH TO WATER:

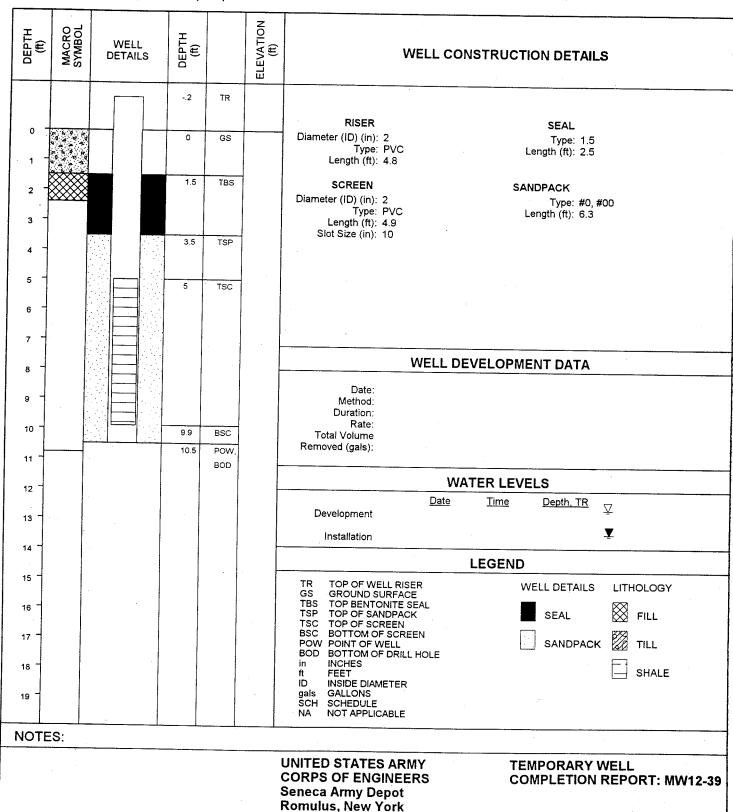
**BORING LOCATION:** 

COORDINATE SYSTEM: NAD83

**GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: TGH



## **TEMPORARY WELL COMPLETION REPORT: MW12-40**

PROJECT: SEDA

PROJECT LOCATION: Seneca Army Depot, Romulus, New York

ASSOCIATED AREA/UNIT: SEAD 12

PROJECT NO.: 730047

WELL INSTALLATION STARTED: 10/15/98
WELL INSTALLATION COMPLETED 10/15/98

DRILLING CONTRACTOR: Maxim DRILLING METHOD: HSA 8" SAMPLING METHOD: Split Spoon

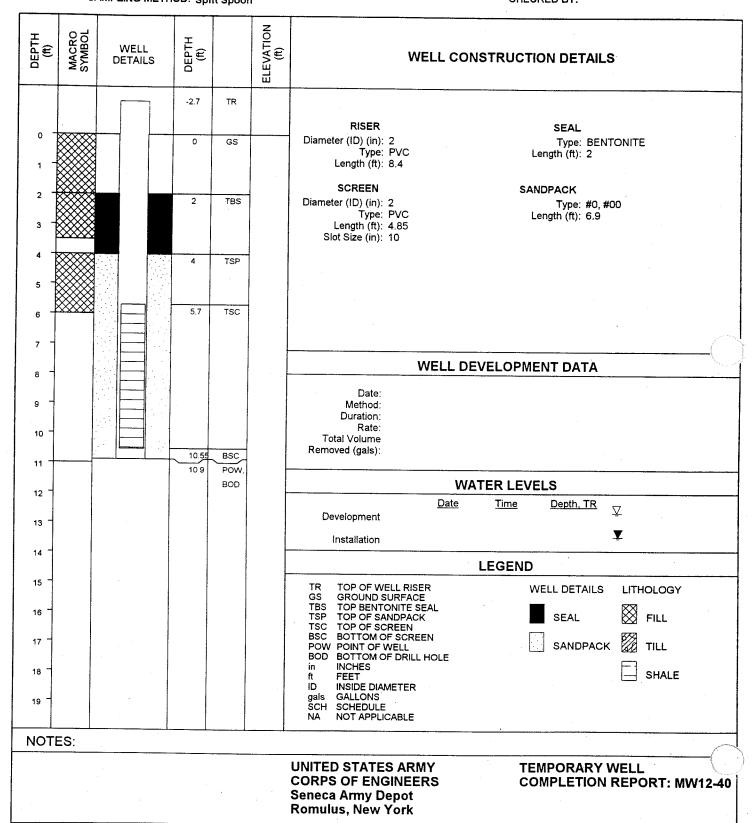
TOTAL DEPTH: 10.9 DEPTH TO WATER:

**BORING LOCATION:** 

COORDINATE SYSTEM: NAD83 **GROUND SURFACE ELEVATION:** 

**ELEVATION DATUM: NAVD1927** 

INSPECTOR: ITR



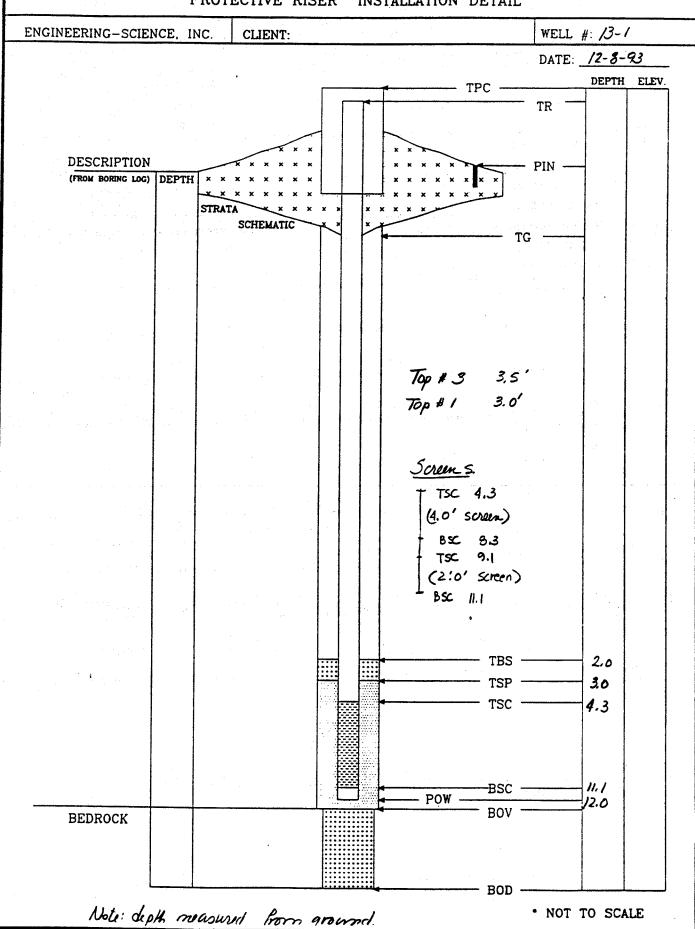
OVERBURDEN MONITORING WELL PAGE 1 OF 2 COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: M W /3-1 PROJECT: 10 SWMU. PROJECT NO: LOCATION: SEAD 13 INSPECTOR: 55 CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: /2 ' DRILLER: lohn INSTALLATION STARTED: 12-8-93 DRILLING COMPLETED: 12-8-93 INSTALLATION COMPLETED: 12-8-93BORING DEPTH: 12' SURFACE COMPLETION DATE: DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: Empire BORING DIAMETER(S): 81/2 = BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: PROTECTIVE SURFACE CASING: DIAMETER: 4"x 4" LENGTH: RISER: TR: TYPE: PYC 40 DIAMETER: 2" SCREEN: TSC: 4.3' TYPE: TOJZ 2" LENGTH: 2'+4' SIZE: 0.01" POINT OF WELL: (SILT SUMP) TYPE: PVC point BSC: POW: /2.0 GROUT: TYPE: Coment-bonionia LENGTH: TYPE: bento nite seles TSP: 3.0' #1 3.5' =3 TYPE: #3 and #1 SAND PACK: LENGTH: SURFACE COLLAR: RADIUS: 2'x 2' TYPE: THICKNESS CENTER: THICKNESS EDGE: / CENTRALIZER DEPTHS DEPTH 1:\_\_\_\_\_ DEPTH 2:\_\_\_\_ DEPTH 3: DEPTH 4: COMMENTS:

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

\*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

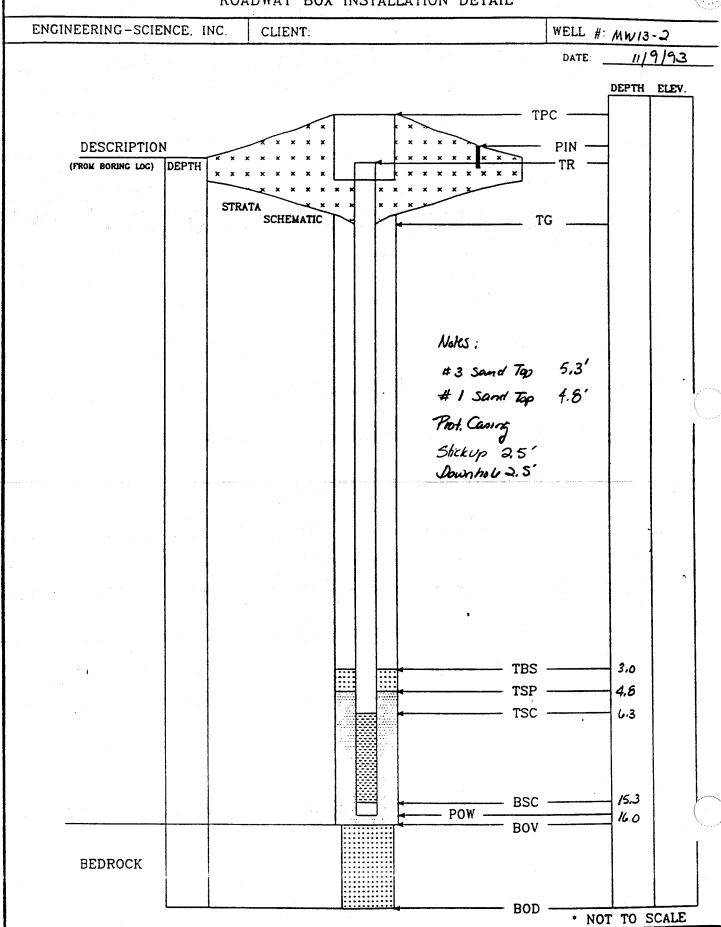
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL



OVERBURDEN MONITORING WELL PAGE 1 OF 2 COMPLETION REPORT & INSTALLATION DETAIL ROADWAY BOX - SURFACE COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW/3-2 PROJECT: 10 SWMII PROJECT NO: LOCATION: SEAD 12 INSPECTOR: 45 CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 160' DRILLER: INSTALLATION STARTED: 11/9/93 DRILLING COMPLETED: 11/9/93 BORING DEPTH: SURFACE COMPLETION DATE: DRILLING METHOD(S): HSA COMPLETION CONTRACTORICREW: 9mpin BORING DIAMETER(S): 854 BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: PROTECTIVE SURFACE CASING: DIAMETER: 4"x 4" She! LENGTH: 5' total RISER: DIAMETER: 2" LENGTH: SCREEN: SLOT DIAMETER: 11 12" LENGTH: 9.0 TYPE: SIZE: ad/ POINT OF WELL: (SILT SUMP) TYPE: PYC COR GROUT: TYPE: Coment - ben boutelength: SEAL: TYPE: Benton - pellets LENGTH: SAND PACK: TYPE: # 34 # / S./ICC SURFACE COLLAR: TYPE: Cement RADIUS: J'x J' THICKNESS CENTER: THICKNESS EDGE: CENTRALIZER DEPTHS DEPTH 1: DEPTH 2: DEPTH 3: COMMENTS: • ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL



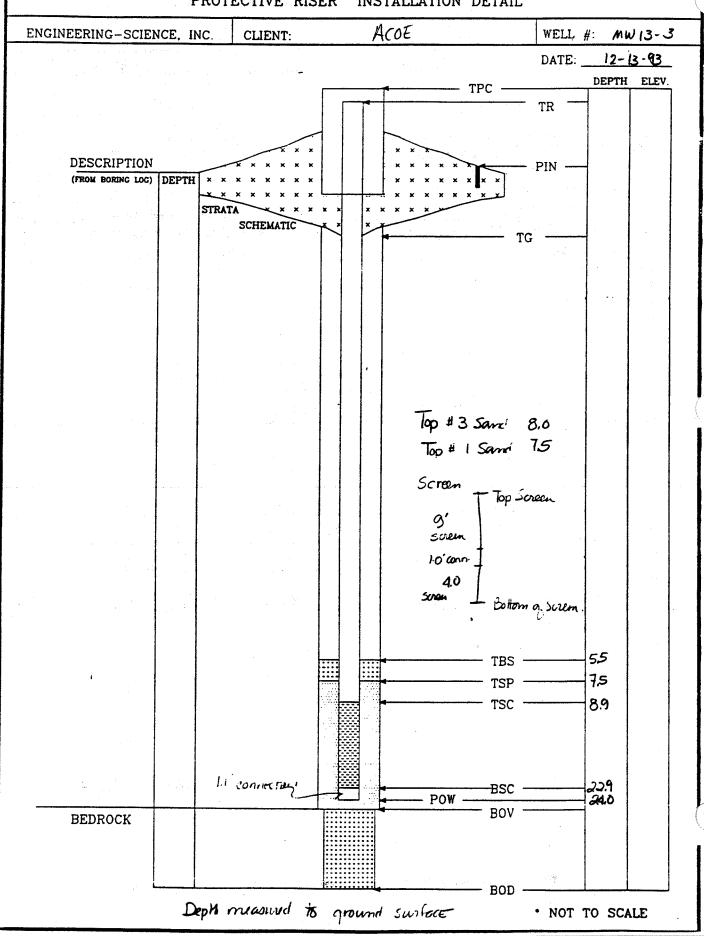
OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL** PROTECTIVE RISER COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW13-3 PROJECT: 10 SWMU PROJECT NO: LOCATION: SEADIS INSPECTOR: CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 24.0 DRILLER: INSTALLATION STARTED: 12-8-93 DRILLING COMPLETED: 12-13-93 INSTALLATION COMPLETED: 12-13-93 24.0' BORING DEPTH: SURFACE COMPLETION DATE: 12-13-93 DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: 8'2" BORING DIAMETER(S): BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: ESTIMATED GROUND ELEVATION: PROTECTIVE SURFACE CASING: DIAMETER: 4" x 4" STEE! LENGTH: RISER: TWO Screens - 4' and 9' SCREEN: SLOT TSC: 6,9' TYPE: PVC-40 DIAMETER: SIZE: <u>001</u>4 POINT OF WELL: (SILT SUMP) TYPE: PVC-point GROUT: LENGTH: 5.5 SEAL: TYPE: bombonit pellets LENGTH: TSP: #3-8' #1-7.5' TYPE: #3+ #1 SAND PACK: LENGTH: SURFACE COLLAR: RADIUS: 2'x2' THICKNESS CENTER: TYPE: THICKNESS EDGE: CENTRALIZER DEPTHS DEPTH 1: DEPTH 2: 🎾 DEPTH 3: COMMENTS:

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL



parties and the same and the sa	PAGE 1 OF 2
COMPLETION RE	EN MONITORING WELL EPORT & INSTALLATION DETAIL CTIVE RISER COMPLETION
ENGINEERING-SCIENCE, INC. CLI	ENT: ACOE WELL#: MW13-4
PROJECT: /O SWMU.	PROJECT NO:
LOCATION: GEAD 13	INSPECTOR: ES/MB/KK
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH: 8.5 '
driller: Soft	installation started: 12-15-93
DRILLING COMPLETED:	INSTALLATION COMPLETED:
BORING DEPTH: $8.5'$	SURFACE COMPLETION DATE:
DRILLING METHOD(S): H5A	COMPLETION CONTRACTOR/CREW: Empin / Scott
BORING DIAMETER(S): 81/2"	BEDROCK CONFIRMED (Y/N7)
ASSOCIATED SWMU/AOC: /3	ESTIMATED GROUND ELEVATION:
DIAMETER: 4"x RISER:	4" She/ LENGTH:
TR: TYPE: PY	2-40 DIAMETER: 2" LENGTH:
SCREEN: TSC: 25' TYPE: PVC	SLOT   SLOT   SLOT   SLOT   SIZE: 0.01"
POINT OF WELL: (SILT SUMP)  TYPE: <u>PVC point</u> BSC: 7.	5' POW: <u>8,5'</u>
GROUT: TG: <u>Ground</u>	TYPE: Coment-bentonite LENGTH: 1,5'
SEAL: TBS: <u>/5'</u>	TYPE: bantonite pellets LENGTH: 1.0'
SAND PACK: TSP: #1-25' #3-3.	0' TYPE: #3 and #/ LENGTH: 6.0'
SURFACE COLLAR:	
TYPE: RADIUS: <u>2'x</u> ,	THICKNESS CENTER; / THICKNESS EDGE: /
CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:
COMMENTS:	

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

\*ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL ACOE WELL #: MW13-4 ENGINEERING-SCIENCE, INC. CLIENT: DATE: 12-15-93 DEPTH ELEV. TPC -TR **DESCRIPTION** PIN (FROM BORING LOG) DEPTH TG Top # 1 Sami 2.5' Top # 3 Sand 30' 1.5 TBS 2.5' 3.5′ TSC POW BOV **BEDROCK**

BOD

· NOT TO SCALE

	PAGE 1 OF 2
OVERBURDEN M	ONITORING WELL
	& INSTALLATION DETAIL
ROADWAY BOX -	SURFACE COMPLETION
	COE WELL #: MW 13-5
PROJECT: 10 SWMU	PROJECT NO:
LOCATION: 5 EAD 13	INSPECTOR: ES/LB
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH: 16.0
DRILLER: Bob	INSTALLATION STARTED: ///8/9_3
DRILLING COMPLETED: 11/9/93	INSTALLATION COMPLETED: 11/9/9 3
BORING DEPTH: /6,0'	SURFACE COMPLETION DATE:
DRILLING METHOD(S): HSA	COMPLETION CONTRACTOR/CREW: Empiric
BORING DIAMETER(S): 81/2"	BEDROCK CONFIRMED (Y/N?)
ASSOCIATED SWMU/AOC: 13	ESTIMATED GROUND ELEVATION:
PROTECTIVE SURFACE CASING:	
DIAMETER: 4" x 4" STEU	LENGTH: 5.0' total
RISER:	
TR: TYPE: PVC- 40	DIAMETER: 2" LENGTH:
SCREEN:	. SLOT
SCREEN: TSC: 6.3' TYPE: PVC-40	***
	DIAMETER: 11 1 2" LENGTH: 90 SIZE: 0,0/"
POINT OF WELL: (SILT SUMP)	DIAMETER: 11 2" LENGTH: 90' SIZE: 0,01"
POINT OF WELL: (SILT SUMP)	***
TSC	DIAMETER: 11 2" LENGTH: 90' SIZE: 0,01"  POW: 16.0'
TSC	POW: 16.0'  Pow. 16.0'  Ment - beatonite Length: 3.0'
TSC	POW: 16.0'  POW: 16.0'  Powerd-beaton/le LENGTH: 3.0'  Replant pells LENGTH: 1.8'
TSC	POW: 16.0'  POW: 16.0'  Powerd-beaton/le LENGTH: 3.0'  Replant pells LENGTH: 1.8'
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC Cap BSC 15.3  GROUT:  TG: Graind TYPE: (6)  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #3  SURFACE COLLAR:	POW: 16.0'  POW: 16.0'  Powerd-beaton/le LENGTH: 3.0'  Replant pells LENGTH: 1.8'
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC Cap BSC 15.3  GROUT:  TG: Graind TYPE: (6.4)  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #3  SURFACE COLLAR:	POW: 16.0'  POW: 16.0'  Powerd-beaton/le LENGTH: 3.0'  Replant pells LENGTH: 1.8'
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC Cap BSC: 15.3  GROUT:  TG: Graind TYPE: Cult  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3' #1-4.8' TYPE: #3  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'	POW: 16.0'  POW: 16.0'  Manual - beatonite Length: 3.0'  Sentente pellets Length: 1.8'  3.#1 Silica Length: 10.2'
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC Cap BSC: 15.3  GROUT:  TG: Graind TYPE: Cult  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3' #1-4.8' TYPE: #3  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'	POW: 16.0'  POW: 16.0'  Manual - beatonite Length: 3.0'  Sentente pellets Length: 1.8'  3.#1 Silica Length: 10.2'
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC CAD BSC 15.3  GROUT:  TG: Graind TYPE: 62  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #:  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'  CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 16.0'  POW: 1
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC CAD BSC 15.3  GROUT:  TG: Graind TYPE: 62  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #:  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'  CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 16.0'  POW: 1
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC CAD BSC 15.3  GROUT:  TG: Graind TYPE: 62  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #:  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'  CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 16.0'  POW: 1
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC CAD BSC 15.3  GROUT:  TG: Graind TYPE: 62  SEAL: TBS: 3.0' TYPE: 13  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #:  SURFACE COLLAR:  TYPE: Comput RADIUS: 2' x 2'  CENTRALIZER DEPTHS  DEPTH 1: DEPTH 2:	POW: 16.0'  POW: 1
TSC 6.3' TYPE: PVC-40  POINT OF WELL: (SILT SUMP)  TYPE: PVC Cap BSC 15.3  GROUT:  TG: Ground TYPE: 6.2  SEAL: TBS: 3.0' TYPE: 15  SAND PACK: TSP: #3-5.3'#1-4.8' TYPE: #:  SURFACE COLLAR:  TYPE: 6ment RADIUS: 2' x 2'  CENTRALIZER DEPTHS	POW: 16.0'  POW: 16.0'  MANUAL DE LENGTH: 3.0'  POM LENGTH: 18'  SIZE: 0.01"  POW: 16.0'  THICKNESS CENTER: 10.2'  THICKNESS CENTER: 1'  THICKNESS EDGE: 1'

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

### OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ROADWAY BOX INSTALLATION DETAIL ENGINEERING-SCIENCE, INC. WELL #: NW/3-5 CLIENT: A COE DATE 11/9/93 DEPTH ELEV. TPC -PIN DESCRIPTION TR (FROM BORING LOG) DEPTH TG SCHEMATIC Notes: Top of #3 Sand 5.3'
Top of #1 Sand 4.8' Protect. Caning stick up 2.5' Down not 2.5' POWIS COP not pointed and 3.0' TBS -4.6 TSC -3عا 15.3 0.7' con nector 16.0 POW BOV BEDROCK · NOT TO SCALE Note: All dop the measured from around surivite

### OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL**

ROILCIVL	
ENGINEERING-SCIENCE, INC. CLIENT: Ac	COE WELL #: /3-6
PROJECT: /O SW MU	PROJECT NO:
LOCATION: SEAD 13	INSPECTOR: ES/MB/KK
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH:/O. O´
DRILLER: Scott	INSTALLATION STARTED: /2-/5- 93
DRILLING COMPLETED: 12-15-93	INSTALLATION COMPLETED: 12-15-93
BORING DEPTH: 10.0'	SURFACE COMPLETION DATE: 12-17-93
DRILLING METHOD(S): HS A	COMPLETION CONTRACTOR/CREW: Fmpic/Scott
BORING DIAMETER(S): 8"2."	BEDROCK CONFIRMED (Y/N7)
ASSOCIATED SWMU/AOC: /3	ESTIMATED GROUND ELEVATION:
PROTECTIVE SURFACE CASING:	
DIAMETER: 4"x 4" Steel	LENGTH:
RISER:	
TR: TYPE: <u>PVC- 40</u>	DIAMETER: 2 * LENGTH:
SCREEN:	s.or
TSC: 5.0' TYPE: PVC-40	DIAMETER: 2" LENGTH: 4' SIZE: 0.01"
POINT OF WELL: (SILT SUMP)	
TYPE: PVC point BSC: 9.0'	POW: <i>10, 0</i>
GROUT:	
	Cem-benkonite LENGTH: 25
SEAL: TBS: <u>2.5'</u> TYPE: <u>/</u>	bentonte Delles LENGTH: 1.0'
SAND PACK: TSP: 3.5'-1 9.0-#3 TYPE:	,
SURFACE COLLAR:	
TYPE: RADIUS: 2'×2'	THICKNESS CENTER: / THICKNESS EDGE: /
CENTRALIZER DEPTHS	
DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:
COMMENTS:	
	· ·
WALL DEPTH MEAN	SUREMENTS REFERENCED TO GROUND SURFACE
ALL DEFIN MEAS	COLUMNIC NEI ENGIOCE TO CINOCID SURFACE

SEE PAGE 2 FOR SCHEMATIC

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

DESCRIPTION  (FROM BORING LOC) DEPTH  STRATA SCHEMATIC  TO  TO  TO  TO  TO  TO  TO  TO  TO  T	ENGINEERING-SCIENCE, INC.	CLIENT:	ACOE	WELL #	MW	13-6	
DESCRIPTION (FROM BORING LOC) DEPTH  STRATA SCHEMATIC  TO  TO  TO  TO  TO  TO  TO  TO  TO  T	A CONTRACTOR OF THE PROPERTY O						-
DESCRIPTION  (FROM SOURCE LOC) DEPTH  STRATA SCHEMATIC  TO  TO  TO  TO  TO  TO  TO  TO  TO  T			TDC		DEPTH	ELEV.	
DESCRIPTION  (FROM BORRIC LOC) DEPTH  STRATA SCHEMATIC  TO  TO  TO  TO  TO  TO  TO  TO  TO  T			IFC		<del>-  </del>	1	
Top #   Saint   3.5'   Top #   Saint   4.0'   TSP   3.5   TSP   3.5   TSC   TSC   TSC   TSC   TSC   BOD   BOD							
Top #   Saint   3.5'   Top #   Saint   4.0'   TSP   3.5   TSP   3.5   TSC   TSC   TSC   TSC   TSC   BOD   BOD							
Top #   Saint   3.5'   Top #   Saint   4.0'   TSP   3.5   TSP   3.5   TSC   TSC   TSC   TSC   TSC   BOD   BOD	<b>***</b>	×××	x x	DIM			
Top #   Saund 3.5' Top # 3 Saund 4.0'  TBS 2.5 TSP 3.5 TSC 5.0  BEDROCK BOV BOV		X * * * * *		rin —			
Top # 1 Sound 3.5' Top # 3 Sound 4.0'  TBS 25 TSP 3.5 TSC 5.0  BEDROCK  BEDROCK  BOD	(FROM BORING LOG)   DEPTH   ×	* * * * * * * * * * * * * * * * * * *					
Top # / Sound 3.5' Top # / Sound 3.5' Top # 3 Saund 4.0'  TBS 2.5 TSP 3.5 TSC 5.0  BEDROCK  BEDROCK  BOD	STR	X X X	x x   x x x x	- i			
Top # 1 Sand 3.5'  Top # 3 Sand 4.0'  TBS			× × ×				
TBS			I I I		1	1	
TBS					,		
TBS							
TBS						1	
TBS							
TBS							
TBS							
TBS	the state of the s						
TBS							1
TBS			Ton # 150.	35'		İ	1
TBS							!
TBS			1   Top #3 Sand	4.0			١
TSP			1   1   7	:			١
TSP				!			1
TSP							1
TSP	es l			•			•
TSP							ļ
TSP			1 1 1		1.		
TSP							
TSP						.	
TSP				1.00			
TSP					1		
TSP			TRO	·	25		
BEDROCK  BEDROCK  BEDROCK  BOD  BOD		•	17113 11114		l .		
BEDROCK  BEDROCK  BOD  BOD			151		1		
BEDROCK BOV BOD			TSC		5.0		
BEDROCK BOV BOD							
BEDROCK BOV BOD							
BEDROCK BOV BOD							1
BEDROCK BOV BOD			RSC		9.0		
BEDROCK			POW		70.0		1
BOD	BEDROCK		BOV			1	
							1
						1	
			\		$\int_{\mathbb{R}^{2}}$	1	
• NOT TO SCALE			BOD				_
				• NOT	TO SC	CALE	

	PAGE 1 OF 2								
OVERBURDEN M	ONITORING WELL								
COMPLETION REPORT & INSTALLATION DETAIL									
PROTECTIVE RISER COMPLETION									
ENGINEERING-SCHENCE, INC. CLIENT:	WELL #: MW 13 F								
PROJECT: 10 SWMU ESI	PROJECT NO: 720478-01001								
LOCATION: Senera Army Depot, Dorming, N	INSPECTOR: YY BIT								
	CHECKED BY:								
DRILLING CONTRACTOR: EMPINE SOILS	POW DEPTH: 8.0 Ft								
DRILLER: JOHN ED	INSTALLATION STARTED: 1-24-94								
DRILLING COMPLETED: 1-24-14	INSTALLATION COMPLETED: 1-24-94								
BORING DEPTH: 8-0 FT	SURFACE COMPLETION DATE: 1-25 14								
DRILLING METHODIS: Hollow Stam Anger	COMPLETION CONTRACTOR/CREW: MA								
BORING DIAMETER(S): 8.5 in	BEDROCK CONFIRMED (Y)								
ASSOCIATED SWMU/ADC SEAO 13	ESTIMATED GROUND ELEVATION:								
PROTECTIVE SURFACE CASING:									
DIAMBTER: 2 IA	LBNOTH:								
RISTR:									
TR: + 2.5ft. TYPE: ?VC.	DIAMETER: 2 1 LENGTIL:								
SCREEN: TSC: 5.0 ft. TYPS: [VL	DIAMETER: 2 in LENOTH: 2 Fr SIZE: 100 in.								
POINT OF WELL: (SILT SLAMP)  TYPE: PY(	POW: 6.0								
GROUT: NA TO: TYPE:	LENGTH:								
SEAL: TER 3.0 F4 TYPE:	enhure pellets LENGTH 1.0 ft.								
SAND PACK: TSP: 4.0-F1. TYPE:	#3 Pol - 60 HINGH								
SURFACE COILAR: TYPE: Quikiete Radius 17.	THICKNESS CENTER: 3.0fr THICKNESS EDGE: 5f2.								
CENTRALIZER DEPTHS NA DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:								
COMMENTS:									
	UREMENTS REFERENCED TO GROUND SURFACE								
* Att DEPTH MEAS	UKEMENIS KEPERCENCIAL IV GROUND SUIGING								

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

R-96%

p2 of 3 OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL CLIENT: US AWE WELL #: MW 13-7 ENGINEERING-SCIENCE, INC. DATE: 1-24-94 125 TR 0,0 PIN DESCRIPTION (PRON BORDEG LOG) | DEPTH TG 3.0 TBS 4.0 **TSP** 5.0 TSC 40 80 POW BEDROCK BOD • NOT TO SCALE 02-16-94 08:22AM P003 #32 E=95%

		om r			PARSONS ENGINEERING SCIENCE, INC.		RING/		Sheet <u>* 1</u> of 1 *
Contra Driller		SJB, Ir		-	DRILLING RECORD		LL NO.		SB-13-11/MW-13-11
Inspec		John V E. Ash		-	DDOIECT NAME: Concor Amore Donot SEAD 12		ation Des		
Rig Ty		Mobile	***************************************	-	PROJECT NAME: Seneca Army Depot-SEAD-13 PROJECT NUMBER: 736994	<del> </del>	SEE SITI	E PLA	AN
ling 1	pc.	WIOOIIC		-	1 ROJECT NUMBER: 730994	-			
GRO	UNDWA	TER OF	BSERVAT	TIONS		Locs	tion Plan	П	
Water	T		T		Weather: Cloudy-70 ' F	Loc.	tion I mi	-11	
Level	Dry	Dry	Dry						
Date	8/17/01				Date/Time Start: 8/16/01-0925		S	EE SI	ITE PLAN
Time	0825	1010	1130			İ			
Meas.					Date/Time Finish: 8/16/01-1310				
From	TOC	TOC	TOC						
Sampl		SPT	%	PID	FIELD IDENTIFICATION OF MATERIAL	SC	HEMAT	IC	COMMENTS
Depth		- /2	Rec.	(ppm)		2.51	stick-up		
0	134016	5/9	50	696	(0'-2') Brown to light Grey, silt with clay, trace of fine sand and fine				Grout 0-1'
<u> </u>	(0-2)	16/15			gravel (weathered shale), roots, dryML/SC				
1							l L		1'
		14/16	50	100	(24.4) 7.4.4		←		2" PVC Riser
2		14/16		175	(2'-4') Light Brown, fine sand with silt, fine to medium gravel				
3		21/21			(weathered shale), drySM/SC		i		Bentonite Pellets 1-3.5'
<u> </u>									
4		9/16	50	190	(ALC) Property after the design of the second secon		_		3.5'
		22/28		190	(4'-6') Brown, silt with clay, fine to medium gravel (weathered shale),				4 101
5		22/20			trace of fine sand, dryML/SC		<b>  </b>		4.5'
		<del> </del>					<b>  </b>		F"( 1 1 (#A)
6		53/60	80	91	(6'-8') Same as above ML/SC		<del></del>	₹	` '
١		67/	- 00	71	(0-6) Same as above WIL/SC		<del></del>		pack-3.5-15'
7		100/.4					<del>                                     </del>		0.010 Slot Sch. 40 PVC
		100,					$\vdash$		Screen-4.5'-14.5'
8	134017	13/19	80	264	(8'-10') Light Grey, fine to medium sand, fine to course gravel		<b>—</b> —		
	(8-10)	24/37			(weathered shale), silt, drySM/SC				
9					( and the same of		$\vdash$		
							<del></del>		
10		13/37	80	106	(10'-11.8) Same as aboveSM/SC				
		100/.4			Refusal at 11.8' bgs.		-		
11					Note: Drilled to 15' bgs with HSAs.				
								ı	•
12									
								- 1	
13									
1.4									
14									
15									14.5'
13					Torrelated will be in a 4.15 G at 1				15' Sump
					Terminated soil boring at 15 feet bgs.				(14.5-15')
									•
	-								
				****					
						•			
				-	·			J	
					COMMENTS:				
\$	SAMPLING	G METHO	OD		Collected soil samples 134016 (0'-2') bgs and 134017 (8'-10') bgs for B/N/A SVOCs, TAL	Metale	Cvanide ••	d Nites	ate analysis
s	S = SPLIT SPOO	N			Additionally, collected soil samples 134017 (8'-10') bgs MS & MSD for same analysis menti				
A	- AUGER CUT	TINGS			Installed 2-inch monitoring well.	GOO			

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SC	IENCE, INC. C	LIENT:	ACOB			WELL#:	4W-13-11
PROJECT:	OSWMA			PF	ROJECT NO:	13699	
LOCATION:	SEAD 13			П	NSPECTOR:	60	ASHE
				СН	ECKED BY:	EN AN	Lita
DRILLING CONTRACTOR:	STB Z.	vC.		Po	OW DEPTH:	15'	
DRILLER:	John Wa.	rs of	II.	ISTALLATION	STARTED:	8116/01	1 = 0925
DRILLING COMPLETED:	8/16/01		INST	ALLATION CO	OMPLETED:	. 4	e /3/0
BORING DEPTH:		·	SURF	ACE COMPLET	TON DATE:	8117101	
DRILLING METHOD(S):	HSA	···	COMPLETION	ON CONTRACT	ror/crew:	STB	Inc.
BORING DIAMETER(S):	8-12-1	W	BEDR	OCK CONFIRM	MED (Y/N?)	•	
ASSOCIATED SWMU/AOC:			ESTIMATE	O GROUND E	LEVATION:		
PROTECTIVE SURFACE CASI	NG:						
	DIAMETER: 4	xy"Stee	LENGTH:	3.5'	_	TOR:	
RISER:							
TOC:	TYPE:	PVC 40	DIAMETER:		LENGTH:		
SCREEN:							SLOT
TSC: <u>9.5</u>	TYPE:	Prc40	DIAMETER:	2 ''	LENGTH:	10	SIZE: O.O/
POINT OF WELL: (SILT SUMP) YPE: <u>PVC Poin</u>	f BSC:	14.5	POW:	15'			
GROUT: TG:_	Wound	TYPE:	Carrent-B	le <i>if</i> . LENGTH:	-	1.0	
SEAL: TBS:	10'	TYPE:/	Bont.pole	LENGTH:		2.5'	
SAND PACK: TSP:	3.5'	TYPE:	40	LENGTH:		11.5	7
SURFACE COLLAR: TYPE:	radius: 2	×2'_	THICKN	ESS CENTER:		THICKNES	S EDGE:
CENTRALIZER DEPTHS DEPTH 1:	DEPTH 2:		DEPTH 3:		_	DEPTH 4:	
COMMENTS:							
		,					
	* AI	LL DEPTH ME	ASUREMENTS	REFERENCEI	TO GROU	ND SURFACE	

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ACOE WELL #: MW-13-11 PARSONS ENGINEERING SCIENCE, INC. CLIENT: DATE: 81/8/01 DEPTH **ELEV** -TPC--TOC-DESCRIPTION PIN-(FROM BORING LOG) DEPTH SCHEMATIC TG See Boriglag SB-13-11. TBS-TSP-- TSC-4.51 BSC-POW-- BOV-15.0 **BEDROCK** BOD:

Contra	etor:	SJB, Ir	ne		PARSONS ENGINEERING SCIENCE, INC. DRILLING RECORD	BORING/ WELL NO.	Sheet * 1 of 1 * SB-13-12/MW-13-12
Driller		John W		****	DRILLING RECORD		
Inspec		E. Ash		_	PROJECT NAME: Seneca Army Depot-SEAD-13	Location Descript SEE SITE PL	
Rig Ty		Mobile		***	PROJECT NUMBER: 736994	SEE SHE PL	AN
ing Ay	pc.	Woone	<del>'</del>		TROJECT NUMBER. 730334		
GRO	UNDWA	TER OF	BSERVA'	TIONS		Location Plan	
Water	Ī	Ī	T	T T	Weather: Sunny-70'F	Document Time	
Level	Dry	Dry	9.45		Tronsite Commy 102	1	
Date	8/17/01	<del></del>		<del>                                     </del>	Date/Time Start: 8/15/01-1000	SEE S	SITE PLAN
Time	0830	1020		+		-	HILD I LICHT
Meas.				†	Date/Time Finish: 8/15/01-1306		
From	тос	TOC	TOC			†	
Sampl	Sample	SPT	%	PID	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
Depth			Rec.	(ppm)		2.5'-stick-up	
0	134018	2/3	80	157	(0'-2') Brown, clay with silt, trace of fine sand, roots, dry to moist.		Grout 0-1'
	(0-2)	5/6			CL/ML		2" PVC Riser
1				<u> </u>			<u></u> 1'
							Bentonite Pellets 1-1.75'
2		8/21	50	74	(2'-3.5') Brown to light Brown, clay with silt, trace of fine sand, dry.		1.75'
		18/16	<u> </u>		CL/ML		2'
3							Filtered sand (#0)
					(3.5'-4') Light Grey to light Brown, silt with clay, trace of fine sand		pack-1.75-11.3'
4		16/29		90.5	and fine to medium gravel (weathered shale), dry ML/SC		
		35/37			(4'-6) Grey to Light Grey, silt with clay, trace of fine sand, fine to		
5					medium gravel (weathered shale), dry ML/SC		
6	134019			100	(6'-8') Brown to light Grey, silt, trace of clay and fine sand, fine to		
	(6-8)	67/67			medium gravel (weathered shale), dry ML/SC		0.010 Slot Sch. 40 PVC
7							Screen-2-9.3'
8		16/32		25	(8'-10') Same as above, except for soil Grey in color.		
		46/66	ļ <u>.                                    </u>				
9				<u> </u>			9.3'
		25/50					Sump
10		36/58		82.2	(10'-11.3') Same as above. Refusal at 11.3' bgs. Weathered shale at		10' (9.3'-10')
		100/.3			tip of spoon.	]	]
11				igwdown			
							11.3'
12				<u> </u>	Terminated soil boring at 11.3 feet bgs.		
$\longrightarrow$				<u> </u>			
$\longrightarrow$							
$\longrightarrow$				<b>  </b>			
$\longrightarrow$				<b></b>			
$\longrightarrow$							
$\longrightarrow$							
$\dashv$	<u> </u>		<u> </u>	<u> </u>			
				<b></b>			
	$\longrightarrow$			$\vdash \vdash \vdash$			
	$\longrightarrow$			<u> </u>			
				<b></b>			
$\longrightarrow$	$\longrightarrow$			$\vdash \vdash \vdash$			
			<u> </u>				
				<u> </u>			
		1					
					COMMENTS:		
	SAMPLING		)D		Collected soil samples 134018 (0'-2') bgs and 134019 (6'-8') bgs for B/N/A SVOCs, TAL M	Metals, Cyanide, and Nitra	te analysis.
	SS = SPLIT SPOON				Installed 2-inch monitoring well.		
	A - AUGER CUTT	INGS					
(	C = CORED						

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SCIENCE, INC.	CLIENT:	ICOE			WELL#: M	4-13-12
PROJECT: /OSWMU			PF	ROJECT NO:		
LOCATION: SBAD 13				NSPECTOR:	ES A	
			СН	ECKED BY:	AJ A	sate
DRILLING CONTRACTOR: STB. Z.	2-1_		Po	OW DEPTH:	11.3	} ′
DRILLER: John W	reno	n	STALLATION	STARTED:		
DRILLING COMPLETED: 8/15/0		INST.	ALLATION CO	OMPLETED:		- 1306
BORING DEPTH: //. 3	,	SURF	ACE COMPLET	TION DATE:	<i>r</i> :	1
DRILLING METHOD(S): #SA		COMPLETIO	ON CONTRACT	TOR/CREW:	parameter.	Parc
BORING DIAMETER(S): タゼー	N	BEDR	OCK CONFIRM	MED (Y/N?)		
ASSOCIATED SWMU/AOC: /3		ESTIMATEI	O GROUND EI	LEVATION:		
PROTECTIVE SURFACE CASING:						
DIAMETER:	4"+4"Steel	LENGTH:	3.5	_	TOR:	
RISER:						
TOC: TYPE:	PVC 40	DIAMETER:	2"	LENGTH:	-	
SCREEN:					(	SLOT
TSC: $2$ TYPE:	AVC 40	DIAMETER:	2	LENGTH:	7.3	SIZE:
POINT OF WELL: (SILT SUMP)  YPE: <u>IVC Paid</u> BSC:	9.3	POW:	10.0			
GROUT: TG: Gland	ТҮРЕ: 4	e med-kon	LENGTH:		1.0	
SEAL: TBS: // O	TYPE: 🙇	last, pellet	LENGTH:		0-75'	
SAND PACK: TSP: 675'	TYPE:	#0	LENGTH:	-	9. 35	
SURFACE COLLAR:  TYPE: RADIUS:	2'x2'	THICKN	IESS CENTER:		THICKNESS	EDGE:
CENTRALIZER DEPTHS DEPTH 1: DEPTH 2:		DEPTH 3:			DEPTH 4:	
COMMENTS:	* ALL DEPTH MEA	.SUREMENTS	REFERENCEL	) TO GROU	ND SURFACE	

SEE PAGE 2 FOR SCHEMATIC

## OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ACOE WELL #: MW-13-12 PARSONS ENGINEERING SCIENCE, INC. CLIENT: DATE: 8/15/01 DEPTH **ELEV** -TPC--TOC-**DESCRIPTION** PIN-(FROM BORING LOG) DEPTH SCHEMATIC fee Boringley SB-13-12 TG - TBS-- TSP -2.0 - TSC-BSC-POW-BOV-**BEDROCK** BOD.

1					PARSONS ENGINEERING SCIENCE, INC.	BO	RING	/	Sheet <u># 1 of 1 #</u>		
Contra		SJB, Inc		_	DRILLING RECORD	WE	LL N	0. §	SB-13-13/MW-13-13		
Driller		John Wa		-		Loc	Location Description: SEE SITE PLAN				
Inspec		E. Asht	on	_	PROJECT NAME: Seneca Army Depot-SEAD-13		SEE SI	TE PL	AN		
Rig Ty	pe:	Mobile		-	PROJECT NUMBER 736994	+					
GRO	DUNDWA	ATER OF	BSERVAT	IONS		Loc	ation Pl	an	· · · · · · · · · · · · · · · · · · ·		
Water		Ī		<u> </u>	Weather: Sunny-70'F	Loc.	ition 11	<u>                                    </u>			
Level	5.80'	8.10'	9.15		-	1					
Date	8/17/01	8/22/01	9/04/01		Date/Time Start: 8/15/01-1420	_		SEE S	ITE PLAN		
Time	0815	0955	1121								
Meas. From	TOC	TOC	TOC		Date/Time Finish: 8/15/01-1741	_					
Sampl	Sample		%	PID	FIELD IDENTIFICATION OF MATERIAL	S.C	TTTTT A A	TIC	COMMENSES		
Depth			Rec.	(ppm)	FIELD IDENTIFICATION OF MATERIAL	1	CHEMA -stick-up	TIC	COMMENTS		
0	134012	5/9	50	403	(0'-2') Brown, silt with clay, trace of fine sand, roots, dryML/SC	1 2.0	T I		Grout 0-1'		
	(0-2)	16/15									
1	134020								1'		
	(0-2)	0/14					<		2" PVC Riser		
2		2/14 16/21	80	46	(2'-4') Same as above ML/SC						
3		10/21							Bentonite Pellets 1-3.5'		
									3.5'		
4		3/9	90	43.7	(4'-6') Brown, silt, trace of clay and fine sand, dry SC/ML		1 1		0.0		
		16/22			, , , , , , , , , , , , , , , , , , , ,				4.5'		
5											
		1/50						<	l ' '		
6		4/53 60/67	90	20	(6'-8') Same as above SC/ML				pack-3.5-15'		
7		60/67					L \$		0.010 Slot Sch. 40 PVC		
									Screen-4.5'-14.5'		
8	134013	5/13	80	22	(8'-10') Brown to Grey, clay with silt, trace of fine sand and fine,						
	(8-10)	14/24			gravel,dryCL/ML						
9											
10		10/05	50								
10		13/37 100/.3	50	21	(10'-11.5') Grey, clay with silt, fine to course gravel						
11		1007.3			(weathered shale), wetCL/ML Refusal at 11.5' bgs.						
					Note: Drilled to 15' bgs with HSAs.						
12											
13											
14											
14									14.5'		
15									14.5 15' Sump		
					Terminated soil boring at 15 feet bgs.	ļ .	l1		(14.5-15')		
						Ì			,		
						1					
						<u>L</u> _					
					COMMENTS:						

SAMPLING METHOD

SS = SPLIT SPOON

A = AUGER CUTTINGS

C = CORED

Collected soil samples 134012 (0'-2') bgs and 134013 (8'-10') bgs for B/N/A SVOCs. TAL Metals. Cyanide, and Nitrate analysis. Also, collected duplicate soil sample 134020 (0'-2') bgs for same parameters mentioned above. Installed 2-inch monitoring well. In field notebook as SB/MW13-9 for work during August and September 2001

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION



					2011		17
PARSONS ENGINEERING SO	CIENCE, INC.	CLIENT:	ACUE			WELL#: M	W-13-X
PROJECT: 10	SWMU			P	ROJECT NO:		
LOCATION:	EAD13			I	NSPECTOR:	Ed Ash	ta
				CH	ECKED BY:	Ed A	16th
DRILLING CONTRACTOR:	SJB, Z	NC.		P	OW DEPTH:	15'	
DRILLER:	John h	1410/20.	IN	STALLATION	STARTED:	8/15	10/0/420
DRILLING COMPLETED:	8115/01	<i>,</i>	INST	ALLATION C	OMPLETED:	A 1	
BORING DEPTH:			SURF	ACE COMPLE	TION DATE:	8/17/	01
DRILLING METHOD(S):	<u>HSA</u>		COMPLETION	ON CONTRAC	TOR/CREW:	SUB	
BORING DIAMETER(S):	8/2		BEDR	OCK CONFIR	MED (Y/N?)	·	
ASSOCIATED SWMU/AOC:	/3		ESTIMATE	D GROUND E	LEVATION:		
PROTECTIVE SURFACE CAS	ING:						
	DIAMETER:	9"x 9" stee	LENGTH:	3.5	_	TOR:	
RISER:		A		, (			
TOC:	TYPE:	PVC 40	DIAMETER:	2	LENGTH:		
SCREEN:				13			SLOT "
TSC: 4.5	TYPE:	PVC40	DIAMETER:	2	LENGTH:	10	SIZE: Ø.0/
POINT OF WELL: (SILT SUMP)	)						
YPE: IVE PULL	4	14.5	POW:	15			
GROUT:							
TG:	Crourel	TYPE: 5	Ce mut-Be	LENGTH:		1.0	
SEAL: TBS:	1.0	TYPE:	Bost, pelle	LENGTH:		2.5	
SAND PACK: TSP:	3 5"	TYPE:	# 0	LENGTH:		11.5	
SURFACE COLLAR:				ELNOTTI.			
TYPE:	RADIUS:	2'+2'	THEORY	TECC OF ITED	, (	777 Y OV 12 PO 0 0	
	. KADIO3		IHICK	VESS CENTER	:	THICKNESS	EDGE:
CENTRALIZER DEPTHS	DEDTILO						
DEPTH 1:	DEP1H 2:_		DEPTH 3:		_	DEPTH 4:	
COMMENTS:							
	*	ALL DEPTH ME	ASUREMENTS	REFERENCE	D TO GROU	IND SURFACE	
SEE PAGE 2 FOR SCHEMA?	TIC						}

### OVERBURDEN MONITORING WELL

15,0

BOV-

BOD.

PROTECTIVE RISER INSTALLATION DETAIL WELL#: MW-13-\$3 ACUE PARSONS ENGINEERING SCIENCE, INC. CLIENT: DATE: 8/15/0/ DEPTH **ELEV** -TPC--TOC-DESCRIPTION PIN-(FROM BORING LOG) DEPTH SCHEMATIC TG See Boring Log SB-13-9 TBS-TSP-TSC-BSC POW-

**BEDROCK** 

Contra	ector:	SJB, Inc			PARSONS ENGINEERING SCIENCE, INC. DRILLING RECORD		RING/		Sheet <u># 1</u> o <u>f 1 #</u> B-13-14/MW-13-14
Driller		John Wa		-	DMDDING RECORD		ation De		THE RESERVE OF THE PROPERTY OF
Inspec		E. Ashto		-	PROJECT NAME: Seneca Army Depot-SEAD-13		SEE SI		
Rig Ty		Mobile	J11	-	PROJECT NUMBER 736994	+-	SEE SI	IE FL.	AN
<b>^</b> ~~	pc.	17100110		-	1 ROJECT NUMBER 130374	+			
GRO	DUNDW/	ATER OB	SERVAT	IONS		Loc	ation Pla	an	
Water			Ī		Weather: Cloudy-70'F	-			
Level	Dry	Dry	Dry		J. J. J. J. J. J. J. J. J. J. J. J. J. J	7			
Date	8/17/01				Date/Time Start: 8/16/01-1404			SEE S	SITE PLAN
Time	0820	1000	1136			1			
Meas.					Date/Time Finish: 8/16/01-1711				
From	TOC	TOC	TOC			7			
Sampl	Sample	SPT	%	PID	FIELD IDENTIFICATION OF MATERIAL	sc	НЕМА	TIC	COMMENTS
Depth			Rec.	(ppm)		1	-stick-up		
0	134014	7/17	50	383	(0'-2') Brown, silt, fine sand, trace of clay, roots, dryML/SC	+			Grout 0-1'
	(0-2)	10/16							
1									1'
							1 4		2" PVC Riser
2		100/.4	20	320	(2'-4') Same as above. Encountered refusal at 2.4 ' bgs.				]
					Drilled with HSAs to 4' bgs.				Bentonite Pellets 1-3.5'
3									
						1			3.5'
4		21/41	50	55	(4'-5.4') Brown, silt, fine to medium gravel (weathered shale), fine		1 [		1
		100/.4		'	sand, trace of clay, dryML/SC				4.5'
5					Refusal at 5.4' bgs. Drilled with HSAs to 6' bgs.				1
								<	Filtered sand (#0)
6		10/26	80	50.1	(6'-8') Brown to light Grey, silt, fine sand, clay, fine to medium				pack-3.5-15'
		66/82		'	gravel (weathered shale), dryML/SC				0.010 Slot Sch. 40 PVC
7			!	<u> </u>					Screen-4.5'-14.5'
				!					
8		19/	10	80	(8'-9') Same as aboveML/SC				
		100/.4	<b></b>	<b></b>	Refusal at 9' bgs. Drilled with HSAs to 10' bgs.				
9		<b></b>	<u> </u>	<b></b>	-	Ì			
10		27/50	<u> </u>	<u> </u>					
10	134015	27/52	50	90	(10'-11.5') Same as aboveML/SC			i	
11	(10-11.5)	103		$\longrightarrow$	Refusal at 11.5' bgs.			١	
11			<b></b>	<b></b>	Note: Drilled to 15' bgs with HSAs.			Į	
12			<del></del>		1		$\square$	ļ	1
12			<del>  </del>	<del></del>			$\Box$	ļ	
13		<del></del>		<del></del>	I		<u> </u>		
1.0				<del></del>	I				
14			,				<u> </u>		
				,——	i		$\vdash$		14.5'
15					i		$\vdash$		14.5 Sump
10			,	<del></del>	Terminated soil boring at 15 feet bgs.	<del> </del>			(14.5-15')
-+			, —		Terminated son bornig at 15 feet bgs.				(14.0-10)
					i				
				,——	ı				
	-				i				
	- 1			-					
					1				
			;						
						İ			
					COMMENTS:	<del></del>			
:	SAMPLIN	<b>G МЕТНОІ</b>	D		Collected soil samples 134014 (0'-2') bgs and 134015 (10'-11.5') bgs for B/N/A SVOCs, 7	ΓAL Με	tals, Cyani	ide, and	Nitrate analysis. Installed 2-inch
	SS = SPLIT SPOO	N.			monitoring well. In field notebook as SB/MW13-10 for work during August and Septemb	ber 2001	<u>L</u>		

SS = SPLIT SPOON

A = AUGER CUTTINGS

C = CORED

### OVERBURDEN MONITORING WELL **COMPLETION REPORT & INSTALLATION DETAIL**

PROTECTIVE RISER COMPLETION

		r					
PARSONS ENGINEERING SO		CLIENT:	1COE			WELL#: 🎤	14-13-10
PROJECT: 10 S	WMU		_	P	ROJECT NO:	736 9	944
LOCATION: SEA	P 13		_		INSPECTOR:	_ Ed ;	Ashta
				CH	ÆCKED BY:	Ed A	shta
DRILLING CONTRACTOR:	STBI	Tre.		I	OW DEPTH:	15	•
DRILLER:	John W	arner		INSTALLATION	STARTED:	8/16	10/ 1904
DRILLING COMPLETED:	8116101		INS	TALLATION C	OMPLETED:	8/16/	
BORING DEPTH:	15'		SUR	FACE COMPLE	TION DATE:		
DRILLING METHOD(S):	H SA		COMPLET	TION CONTRAC	TOR/CREW:	SJBZ	nc
BORING DIAMETER(S):	8/2-	-jol.	BED	ROCK CONFIR	MED (Y/N?)		
ASSOCIATED SWMU/AOC:			ESTIMATI	ED GROUND E	LEVATION:		
PROTECTIVE SURFACE CAS	ING:						
	DIAMETER:	9" - 4" stee	LENGTH:	3.5	_	TOR:	
RISER:							
TOC:	TYPE:	PVC 40	DIAMETER:	2"	LENGTH:		
SCREEN:				****			SLOT
TSC: 4.5	TYPE:	PVC40	DIAMETER:	2	LENGTH:	10	SIZE: 0.01"
POINT OF WELL: (SILT SUMP							
YPE: NVC Pois	f BSC:	14.5'	POW	1: (5'			
GROUT:							
TG:	(vourd	TYPE:	Gmt-B	LENGTH:		1.0'	
SEAL: TBS:	A /		Bent, palle		·	2.5'	
SAND PACK: TSP:			d				
		TYPE:		LENGTH:		11.5	
SURFACE COLLAR:		2'x2'			, '		, (
TYPE:	RADIUS:		ТНІСК	NESS CENTER	:	THICKNES	SS EDGE:
CENTRALIZER DEPTHS							
DEPTH 1:	DEPTH 2:		DEPTH 3	:	<del>_</del>	DEPTH 4:	
COMMENTS:							
COMMENTS.							
		* ALL DEPTH MI	EASUREMENT	S REFERENCE	D TO GROU	IND SURFACE	
CEE DICE & FOR COVERY							

## OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ACOE WELL#: MW-13-10 PARSONS ENGINEERING SCIENCE, INC. CLIENT: DATE: 8/16/01 DEPTH **ELEV** -TPC--TOC-DESCRIPTION PIN-(FROM BORING LOG) DEPTH SCHEMATIC TG See Boring Log SB -13-10 TBS-TSP-- TSC-BSC-POW-15.0' - BOV-**BEDROCK** BOD.

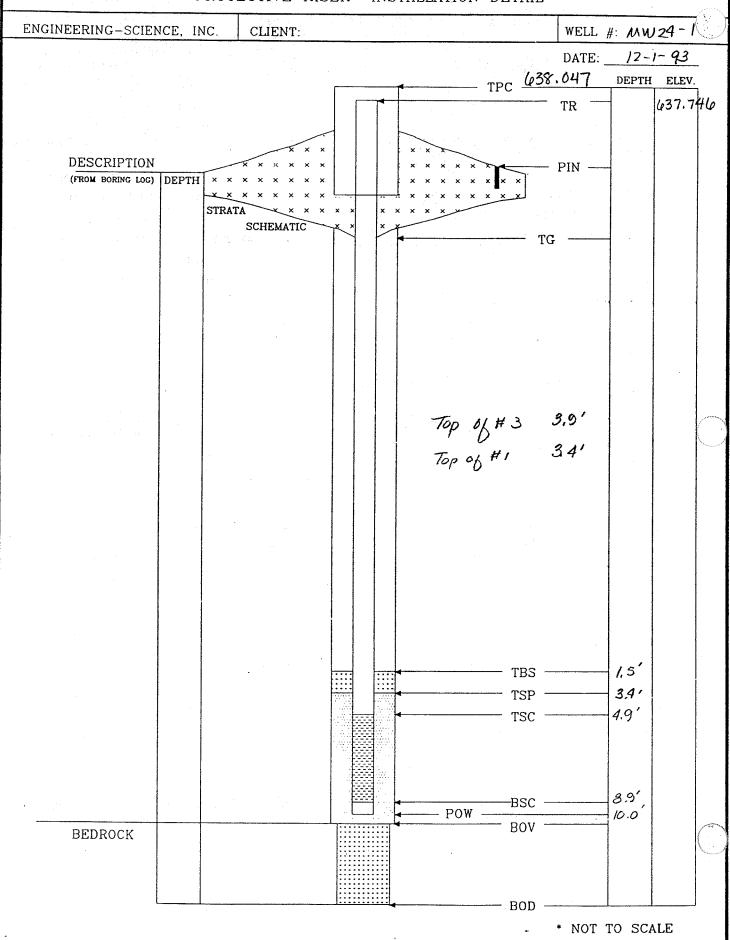
### OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL PROTECTIVE RISER COMPLETION

ENGINEERING-SCIENCE, INC. CLIENT:	ACOE WELL #: MW24-1
PROJECT: 10 SWMU	PROJECT NO: 5/3 24 -5
LOCATION: SEAD 24	INSPECTOR:
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH: 10.0'
DRILLER: Scott	INSTALLATION STARTED: 12-1-9.3
DRILLING COMPLETED: 12-1-93	INSTALLATION COMPLETED: 12-1-93
BORING DEPTH: 10.0'	SURFACE COMPLETION DATE:
DRILLING METHOD(S): H5A	COMPLETION CONTRACTOR/CREW: Empiré
BORING DIAMETER(S): 81/2 *	BEDROCK CONFIRMED (Y/N?)
ASSOCIATED SWMU/AOC: 24	estimated ground elevation: 635.374
PROTECTIVE SURFACE CASING:	
DIAMETER: 4"x 4" Steel	LENGTH:
RISER:	
TR: TYPE: <u></u> <i>PVC</i> -40	DIAMETER: $2''$ LENGTH:
SCREEN:	SLOT
TSC: 4.9' TYPE: PVC - 40	DIAMETER: 2" LENGTH: 4.0 SIZE: 001"
POINT OF WELL: (SILT SUMP)	
TYPE: PVC point BSC: 8,9'	POW: <u>10.0</u>
GROUT:	
TG: Ground Type	: Coment-bentonite LENGTH: 1,5'
SEAL: TBS: 1,5' TYPE	: bentonite pelluts LENGTH: 1.9'
SAND PACK: TSP: <u>34' #   </u> 35 # 3 TYPE	
SURFACE COLLAR:	
TYPE: Coment RADIUS: 2'x 2'	THICKNESS CENTER: /' THICKNESS EDGE: /'
CENTRALIZER DEPTHS	
DEPTH 1: DEPTH 2:	DEPTH 3: DEPTH 4:
COMMENTS	
COMMENTS:	
	1
* ALL DEPTH ME	ASUREMENTS REFERENCED TO GROUND SURFACE
CEE DAGE & DOD CONTRACTOR	

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

### OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL



OVERBURDEN MONITORING COMPLETION REPORT & INSTALLATION DETAIL ROADWAY BOX - SURFACE COMPLETION ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW 24- 2 PROJECT: 10 SWMU PROJECT NO: LOCATION: SEAD INSPECTOR: ES/LB CHECKED BY: DRILLING CONTRACTOR: Empire POW DEPTH: 16.0 DRILLER: INSTALLATION STARTED: 11/5/93 DRILLING COMPLETED: 11/5/93 INSTALLATION COMPLETED: 11/6/93 BORING DEPTH: 16.0 SURFACE COMPLETION DATE: DRILLING METHOD(S): BSΑ COMPLETION CONTRACTOR/CREW: Empire BORING DIAMETER(S): 81/2" BEDROCK CONFIRMED (Y/N?) ASSOCIATED SWMU/AOC: 24 ESTIMATED GROUND ELEVATION: 629.856 PROTECTIVE SURFACE CASING: DIAMETER: 4", 4" Steel LENGTH: TYPE: PVC 40 DIAMETER: SLOT TSC: 5.9' SIZE: 0.01 " POINT OF WELL: (SILT SUMP) TYPE: PVC point BSC: POW: 16.0 TG: Ground TYPE: Cem - benton to LENGTH: TBS: TYPE: Bentonto pellets LENGTH: SAND PACK: 44 # 1 4.9-#3 TYPE: #3 and #1 LENGTH:

ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

THICKNESS CENTER:

DEPTH 3:

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

RISER:

SCREEN:

GROUT:

SEAL:

SURFACE COLLAR:

COMMENTS:

CENTRALIZER DEPTHS

DEPTH 1:

TYPE: Cement

RADIUS:

DEPTH 2:

# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC. CLIENT: WELL #: MW24-2 (...) DATE: DEPTH ELEV. 632.281 TPC -DESCRIPTION PIN (FROM BORING LUG) DEPTH 632.176 -TR SCHEMATIC TG Cement bentonite Noks: grout Top of #3 sand 4.9'
Top of #1 sand 4.4'
Top of Weath.
Shale 9.3' Prot. Casing shekup 2,5' Downhole 2,5' TBS -TSP -4.4 TSC -59 90' screen 7 V water at 10.4. 1.1' connection 14.9' POW -16.0 BEDROCK - BOD -Al depths measured to ground SWIDGE \* NOT TO SCALE

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL ROADWAY BOX - SUPERCE COMPLETION

KOADWAT BOX -	SURFACE COMPLETION
ENGINEERING-SCIENCE, INC. CLIENT:	WELL #: MW 24- 3
PROJECT: 16 SWMU	PROJECT NO:
LOCATION: SEAD 24	INSPECTOR: ES
	CHECKED BY:
DRILLING CONTRACTOR: Empire	POW DEPTH: 15.0
DRILLER: A	INSTALLATION STARTED: 11/6/93
DRILLING COMPLETED: 11/6/93	INSTALLATION COMPLETED: 11/6/93
BORING DEPTH: 15.	SURFACE COMPLETION DATE:
DRILLING METHOD(S):HSA	COMPLETION CONTRACTOR/CREW: Empire
BORING DIAMETER(S): 81/2 //	BEDROCK CONFIRMED (Y/N?)
ASSOCIATED SWMU/AOC: 24	ESTIMATED GROUND ELEVATION: 629.080
PROTECTIVE SURFACE CASING:	
DIAMETER: 4"x 4" Spel	LENGTH: 5.0' total
RISER:	
TR: TYPE: PYC 40	DIAMETER: 2" LENGTH:
SCREEN:	SLOT
TSC: 4.9' TYPE: Pic 40	DIAMETER: 11   LENGTH: 0' SIZE: 0.0 "
POINT OF WELL: (SILT SUMP)	
TYPE: Pic point BSC: 13.9'	POW: 15.0
GROUT:	
TG: Gwind Type:	Cem-bontonik LENGTH: 28'
SEAL: TBS: 2.8' TYPE:	Sentonite pellets LENGTH: .6'
3.01 - 41	#3 # #1 Silica LENGTH: 11.61
SURFACE COLLAR:	
TYPE: Clinum RADIUS: 2'x2'	THICKNESS CENTER: 1' - THICKNESS EDGE: 1'
CENTRALIZER DEPTHS	
DEPTH 1: DEPTH 2:	DEPTH 3:
COMMENTS:	
SEE PAGE 2 FOR SCHEMATIC	UREMENTS REFERENCED TO GROUND SURFACE
LO TROL & FOR SCHEMATIC	_

### OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC. WELL #: MW 24-3 CLIENT: DATE: DEPTH ELEV. TPC -631.701 DESCRIPTION 631.531 (FROM BORING LOG) DEPTH SCHEMATIC TG Note: Top of #3 Sand 3.9'
Top of #1 Sand 3.4' Prol. Caping Stickup 25'30 30' Down hole 25'20 2.5´ 2<del>8</del>6′ TBS 3,4 1 TSP - TSC -49' I wake @ 10.0' 13.9' POW -15.0 **BEDROCK** Note: All depths measured from ground surface \* NOT TO SCALE

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998032.1 751123.1 GROUND SURFACE ELEVATION: 740.3

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

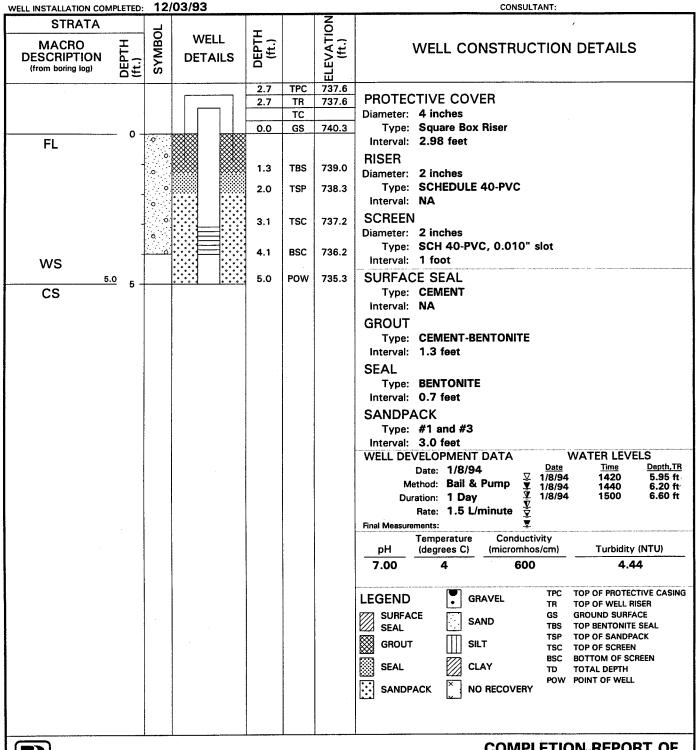
WELL INSTALLATION STARTED: 12/03/93

CHECKED BY: P.Feschbach-Meriney

DATUM: NGVD 88

GEOLOGIST: E. Schacht

CONSULTANT:



PARSONS

ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York **COMPLETION REPORT OF** WELL No. MW25-1

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998023.1 750973.4 GROUND SURFACE ELEVATION: 743.8 DRILLING CONTRACTOR: Empire Soils Investigation, Inc. DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger GEOLOGIST: E. Schacht

WELL INSTALLATION STARTED: 11/07/93 CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION STARTED: 11/07 WELL INSTALLATION COMPLETED: 11/07				CONSULTANT:
STDATA		1	Z	
MACRO E	WELL E E		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
	2.6	TPC	741.1	PROTECTIVE COVER
	2.6	TR	741.1	PROTECTIVE COVER
		TC		Diameter: 4 inches
o	0.0	GS	743.8	Type: Square Box Riser Interval: 2.84 feet
TL 3.3.3	$\bowtie$			
	₩ 1.2	TBS	742.6	RISER
				Diameter: 2 inches
<b>•</b> • • • • • • • • • • • • • • • • • •	2.0	TSP	741.8	Type: SCHEDULE 40-PVC
				Interval: NA
				SCREEN
	3.4	TSC	740.4	Diameter: 2 inches
				Type: SCH 40-PVC, 0.010" slot
•				Interval: 4 feet
5				SURFACE SEAL
WS :::				Type: CEMENT
CS				Interval: NA
				GROUT
				Type: CEMENT-BENTONITE
	7.4	BSC	736.4	Interval: 1.2 feet
				SEAL -
8.5	8.5	POW	735.3	Type: BENTONITE
				Interval: 0.8 feet
·				SANDPACK
				Type: <b>#1 and #3</b>
				Interval: 6.5 feet
				WELL DEVELOPMENT DATA WATER LEVELS  Date: 11/11/93 Date Time Depth,TR
				Date. 17/11/93
				Method: Ball & Pump ₹ 11/11/93 1430 10.24 ft
				Duration: 11 Days   ▼ 11/21/93
				Final Measurements:
				Temperature Conductivity
				pH (degrees C) (micromhos/cm) Turbidity (NTU)
				7.19 12 700 1.23
				LEGEND GRAVEL TPC TOP OF PROTECTIVE CASIN
.				CC COOLING CUREACE
				SURFACE SAND GS GROUND SURFACE TBS TOP BENTONITE SEAL
				TSP TOP OF SANDPACK
				GROOT SILI TSC TOP OF SCREEN  BSC BOTTOM OF SCREEN
				SEAL CLAY TO TOTAL DEPTH
				SANDPACK NO RECOVERY
				I SANDI ACK
<b>P</b>				COMPLETION REPORT OF
PARSONS	Sa	neca <i>l</i>	Armv D	WELL No. MW25-2

ENGINEERING-SCIENCE, INC. Romulus, New York

Seneca Army Depot

CHECKED BY: P.Feschbach-Meriney

#### **COMPLETION REPORT OF WELL No. MW25-3**

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998078.3 750926.3 GROUND SURFACE ELEVATION: 743.3

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger GEOLOGIST: E. Schacht

WELL INSTALLATION STARTED: 11/07/93 CHECKED BY:
WELL INSTALLATION COMPLETED: 11/07/93 CONSULTANT:

WELL INSTALLATION CON	APLETED:	11	/07/93				CONSULTANT:
STRATA						N	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
- , , <u>, , , , , , , , , , , , , , , , ,</u>				2.6	TPC	740.7	
				2.5	TR	740.7	PROTECTIVE COVER
					TC		Diameter: 4 inches
	<u> </u>			0.0	GS	743.3	Type: Square Box Riser
TL							Interval: 2.55 feet
	_		₩ ₩				RISER
				1.5	TBS	741.8	Diameter: 2 inches
	-						Type: SCHEDULE 40-PVC
				2.5	TSP	740.8	Interval: NA
	_						SCREEN
							Diameter: 2 inches
WS	_			4.0	TSC	739.3	Type: SCH 40-PVC, 0.010" slot
							Interval: 2 feet
	- 5-						SURFACE SEAL
CS	•						Type: CEMENT
				6.0	BSC	737.3	Interval: NA
6	.5			6.5	POW	736.8	GROUT
							Type: CEMENT-BENTONITE
							Interval: 1.5 feet
				İ			SEAL
							Type: BENTONITE
							Interval: 1.0 feet
							SANDPACK
							Type: #1 and #3
							Interval: 4.0 feet
							WELL DEVELOPMENT DATA WATER LEVELS
							Date: 11/9/93 <u>Date Time</u> <u>Depth,TR</u> ✓ 11/9/93 1345 4.80 ft
							Method: Bail & Pump ¥ 11/9/93 1405 9.50 ft
				ļ		ļ	Duration: 2 Days   ▼ 11/11/93 0930 4.90 ft  ▼ 11/11/93 1045 7.90 ft
							Hate: 1.0 L/minute \( \frac{7}{2} \) 11/11/93 1410 7.70 ft
							Final Measurements:
							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.42 12.2 500 1.73
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
						-	
							SURFACE SEAL SAND GS GROUND SURFACE TBS TOP BENTONITE SEAL
							VZZI OCAL
							GROUT SILT TSP TOP OF SANDPACK TSC TOP OF SCREEN
							SEAL CLAY BSC BOTTOM OF SCREEN TD TOTAL DEPTH
							POW POINT OF WELL
							SANDPACK NO RECOVERY
1							
		····					COMPLETION REPORT OF



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York COMPLETION REPORT OF WELL No. MW25-3

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998022.1 750983.2

GROUND SURFACE ELEVATION: 743.8

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DATUM: NGVD 88

DRILLING METHOD: Rock Coring

GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 10/31/95

CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 10/31/95

STRATA		7	·	_		N	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				1.8	TPC	742.0	PROTECTIVE COVER
	,			1.6	TR	742.2	PROTECTIVE COVER Diameter: 4 inches
				0.0	GS	743.8	Type: Round Box Riser
TL	- 0 -	., .		0.0		740.0	Interval: 10.6 feet
'							RISER
		<b>:</b> :	<b>****</b>				Diameter: 2 inches
	-		<b>****</b>				Type: SCHEDULE 40-PVC
	[	• √ •	<b>****</b>				Interval: NA
			<b>****</b>				SCREEN
	1		<b>****</b>				Diameter: 1.875 in.
	5 -	•.•	<b>***</b>				Type: WIRE & PVC, 0.010"
ws	_		<b>****</b>				Interval: 9 feet
CS			<b>****</b>				SURFACE SEAL
	ĺ		<b>****</b>				Type: CEMENT
			<b>****</b>				Interval: NA
			<b>****</b>				GROUT
			<b>***</b>				Type: CEMENT-BENTONITE
	ŀ		*****	9.4	TBS	734.4	Interval: 8.4 feet
							SEAL
							Type: BENTONITE
				11.4	TSP	732.4	Interval: 2.0 feet
							SANDPACK
		1					Type: Morie 0 and #1Q Rock Interval: 12.4 feet
				13.7	TSC	730.1	WELL DEVELOPMENT DATA WATER LEVELS
				13.7	.50	730.1	Date: 11/2/95 Date Time Depth,TR
							Method: Surge Block ▼ 11/2/95 1054 7.20 ft
							Duration: 1 Day $\frac{\bar{\mathbf{v}}}{\bar{\mathbf{v}}}$
							Rate: 0.936 L/minute
		i					Final Measurements:
		l					Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.16 13.8 600 12.1
		].					LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
							SURFACE GS GROUND SURFACE
							SEAL TBS TOP BENTONITE SEAL
							GROUT SILT TSP TOP OF SANDPACK TSC TOP OF SCREEN
							BSC BOTTOM OF SCREEN
		ļ		22.7	BSC	721.1	SEAL CLAY TO TOTAL DEPTH
							SANDPACK NO RECOVERY POW POINT OF WELL
23.0	В	ļ		23.8	POW	720.0	المسقا الإسبا



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

WELL No. MW25-4D

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998080.2 750937.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Rock Coring

WELL INSTALLATION STARTED: 10/30/95 WELL INSTALLATION COMPLETED: 10/30/95

ENGINEERING-SCIENCE, INC.

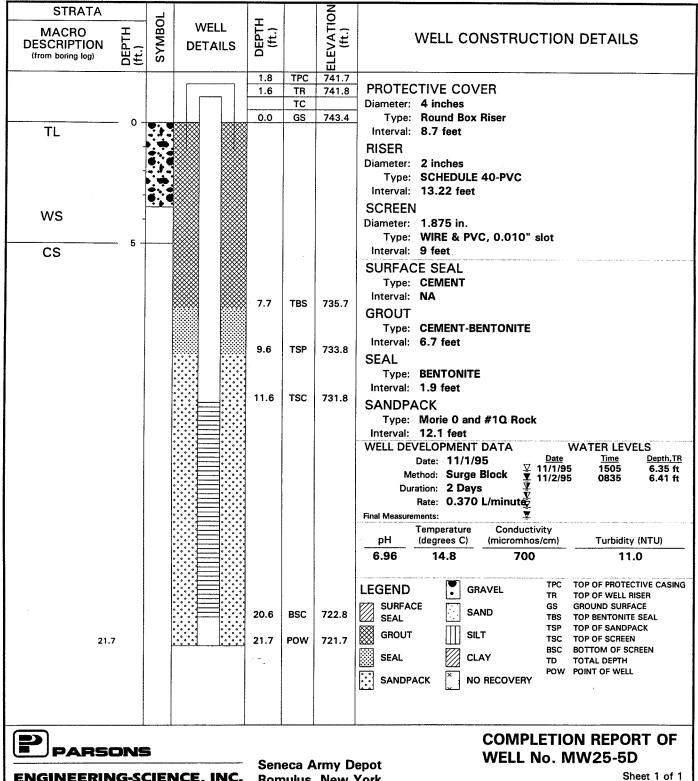
GROUND SURFACE ELEVATION: 743.4

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Merinev

CONSULTANT:



Romulus, New York

Sheet 1 of 1

#### COMPLETION REPORT OF WELL No. MW25-6

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998276.8 751006.2

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 09/25/95

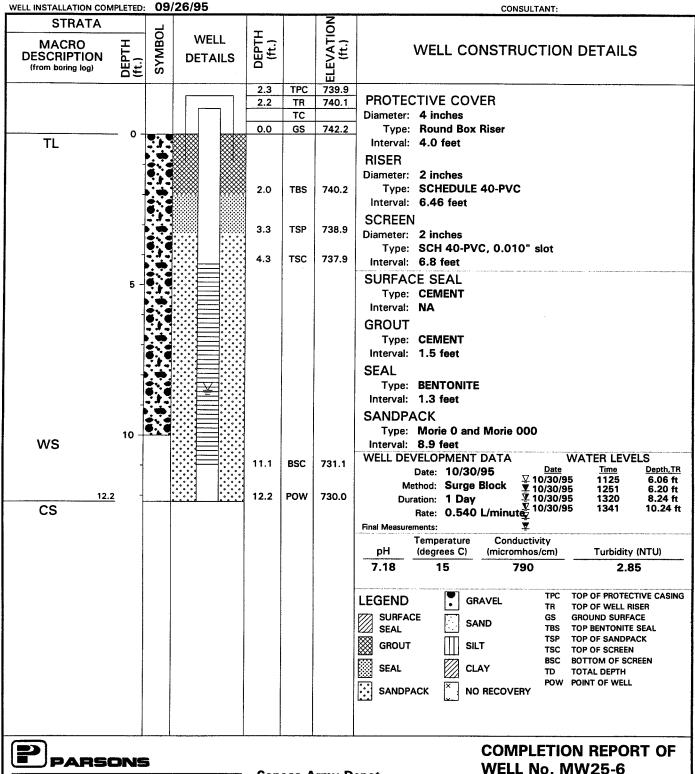
**ENGINEERING-SCIENCE, INC.** 

DATUM: NGVD 88 GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

CONSULTANT:

GROUND SURFACE ELEVATION: 742.2



Seneca Army Depot

Romulus, New York

Sheet 1 of 1

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

#### COMPLETION REPORT OF WELL No. MW25-7D

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998277.7 751015.9 GROUND SURFACE ELEVATION: 742.2

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Rock Coring

WELL INSTALLATION STARTED: 10/24/95

**ENGINEERING-SCIENCE, INC.** 

CHECKED BY: P.Feschbach-Meriney WELL INSTALLATION COMPLETED: 10/24/95

WELL INSTALLATION COM	PLETED:	10	/24/95				CONSULTANT:
STRATA						NC	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				2.1	TPC	740.2	DROTECTIVE COVER
				1.8	TR	740.5	PROTECTIVE COVER
				0.0	GS	742.2	Diameter: 4 inches Type: Round Box Riser
TL	- 0 -	47.4		0.0	GS	142.2	Interval: 17.6 feet
	-		<b>!</b> ₩₩ ₩₩				RISER
	-						Diameter: 2 inches
	-						Type: SCHEDULE 40-PVC
	-	<b>9</b> 7	<b> </b>				Interval: 21.88 feet
	5 -		<b>****</b>				SCREEN
	-						Diameter: 1.875 in.
	_	• •					Type: WIRE & PVC, 0.010" slot
	_	•	<b>                                      </b>				Interval: 9 feet
	_		₩ ¥ ₩				SURFACE SEAL
	10 -		<b>                                     </b>				Type: CEMENT
WS	10 -		<b>                                     </b>				Interval: 1 foot
	-						GROUT
CS	- ]						Type: CEMENT-BENTONITE Interval: NA
00							SEAL
			<b>                                      </b>				Type: BENTONITE
			<b>****</b>	400			Interval: 2.1 feet
				16.0	TBS	726.2	SANDPACK
							Type: Morie 0 and #1Q Rock
				18.1	TSP	724.1	Interval: 12.4 feet
							WELL DEVELOPMENT DATA WATER LEVELS
				20.1	TSC	722.1	Date: 10/31/95
					1		Duration: 1 Day
							Rate: 0.280 L/minutey
							Final Measurements:
							Temperature Conductivity
							pH         (degrees C)         (micromhos/cm)         Turbidity (NTU)           7.32         10.0         700         10.6
							7.02 10.0 700 10.0
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
Name of							IN TOP OF WELL RISER
				29.1	BSC	713.1	SURFACE SAND GS GROUND SURFACE TBS TOP BENTONITE SEAL
				30.2	POW	712.0	GROUT SILT TSP TOP OF SANDPACK TSC TOP OF SCREEN
30.5	5		<u> </u>	30.2	FUW	712.0	BEC POTTOM OF SCREEN
							SEAL CLAY TD TOTAL DEPTH POW POINT OF WELL
							SANDPACK NO RECOVERY
							Manari Mirani
<b>P</b>		_					COMPLETION REPORT OF
PARSO		5		San	ece A	\rmy D	WELL No. MW25-7D
				7611	vuu r		VPV.

Romulus, New York

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998076.8 750856.9 GROUND SURFACE ELEVATION: 741.4

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger

GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 09/26/95

CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 09/26/95

CONSULTANT:

WELL INSTALLATION COM STRATA	nrte (EU)		26/95			Z	CONSULTANT:
MACRO DESCRIPTION	Ħ.	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
(from boring log)	DEPTH (ft.)	SY	DETAILS			ELEV (	
				1.3	TPC	740.1 740.2	PROTECTIVE COVER
				3.1	TC	740.2	Diameter: 4 inches
	- o -			0.0	GS	741.4	Type: Round Box Riser
TL	_ 0-						Interval: 2.50 feet
							RISER
		ě, ě	<b>****</b>	1.4	TBS	740.0	Diameter: 2 inches
	-	•					Type: SCHEDULE 40-PVC
		3.3		2.4	TSP	739.0	Interval: 4.34 feet
1440	-	- 3 -		3.2	TSC	738.2	SCREEN
WS							Diameter: 2 inches
	-			4.0	BSC	737.4	Type: SCH 40-PVC, 0.010" slot
CS 4.	5		•	4.5	POW	736.9	Interval: 0.8 feet
							SURFACE SEAL
							Type: CEMENT Interval: NA
							GROUT
							Type: NA
							Interval: NA
							SEAL
							Type: BENTONITE
							Interval: 1.0 foot
							SANDPACK
							Type: Morie 0 and Morie 000
							Interval: 2.1 feet
					İ		WELL DEVELOPMENT DATA WATER LEVELS  Date: 10/22/95 Date Time Depth,TR
							2 10/20/95 1624 3.32 ft
			i				Duration: 3 Days
							Rate: 0.900 L/minute 10/22/95 1056 1.32 ft
							Final Measurements:
							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.35 14.5 350 7.3
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER
							SURFACE GS GROUND SURFACE
							SEAL IBS TOP BENTONTE SEAL
							GROUT SILT TSC TOP OF SCREEN
							SEAL CLAY BSC BOTTOM OF SCREEN TD TOTAL DEPTH
		İ					Edds POW POINT OF WELL
							SANDPACK NO RECOVERY
							COMPLETION REPORT OF
PARS	DNS	5					MELL ALLANAGE O



**ENGINEERING-SCIENCE, INC.** 

Seneca Army Depot Romulus, New York

WELL No. MW25-8

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998005.3 750898.1

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 09/26/95

WELL INSTALLATION COMPLETED: 09/26/95

GROUND SURFACE ELEVATION: 741.3

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION CON	APLETED:	09	26/95				CONSULTANT:
STRATA						N C	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				1.3	TPC	740.0	PROTECTIVE COVER
				1.1	TR	740.2	PROTECTIVE COVER
				0.0	GS	741.3	Diameter: 4 inches Type: Round Box Riser
TL	- 0-	<b>.</b> , .		0.0	us	741.3	Interval: 2.57 feet
1 =							RISER
	-		<b>****</b>	1.4	TBS	739.9	Diameter: 2 inches
							Type: SCHEDULE 40-PVC
	1	2.		2.4	TSP	738.9	Interval: 4.27 feet
		•					SCREEN
	1	•		3.2	TSC	738.1	Diameter: 2 inches
WS				4.0	BSC	737.3	Type: SCH 40-PVC, 0.010" slot
	1			4.5	POW	736.8	Interval: 0.8 feet
4.	.8						SURFACE SEAL
CS			i				Type: CEMENT
							Interval: NA
							GROUT
							Type: NA
							Interval: NA
							SEAL
							Type: BENTONITE
							Interval: 1.0 foot
							SANDPACK
							Type: Morie 0 and Morie 000
			İ				Interval: 2.1 feet WELL DEVELOPMENT DATA WATER LEVELS
							Date: 10/20/95 Date Time Depth,TR
							Method: Surge Block ¥ 10/20/95 1610 3.10 ft  10/20/95 0948 1.27 ft
							Duration: 3 Days  10/22/95 1040 2.87 ft
•							Rate: 0.320 L/minute 10/22/95 1150 3.50 ft
							Final Measurements:
							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.18 14.0 490 4.44
							7,174
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
							IN TOP OF WELL RISER
							SURFACE GS GROUND SURFACE SEAL TBS TOP BENTONITE SEAL
							GROUT TSP TOP OF SANDPACK
			•				BSC BOTTOM OF SCREEN
							SEAL CLAY TD TOTAL DEPTH
							SANDPACK NO RECOVERY POW POINT OF WELL
			Ì				المتعا الجدا
	1.		i				
		_					COMPLETION REPORT OF



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York COMPLETION REPORT OF WELL No. MW25-9

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997965.0 751000.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 09/27/95

GROUND SURFACE ELEVATION: 741.8

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 09/27/95 CONSULTANT: EVATION (ft.) **STRATA** SYMBOI WELL DEPTH (ft.) **MACRO** WELL CONSTRUCTION DETAILS DESCRIPTION **DETAILS** (from boring log) ᆸ 1.4 TPC 740.4 PROTECTIVE COVER 1.2 TR 740.6 Diameter: 4 inches TC Type: Round Box Riser 0.0 GS 741.8 Interval: 2.29 feet TL RISER 1.3 **TBS** 740.5 Diameter: 2 inches Type: SCHEDULE 40-PVC 2.4 **TSP** 739.4 Interval: 4.41 feet **SCREEN** TSC 738.6 Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 2.0 feet WS SURFACE SEAL 5.2 BSC 736.6 Type: CEMENT 5.6 POW 5.6 736.2 Interval: 0.8 feet CS GROUT Type: NA Interval: NA **SEAL** Type: BENTONITE Interval: 1.1 feet **SANDPACK** Type: Morie 0 and Morie 000 Interval: 2.8 feet WELL DEVELOPMENT DATA WATER LEVELS Date: 10/25/95 <u>Time</u> Depth,TR ▼ 10/22/95 ▼ 10/22/95 1310 1759 1.67 ft 4.30 ft Method: Surge Block Duration: 4 Days ¥ 10/23/95 1643 2.38 ft Rate: 0.090 L/minute 10/24/95 1315 2.86 ft Final Measurements: Conductivity Temperature (degrees C) Turbidity (NTU) Hq (micromhos/cm) 5.46 7.30 14 9 425 TOP OF PROTECTIVE CASING TPC GRAVEL **LEGEND** TR TOP OF WELL RISER **SURFACE** GS GROUND SURFACE SAND TOP BENTONITE SEAL SEAL TOP OF SANDPACK **GROUT** SILT TOP OF SCREEN **BOTTOM OF SCREEN BSC SEAL** CLAY TOTAL DEPTH TD POW POINT OF WELL **SANDPACK** NO RECOVERY



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**COMPLETION REPORT OF** WELL No. MW25-10

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997865.7 750956.7

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

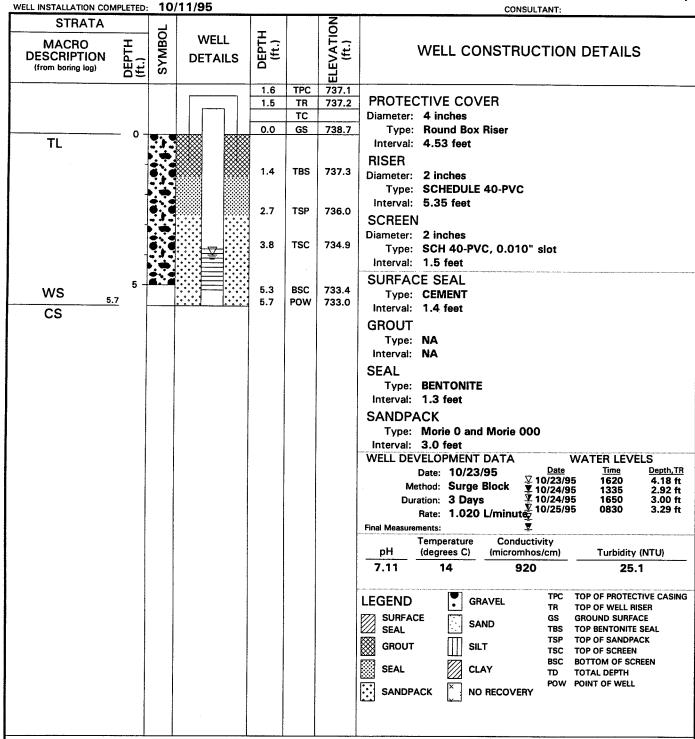
DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 10/11/95

GROUND SURFACE ELEVATION: 738.7

DATUM: NGVD 88 GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney





ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**COMPLETION REPORT OF WELL No. MW25-11** 

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997866.1 750967.3

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

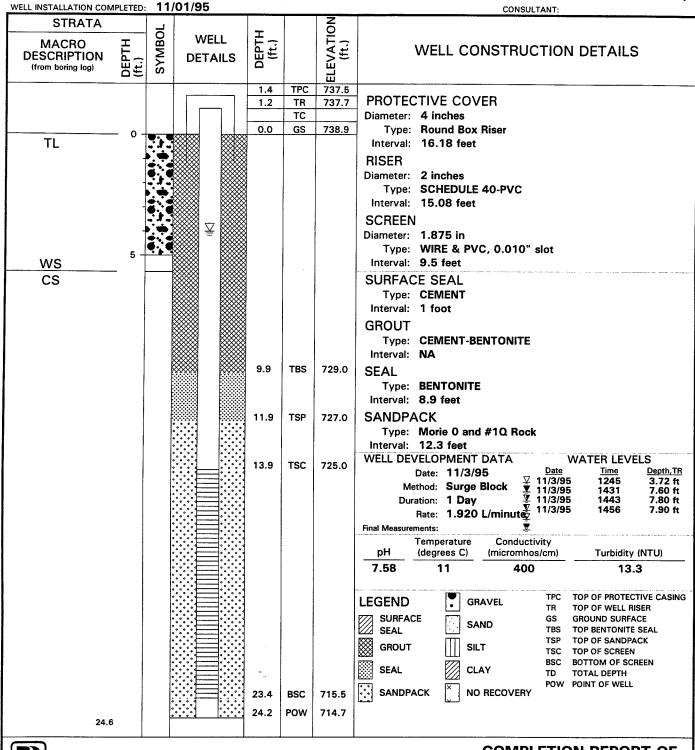
WELL INSTALLATION STARTED: 11/01/95

DRILLING METHOD: Rock Coring

GROUND SURFACE ELEVATION: 738.9 DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney



PARSONS

ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**COMPLETION REPORT OF** WELL No. MW25-12D

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997866.5 750869.7

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

GROUND SURFACE ELEVATION: 737.9
DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger

GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 10/11/95

CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 10/11/95 CONSULTANT:

WELL INSTALLATION CON	APLETED:	10/	11/95		,		CONSULTANT:
STRATA						NO	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
		, ,				<u> </u>	
				1.8 1.7	TPC	736.2 736.3	PROTECTIVE COVER
				1.7	TC	/30.3	Diameter: 4 inches
				0.0	GS	737.9	Type: Round Box Riser
TL	- 0-	<b>.</b>		0.0		707.0	Interval: 2.76 feet
<b>'</b>				1.0	TBS	736.9	RISER
	Ī					700.0	Diameter: 2 inches
		- 4				705.0	Type: SCHEDULE 40-PVC
	-			2.1	TSP	735.8	Interval: 4.38 feet
				2.7	TSC	735.2	SCREEN
ws	-			3.5	BSC	734.4	Diameter: 2 inches
4.	.0			4.0	POW	733.9	Type: SCH 40-PVC, 0.010" slot
CS						. 55.5	Interval: 0.8 feet
							SURFACE SEAL
							Type: CEMENT
							Interval: 1.4 feet
							GROUT
							Type: NA
							Interval: NA
							SEAL
							Type: BENTONITE
							Interval: 1.1 feet
	1						SANDPACK
							Type: Morie 0 and Morie 000
							Interval: 1.9 feet
							WELL DEVELOPMENT DATA WATER LEVELS
							Date: 10/25/95
							Method: Surge Block ▼ 10/25/95 1035 4.46 ft
							Duration: 9 Days   ▼ 10/25/95 1202 4.69 ft  Rate: 0.050 L/minuts 10/30/95 1040 5.50 ft
							10/31/95 1610 5.63 ft
							Final Measurements:
							pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.10 14.0 1000 9.66
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
							TR TOP OF WELL RISER
							SURFACE GS GROUND SURFACE TBS TOP BENTONITE SEAL
							CROUT TSP TOP OF SANDPACK
							BSC BOTTOM OF SCREEN
							SEAL CLAY TO TOTAL DEPTH
							SANDPACK NO RECOVERY POW POINT OF WELL
							المعالمة الم
							COMPLETION REPORT OF
		_					CONTLETION REPORT OF



**ENGINEERING-SCIENCE, INC.** 

Seneca Army Depot Romulus, New York COMPLETION REPORT OF WELL No. MW25-13

WELL No. MW25-14D

Sheet 1 of 1

# **COMPLETION REPORT OF WELL No. MW25-14D**

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997866.5 750876.2 GROUND SURFACE ELEVATION: 738.2 DATUM: NGVD 88

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Rock Coring GEOLOGIST: F. O'Loughlin WELL INSTALLATION STARTED: 10/31/95 CHECKED BY: P.Feschbach-Meriney

VELL INSTALLATION COM	PLETED:	10	/31/95				CONSULTANT:
STRATA						Z	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				1.8	TPC	736.4	
				1.6	TR	736.6	PROTECTIVE COVER
					TC		Diameter: 4 inches
	- 0 -			0.0	GS	738.2	7
TL				}			Interval: 12.39 feet
	-			{			RISER
	_	• •	<b>                                     </b>	\$			Diameter: 2 inches
		• 🗢	₩ ⋤ ₩	}			Type: SCHEDULE 40-PVC
WS	_		₩₩ = ₩₩	1			Interval: 14.69 feet
			<b>****</b>				SCREEN
CS	_		<b>                                     </b>				Diameter: 1.875 in
				8			Type: WIRE & PVC, 0.010" slot
				\$			Interval: 9 feet
				3			SURFACE SEAL
			<b>                                     </b>	1			Type: CEMENT
			₩ ₩	<b>X</b>			Interval: 1 foot
			<b>****</b>	1			GROUT
			<b>****</b>	9.2	TBS	729.0	Type: CEMENT-BENTONITE Interval: 8.2 feet
				0.2		725.0	
							SEAL
					TOD	707.0	Type: BENTONITE
				11.2	TSP	727.0	Interval: 2.0 feet
							SANDPACK
				13.1	TSC	725.1	Type: Morie 0 and #1Q Rock Interval: 12 feet
				13.1	130	725.1	WELL DEVELOPMENT DATA WATER LEVELS
							Date: 11/2/95 Date Time Depth,TF
							Method: Surge Block
					,		Duration: 2 Davs
							Rate: <b>0.960 L/minute</b>
							Final Measurements:
							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.66 11 390 16.9
							7.00
							LECENID TPC TOP OF PROTECTIVE CASIN
andropy in							TR TOP OF WELL RISER
							SURFACE SEAL SAND GS GROUND SURFACE TBS TOP BENTONITE SEAL
							GROUT TSP TOP OF SANDPACK
-				22.1	BSC	716.1	TSC TOP OF SCREEN  SSC BOTTOM OF SCREEN
				44.1	530	710.1	SEAL CLAY TO TOTAL DEPTH
	_			23.2	POW	715.0	SANDPACK NO RECOVERY
23.5	•						The state of the s
							COMPLETION REPORT OF
		_					OUTH LETTON INEL ONLY OF

Seneca Army Depot

Romulus, New York

**ENGINEERING-SCIENCE, INC.** 

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997974.2 750764.4 GROUND SURFACE ELEVATION: 739.6

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

DATUM: NGVD 88 GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 10/10/95 CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 10/10/95

WELL INSTALLATION CON	IPLETED:	10/	10/95		7		CONSULTANT:
STRATA		ا بر				6	
MACRO	DEPTH (ft.)	SYMBOL	WELL	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
DESCRIPTION (from boring log)	E E	Σ	DETAILS	DE		<u>}</u> =	W=== 00.101.1001.1011 BE17.120
(Holli bolling log/	ב≖	တ					
				1.6	TPC	738.0	
				1.4	TR	738.2	PROTECTIVE COVER
					TC		Diameter: 4 inches
	- o-	<b>.</b> .		0.0	GS	739.6	Type: Round Box Riser
TL		- 4					Interval: 3.22 feet
	-		<b>****</b>				RISER
		• •	<b>****</b>	1.6	TBS	738.0	Diameter: 2 inches
	-	• •					Type: SCHEDULE 40-PVC
		3:3					Interval: 5.29 feet
	_			2.9	TSP	736.7	SCREEN
		•					Diameter: 2 inches
		Ÿ.,		3.9	TSC	735.7	Type: SCH 40-PVC, 0.010" slot
ws							Interval: 1.5 feet
	5 -						SURFACE SEAL
				5.4	BSC	734.2	Type: CEMENT
6.	2	ŀ		5.8	POW	733.8	Interval: 1 foot
CS	-						GROUT
							Type: NA
							Interval: NA
	1						SEAL
			ĺ				Type: <b>BENTONITE</b>
							Interval: 1.3 feet
		1					SANDPACK
	1						Type: Morie 0 and Morie 000
	1						Interval: 2.9 feet
	1						WELL DEVELOPMENT DATA WATER LEVELS
							Date: 10/22/95
							Method: Surge Block ₹ 10/25/95 1300 3.20 ft
		ŀ					Duration: 10 Days ¥ 10/30/95 1018 4.36 ft 10/31/95 1520 5.00 ft
							Rate: 0.050 L/minute 11/1/95 1007 4.57 ft
		ŀ					Final Measurements: \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
*							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
	.						6.93 15.0 450 8.38
	I						
		l					LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
							TR TOP OF WELL RISER
		l					SURFACE GS GROUND SURFACE SEAL TBS TOP BENTONITE SEAL
		ļ					TOD TOD OF CANDOA OF
			İ				100 10. 01 001221
							SEAL CLAY BSC BOTTOM OF SCREEN TD TOTAL DEPTH
							POW POINT OF WELL
							SANDPACK NO RECOVERY
<u></u>						1	AOSEDI ETIONI DEDORT OF
PARS		•					COMPLETION REPORT OF
CARS	-142	•		_	_	_	WELL No. MW25-15



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**WELL No. MW25-15** 

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 997975.4 750773.2

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Rock Coring

WELL INSTALLATION STARTED: 10/25/95

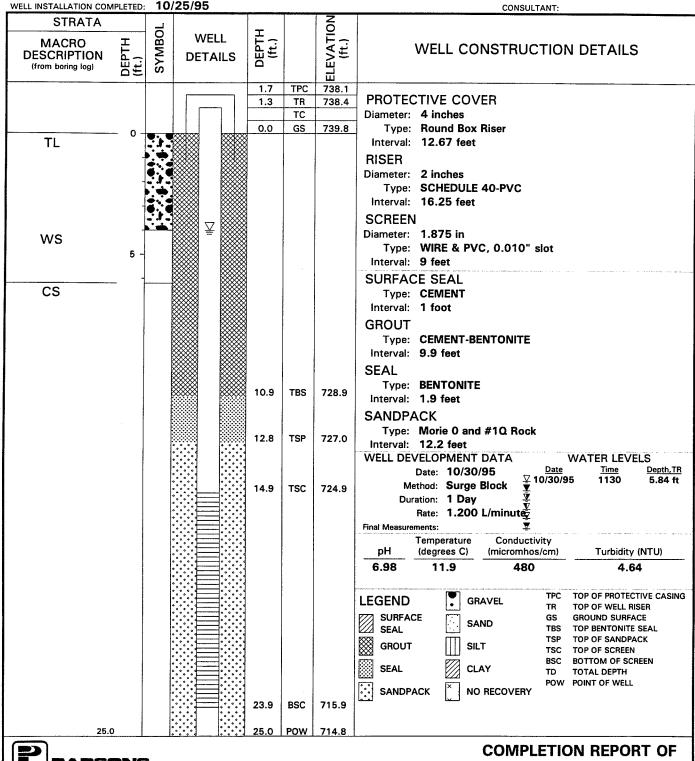
GROUND SURFACE ELEVATION: 739.8

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

10/25/95 CONSULTANT:



**PARSONS** 

ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

WELL No. MW25-16D

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998187.6 750963.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 10/16/95

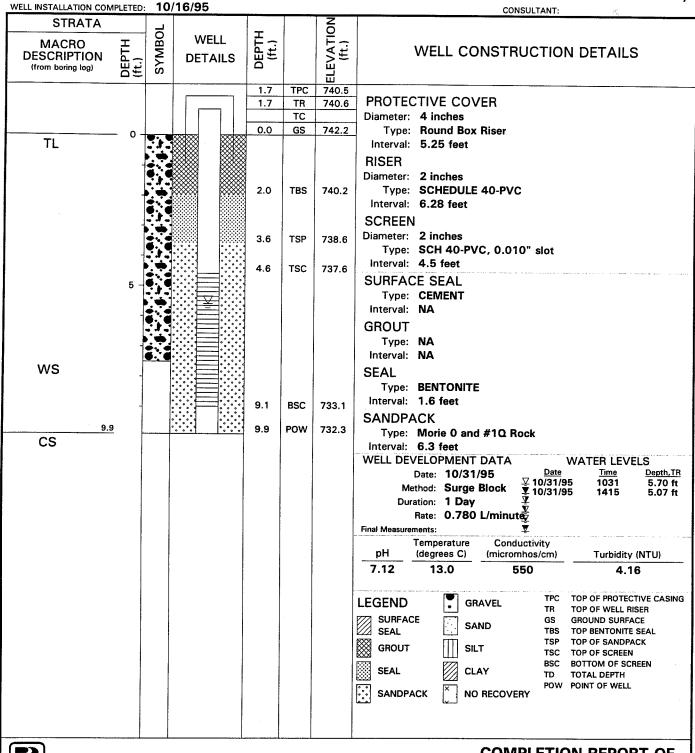
GROUND SURFACE ELEVATION: 742.2

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Merinev

CONSULTANT:



**PARSONS** 

ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**COMPLETION REPORT OF** WELL No. MW25-17

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998116.3 751082.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 10/16/95

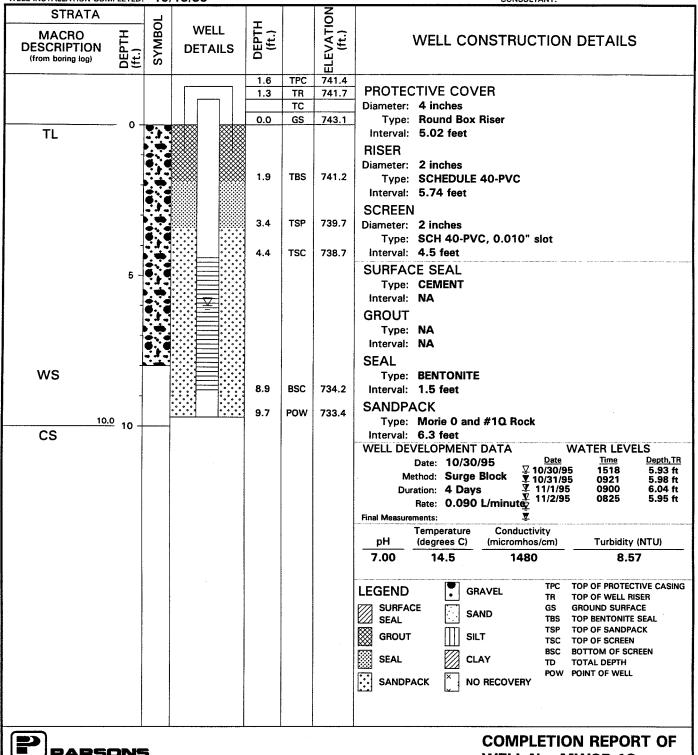
GROUND SURFACE ELEVATION: 743.1

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

10/16/95 WELL INSTALLATION COMPLETED: CONSULTANT:





ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**WELL No. MW25-18** 

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 998135.0 750762.5

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

GROUND SURFACE ELEVATION: 740.1

DATUM: NGVD 88 DRILLING METHOD: Hollow Stem Auger GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 10/07/95 CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 10/07/95 CONSULTANT:

WELL INSTALLATION CO	OMPLETED	: 10,	07/95				CONSULTANT:
STRATA						Z	
MACRO DESCRIPTION (from boring log)	王	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
		<del> </del>		1.9	TPC	738.1	
				1.9	TR	738.2	PROTECTIVE COVER
					TC	1	Diameter: 4 inches
	•			0.0	GS	740.1	Type: Round Box Riser
TL	0 -						Interval: 3.95 feet
· <del>-</del>							RISER
		2 2	<b>****</b>				1
			<b>****</b>			700.4	Diameter: 2 inches Type: SCHEDULE 40-PVC
				2.0	TBS	738.1	
		Ŏ, Č				1	Interval: 7.15 feet
	-				1	1	SCREEN
							Diameter: 1.875 in.
				4.0	TSP	736.1	Type: WIRE & PVC, 0.010" slot
		• 🗢					Interval: 4.5 feet
	5 -	3:3		F ^	TC0	70.0	SURFACE SEAL
	-			5.3	TSC	734.8	Type: CEMENT
							Interval: NA
		• •					GROUT
							Type: NA
	-	2.9					Interval: NA
ws	-	\ <u></u>					SEAL
VVS							Type: BENTONITE
	-						Interval: 2.0 feet
				9.8	BSC	730.3	SANDPACK
10	0.2 10 -			10.2	POW	729.9	Type: Morie 0 and Morie 000
CS							Interval: 6.2 feet
							WELL DEVELOPMENT DATA WATER LEVELS
							Date: 10/22/95
							Method: Surge Block <u>v</u>
							Duration: 1 Day $\frac{V}{V}$
							Rate: 0.780 L/minute
							Final Measurements:
							Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
							6.96 16 550 5.87
							TOO TOO OF SPOTFORM'S OLONG
							LEGEND GRAVEL TPC TOP OF PROTECTIVE CASING
						ļ	SURFACE GS GROUND SURFACE
							SEAL TBS TOP BENTONITE SEAL
							GROUT SILT TSP TOP OF SANDPACK TSC TOP OF SCREEN
							BSC BOTTOM OF SCREEN
							SEAL CLAY TO TOTAL DEPTH
							SANDPACK NO RECOVERY
							ONINDI NON
			1				
<del></del>				,			COMPLETION DEPOSE OF
PARS		=					COMPLETION REPORT OF
				C	^	P	well No. MW25-19



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992227.7 751590.6 GROUND SI

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 11/17/93

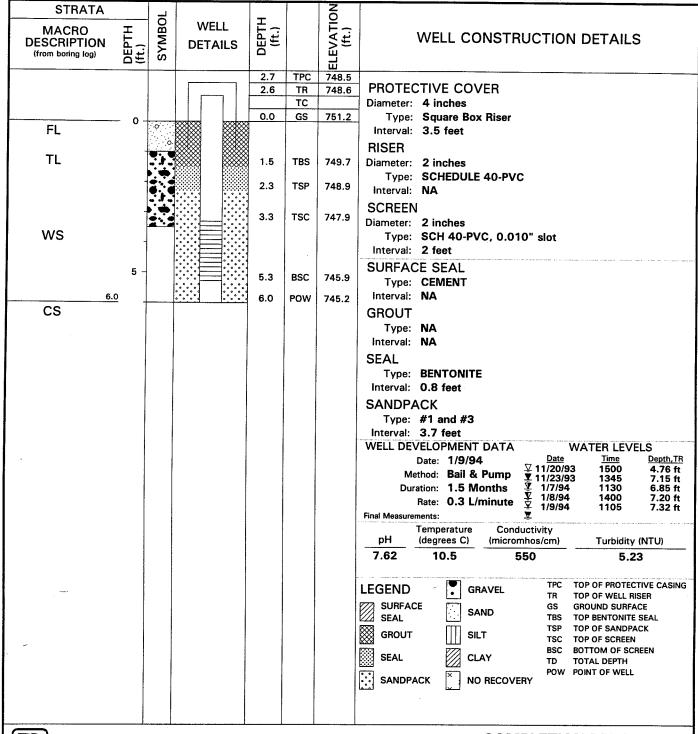
WELL INSTALLATION COMPLETED: 11/17/93

GROUND SURFACE ELEVATION: 751.2

DATUM: NGVD 88

GEOLOGIST: E. Schacht
CHECKED BY: F. O'Loughlin

CONSULTANT:





ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York COMPLETION REPORT OF WELL No. MW26-1

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992768.1 751107.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 11/18/93 11/18/93

WELL INSTALLATION COMPLETED:

PARSONS

ENGINEERING-SCIENCE, INC.

GROUND SURFACE ELEVATION: 753.8

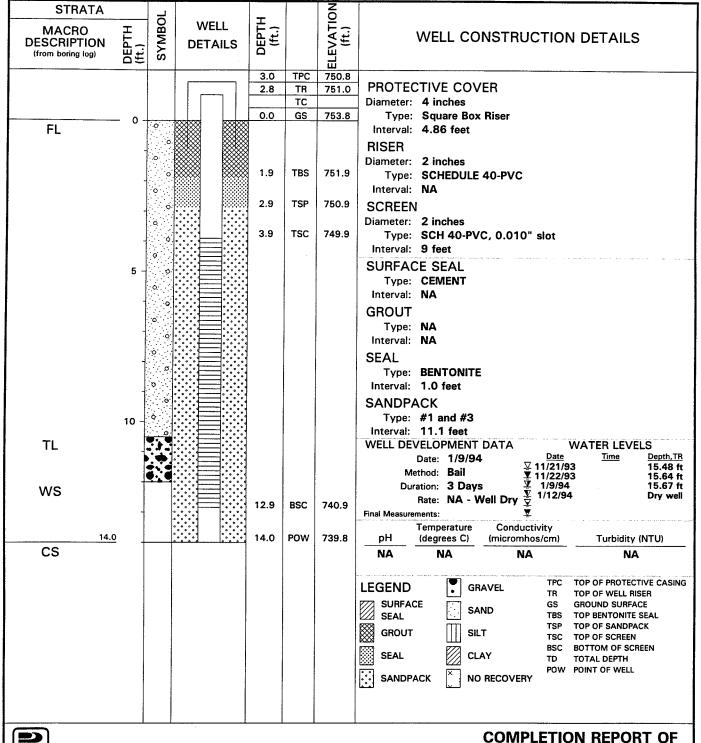
DATUM: NGVD 88

WELL No. MW26-2

Sheet 1 of 1

GEOLOGIST: E. Schacht CHECKED BY: F. O'Loughlin

CONSULTANT:



Seneca Army Depot

Romulus, New York

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992216.8 751115.5

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

GROUND SURFACE ELEVATION: 751.5 DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger

GEOLOGIST: E. Schacht

WELL INSTALLATION STARTED: 11/18/93

CHECKED BY: F. O'Loughlin CONSULTANT:

WELL INSTALLATION COMPLETED: 11/18/93

WELL INSTALLATION CON	VIPLE I ED:	1 1/	16/93		_		CONSULTANT:
STRATA						ELEVATION (ft.)	
MACDO	<del>-</del>	SYMBOL	WELL	DEPTH (ft.)	1	Ĕ_	
MACRO	DEPTH (ft.)	Ξ		<u>.</u>	1	₹ #:	WELL CONSTRUCTION DETAILS
DESCRIPTION (from boring log)	급 (급	∑	DETAILS	四 )		≧ ⊂	
(from boining log)	□ ±	S			i	出	
				2.7	TPC	748.8	
				2.6	TR	748.9	PROTECTIVE COVER
					TC		Diameter: 4 inches
	_			0.0	GS	751.5	Type: Square Box Riser
FL	— o-	- o			1		Interval: 4.55 feet
FL							
	4		XXX XXX				RISER
	}	.0	<b>****</b>				Diameter: 2 inches
		· · · o	**************************************	1.8	TBS	749.7	Type: SCHEDULE 40-PVC
	1						Interval: NA
				2.8	TSP	748.7	
		0.					SCREEN
		Ö,					Diameter: 2 inches
		ó				1	Type: SCH 40-PVC, 0.010" slot
	1			4.3	TSC	747.2	Interval: 9 feet
		0					SURFACE SEAL
	5 -	0					
		٥					Type: CEMENT
							Interval: NA
							GROUT
	ŀ	0					Type: CEMENT-BENTONITE
	1	0.					Interval: 1.8 feet
	[	· 6					
1	+						SEAL
	ŀ						Type: BENTONITE
	1	0			ł		Interval: 1.0 feet
	ľ	0.					SANDPACK
		· 6					Type: #1 and #3
TL	10	9,4	⋯≔≕⋯				Interval: 11.2 feet
I L							WELL DEVELOPMENT DATA WATER LEVELS
	-[.		****				
	1	ė., e					7 44/20/20 4040
							Method: Bail & Pump ¥ 11/20/93 1635 11.76 ft
ws	T						Duration: 1 Day
110							Rate: 1.26 L/minute 💆
	+			13.3	BSC	738.2	Final Measurements:
							Temperature Conductivity
14.	<u>.o</u>			14.0	POW	737.5	pH (degrees C) (micromhos/cm) Turbidity (NTU)
CS							6.64 11 700 5.32
<u> </u>							
							TPC TOP OF PROTECTIVE CASING
							LEGEND GRAVEL TR TOP OF WELL RISER
							SURFACE GS GROUND SURFACE
							SEAL TBS TOP BENTONITE SEAL
					}		GROUT TSP TOP OF SANDPACK TSC TOP OF SCREEN
					}		
							SEAL CLAY BSC BOTTOM OF SCREEN TD TOTAL DEPTH
							BOW BOINT OF WELL
					1		SANDPACK NO RECOVERY
		]					<u>                                    </u>
							COMPLETION REPORT OF



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

COMPLETION REPORT OF WELL No. MW26-3

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 991690.8 751126.3

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 11/19/93

PARSONS

**ENGINEERING-SCIENCE, INC.** 

GROUND SURFACE ELEVATION: 750.1

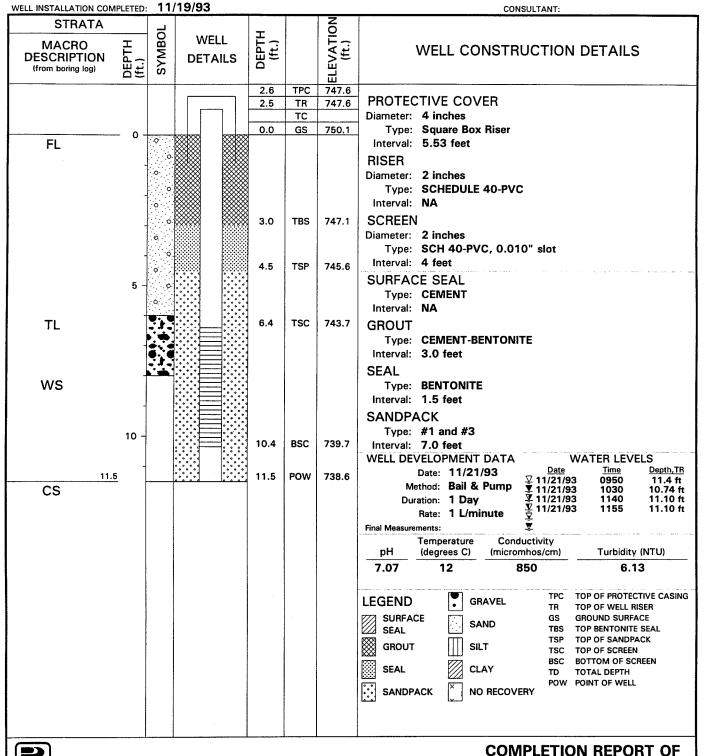
DATUM: NGVD 88

GEOLOGIST: E. Schacht

CHECKED BY: F. O'Loughlin

WELL No. MW26-4

Sheet 1 of 1



Seneca Army Depot

Romulus, New York

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992271.2 751169.2

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

GROUND SURFACE ELEVATION: 754.6 DATUM: NGVD 88

DRILLING METHOD: Hollow Stem Auger

GEOLOGIST: F. O'Loughlin

WELL INSTALLATION STARTED: 09/24/95 CHECKED BY: P.Feschbach-Meriney 09/24/95 WELL INSTALLATION COMPLETED: CONSULTANT: **STRATA** EVATION (ft.) DEPTH (ft.) SYMBO WELL **MACRO** WELL CONSTRUCTION DETAILS DEPTI (ft.) DESCRIPTION **DETAILS** (from boring log) 핍 2.4 TPC 752.3 PROTECTIVE COVER 2.1 TR 752.6 Diameter: 4 inches TC GS Type: Square Box Riser 0.0 754.6 Interval: 4.9 feet FL RISER ٥. Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: 6.8 feet o 2.5 TBS 752.1 **SCREEN** Diameter: 2 inches 3.8 **TSP** 750.8 Type: SCH 40-PVC, 0.010" slot Interval: 8.95 feet 4.9 TSC 749.7 SURFACE SEAL 5 Type: CEMENT Interval: NA **GROUT** Type: NA Interval: NA **SEAL** Type: BENTONITE TL Interval: 1.3 feet **SANDPACK** Type: Morie 0 and Morie 000 Interval: 10.05 feet WS WELL DEVELOPMENT DATA WATER LEVELS Date Time Depth,TR Date: 10/19/95 <sup>™</sup> 10/17/95 1514 12.66 ft Method: Surge Block ¥ 10/18/95 ¥ 10/18/95 1128 12.68 ft Duration: 3 Days 1253 13.57 ft ¥ 10/18/95 12.74 ft 1712 Rate: 0.24 L/minute Final Measurements: Temperature Conductivity 13.9 **BSC** 740.8 Turbidity (NTU) pН (degrees C) (micromhos/cm) 6.55 15.5 925 8.5 15.0 15 15.0 POW 739.6 CS TOP OF PROTECTIVE CASING **GRAVEL LEGEND** TOP OF WELL RISER TR GROUND SURFACE SURFACE GS SAND TBS TOP BENTONITE SEAL SEAL TOP OF SANDPACK TSP GROUT SILT TOP OF SCREEN TSC BOTTOM OF SCREEN BSC SEAL CLAY TD TOTAL DEPTH POW POINT OF WELL SANDPACK NO RECOVERY



ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

**COMPLETION REPORT OF** WELL No. MW26-5

Sheet 1 of 1

## COMPLETION REPORT OF WELL No. MW26-6

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992233.8 751252.0

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

09/23/95

DRILLING METHOD: Hollow Stem Auger

ENGINEERING-SCIENCE, INC.

09/23/95 WELL INSTALLATION STARTED:

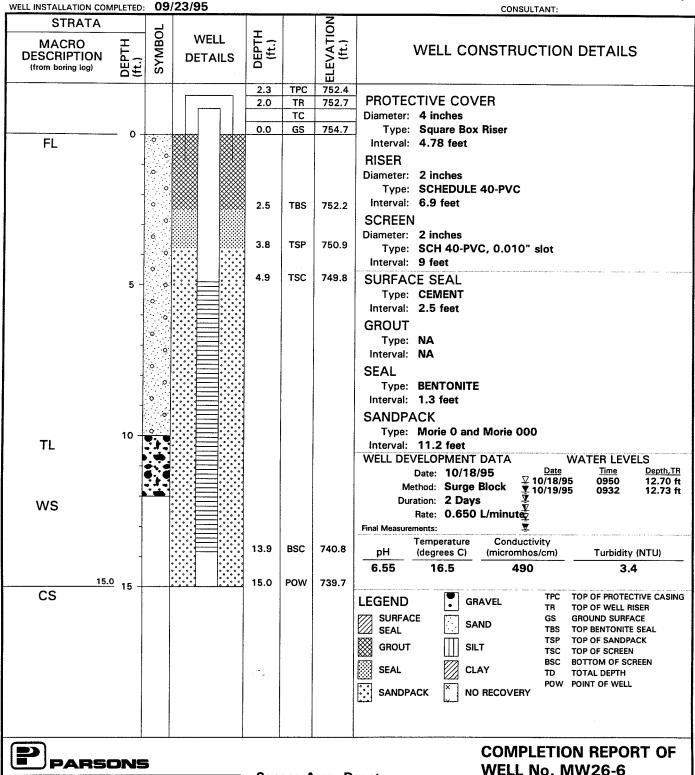
GROUND SURFACE ELEVATION: 754.7

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

CONSULTANT:



Seneca Army Depot

Romulus, New York

DATUM: NGVD 88

### COMPLETION REPORT OF WELL No. MW26-7

PROJECT: SEAD-25 & SEAD-26 RI/FS

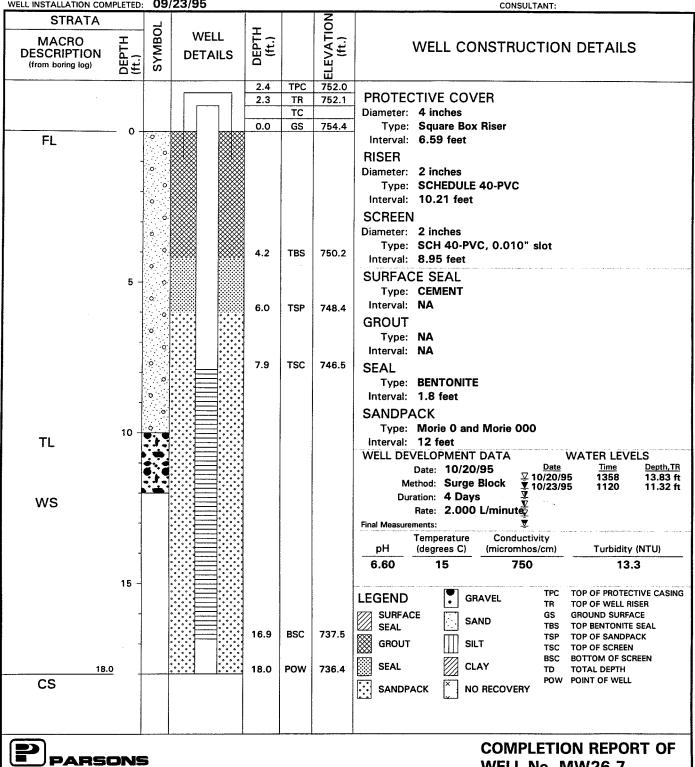
PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992178.9 751194.1 GROUND SURFACE ELEVATION: 754.4

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger GEOLOGIST: F. O'Loughlin WELL INSTALLATION STARTED: 09/23/95 CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 09/23/95 CONSULTANT:





ENGINEERING-SCIENCE, INC.

Seneca Army Depot Romulus, New York

WELL No. MW26-7

Sheet 1 of 1

### COMPLETION REPORT OF WELL No. MW26-8

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 991754.6 751203.8 GROUND SURFACE ELEVATION: 750.5

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

ire Soils Investigation, Inc. DATUM: NGVD 88

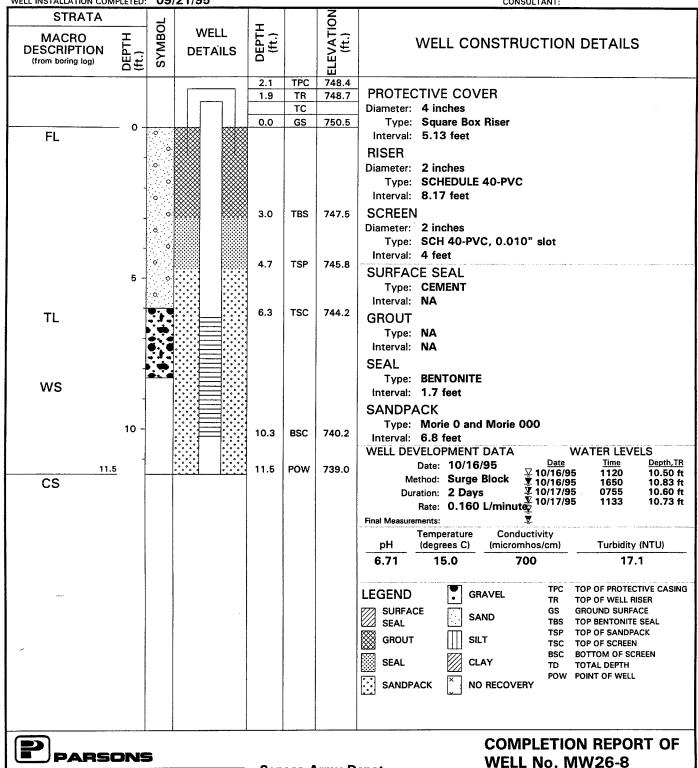
DRILLING METHOD: Hollow Stem Auger WELL INSTALLATION STARTED: 09/21/95

ENGINEERING-SCIENCE, INC.

GEOLOGIST: F. O'Loughlin
CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION COMPLETED: 09/21/95

CONSULTANT:



Seneca Army Depot

Romulus, New York

DATUM: NGVD 88

### **COMPLETION REPORT OF WELL No. MW26-9**

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 991722.5 751224.7 GROUND SURFACE ELEVATION: 750.9

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

GEOLOGIST: F. O'Loughlin DRILLING METHOD: Hollow Stem Auger CHECKED BY: P.Feschbach-Meriney WELL INSTALLATION STARTED: 09/25/95

LL INSTALLATION COM						Z	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				2.2	TPC	748.6	PROTECTIVE COVER
				2.1	TR TC	748.8	Diameter: 4 inches
				0.0	GS	750.9	Type: Square Box Riser
FL	- 0-	O					Interval: 5.25 feet
. –		0					RISER
		0					Diameter: 2 inches
	_	0					Type: SCHEDULE 40-PVC
		0					Interval: 9.14 feet
	-	0		3.0	TBS	747.9	SCREEN
		Ó					Diameter: 2 inches
	4	. 0					Type: SCH 40-PVC, 0.010" slot Interval: 4 feet
		φ .		5.0	TSP	745.9	SURFACE SEAL
	5 -	0		5.0	Tor	745.5	Type: CEMENT
		0					Interval: NA
TL	f	•					GROUT
. —		•		7.1	TSC	743.8	Type: NA
	1	ĕ, ĕ					Interval: NA
							SEAL
WS		ļ					Type: BENTONITE
	4						Interval: 2.0 feet
							SANDPACK
	10 -						Type: Morie 0 and Morie 000 Interval: 7.2 feet
				11.4	DCC.	720.0	WELL DEVELOPMENT DATA WATER LEVELS
•	-			11.1	BSC	739.8	Date: 10/16/95 <u>Date Time</u> <u>Depth,Ti</u>
				400	DC:+1	700 7	Method: Surge Block ▼ 10/16/95 1552 10.98 t
12.	<u>∠</u> 1		o``o°`o°`d	12.2	POW	738.7	Duration: 1 Day $\frac{V}{V}$ Rate: 0.280 L/minute
CS							Final Measurements:
							Temperature Conductivity
							pH (degrees C) (micromhos/cm) Turbidity (NTU)
							6.90 13.75 625 8.38
							LECEND PROTECTIVE CASIN
							LEGEND GRAVEL TR TOP OF WELL RISER  SURFACE GS GROUND SURFACE
							SEAL TBS TOP BENTONITE SEAL
							GROUT TSP TOP OF SANDPACK TSC TOP OF SCREEN
							BSC BOTTOM OF SCREEN
							SEAL CLAY TD TOTAL DEPTH POW POINT OF WELL
							SANDPACK NO RECOVERY
							COMPLETION REPORT OF



**ENGINEERING-SCIENCE, INC.** 

Seneca Army Depot Romulus, New York

WELL No. MW26-9

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 991652.5 751206.3 GROUND SURFACE ELEVATION: 751.5 DATUM: NGVD 88

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger GEOLOGIST: F. O'Loughlin WELL INSTALLATION STARTED: 09/20/95 CHECKED BY: P.Feschbach-Meriney

WELL INSTALLATION CON	MPLETED:	09	/20/95				CONSULTANT:
STRATA						NO	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				2.0	TPC	749.5	PROTECTIVE COVER
				1.8	TR	749.7	PROTECTIVE COVER
				0.0	TC GS	751.5	Diameter: 4 inches Type: Square Box Riser
FL	— o <del> </del>	. 0		0.0	us	751.5	Interval: 3.95 feet
1 L		0					RISER
	1	0	<b>****</b>				Diameter: 2 inches
		٥	<b>                                     </b>	2.0	TBS	749.5	Type: SCHEDULE 40-PVC
	1	0					Interval: 6.10 feet
		ó		3.2	TSP	748.3	SCREEN
		Ö,		3.2	13,	740.3	Diameter: 2 inches
	_	o		4.3	TSC	747.2	Type: SCH 40-PVC, 0.010" slot
		¢ .		4.3	130	747.2	Interval: 6.9 feet
	5 -	ø					SURFACE SEAL Type: CEMENT
		0					Interval: NA
	4	0					GROUT
	ľ	0					Type: NA
TL	1						Interval: NA
							SEAL
		<u>•</u> ;•					Type: BENTONITE
WS	-						Interval: 1.2 feet
							SANDPACK
	10 -						Type: Morie 0 and Morie 000 Interval: 8.3 feet
							WELL DEVELOPMENT DATA WATER LEVELS
	1			11.2	BSC	740.3	Date: 10/16/95 <u>Date Time Depth,TR</u> ✓ 10/16/95 1504 9.83 ft
12.	.0			12.0	POW	739.5	Method: Surge Block ¥ 10/23/95 0830 8.12 ft
CS							Duration: 9 Days \frac{\frac{T}{V}}{V}  Rate: 0.100 L/minutes
							Final Measurements:
							Temperature Conductivity
							pH (degrees C) (micromhos/cm) Turbidity (NTU)
							7.25 15.6 1250 3.41
							LECENID TPC TOP OF PROTECTIVE CASING
							LEGEND GRAVEL TR TOP OF WELL RISER
							SURFACE SAND GS GROUND SURFACE TBS TOP BENTONITE SEAL
							GROUT SILT TSP TOP OF SANDPACK TSC TOP OF SCREEN
							BSC BOTTOM OF SCREEN
							POW POINT OF WELL
							SANDPACK NO RECOVERY
PARS		5					COMPLETION REPORT OF



**ENGINEERING-SCIENCE, INC.** 

Seneca Army Depot Romulus, New York

**WELL No. MW26-10** 

PROJECT: SEAD-25 & SEAD-26 RI/FS

PROJECT LOCATION: Seneca Army Depot Activity, Romulus, NY 14541

WELL LOCATION (N/E): 992690.3 751235.7

DRILLING CONTRACTOR: Empire Soils Investigation, Inc.

DRILLING METHOD: Hollow Stem Auger

WELL INSTALLATION STARTED: 10/19/95 WELL INSTALLATION COMPLETED: 10/19/95

GROUND SURFACE ELEVATION: 754.9

DATUM: NGVD 88

GEOLOGIST: F. O'Loughlin

CHECKED BY: P.Feschbach-Meriney

CONSULTANT:

WELL INSTALLATION COM	PLETED:	10/	19/95				CONSULTANT:
STRATA						N	
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				1.5	TPC	753.5	DROTECTIVE COVED
				1.4	TR	753.6	PROTECTIVE COVER
					TC		Diameter: 4 inches
	- o <del> </del>	0		0.0	GS	754.9	Type: Square Box Riser
FL							Interval: 3.37 feet
	4		<b>****</b>				RISER
		0	<b>****</b>				Diameter: 2 inches
	_	0	*****	1.9	TBS	753.0	Type: SCHEDULE 40-PVC
		0					Interval: 6.08 feet
	_	o					SCREEN
}		O		3.7	TSP	751.2	Diameter: 2 inches
		0		J.,	'	701.2	Type: SCH 40-PVC, 0.010" slot
		0		4.7	TSC	750.2	Interval: 9.5 feet
	5 -			Ţ.,	.50	,00.2	SURFACE SEAL
	J						Type: CEMENT
				}			Interval: NA
	1	۰۰		}			GROUT
	-	.0		}			Type: NA
	1	0		}			Interval: NA
		· o		]			SEAL
	1	ø		}			Type: BENTONITE
		ο		}			Interval: 1.8 feet
		o		]			SANDPACK
							Type: Morie 0 and Morie 000
	10 -			}			Interval: 11.3 feet
				}			WELL DEVELOPMENT DATA WATER LEVELS
	1			}			Date: 10/22/95
				}			Method: Surge Block
TL	-	ب ب		}			Duration: 1 Day $\frac{\nabla}{\nabla}$
1 1 1				•			Rate: 0.300 L/minutes
	-	<b>:</b> ::		4			Final Measurements:
ws				1			Temperature Conductivity pH (degrees C) (micromhos/cm) Turbidity (NTU)
	4			14.2	BSC	740.7	7.20 16.1 780 8.25
				1	DOW	7000	7.20 10.1 700 0.25
CC 15.	<u>0</u> 15 -		• • • • • • • • • • • • • • • • • • •	15.0	POW	739.9	TPC TOP OF PROTECTIVE CASING
CS							LEGEND GRAVEL TR TOP OF WELL RISER
							SURFACE SAND GS GROUND SURFACE
							SEAL TOP DE CAMPBACK
						1	GROUT SILT TSC TOP OF SCREEN
							SEAL CLAY BSC BOTTOM OF SCREEN TD TOTAL DEPTH
							POW POINT OF WELL
					.		SANDPACK NO RECOVERY
							The state of the s
				<u></u>		L	
							COMPLETION REPORT OF

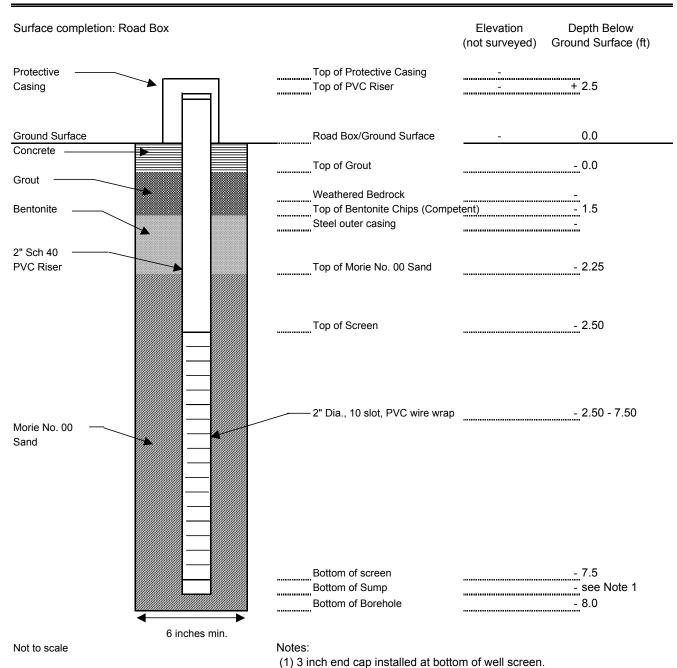


ENGINEERING-SCIENCE, INC.

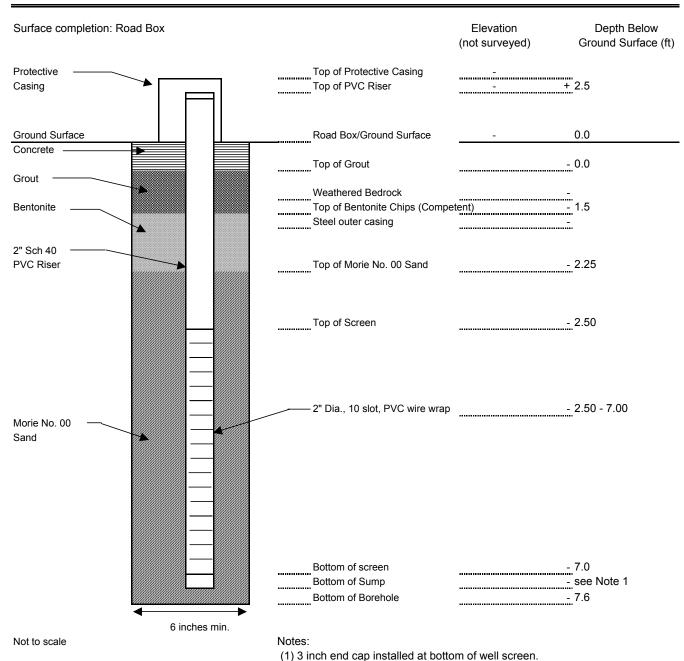
Seneca Army Depot Romulus, New York

**WELL No. MW26-11** 

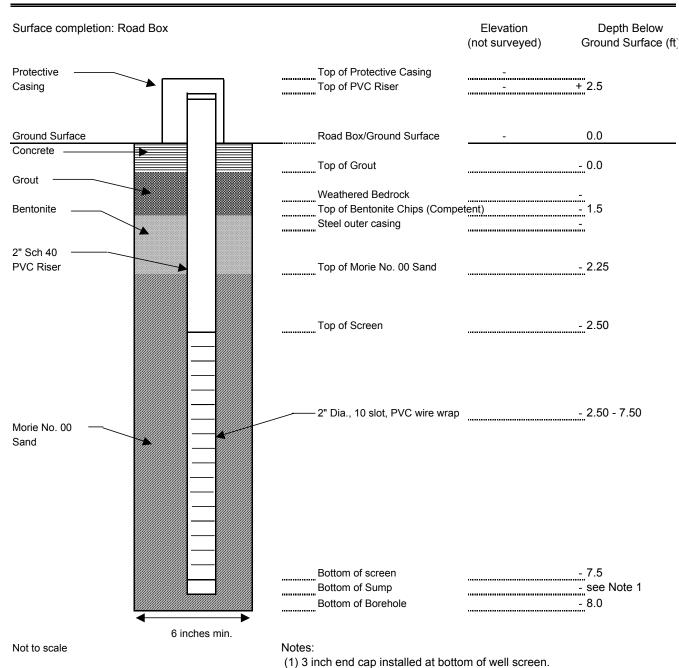
Project:SEAD-48Drilling Contractor:Lyon Drilling, Inc.Well Number:MW48-1Date Started:8/18/2003Geologist:E. AshtonDate Completed:8/18/2003



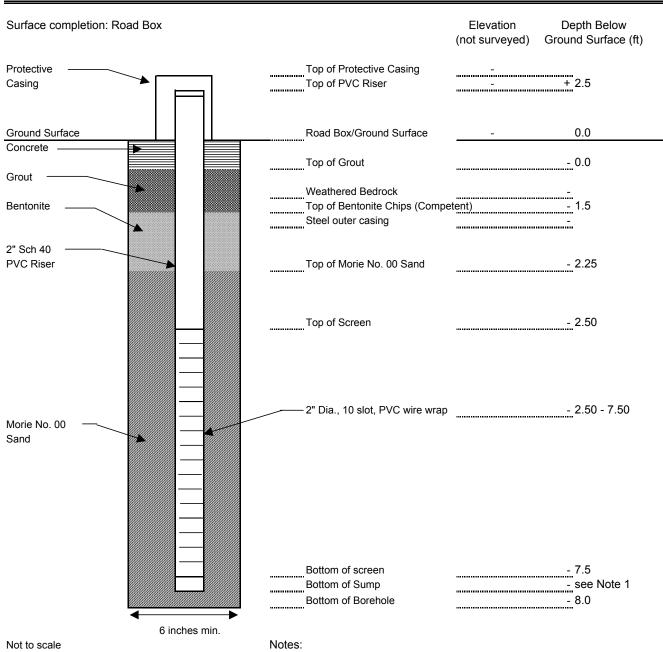
Project:SEAD-48Drilling Contractor:Lyon Drilling, Inc.Well Number:MW48-2Date Started:8/19/2003Geologist:E. AshtonDate Completed:



Project:SEAD-48Drilling Contractor:Lyon Drilling, Inc.Well Number:MW48-3Date Started:8/13/2003Geologist:E. AshtonDate Completed:8/13/2003



Project:SEAD-48Drilling Contractor:Lyon Drilling, Inc.Well Number:MW48-4Date Started:8/13/2003Geologist:E. AshtonDate Completed:8/13/2003



(1) 3 inch end cap installed at bottom of well screen.

Project: SEAD-48 **Drilling Contractor:** Lyon Drilling, Inc. **Date Started:** Well Number: MW48-5 8/18/2003 Geologist: E. Ashton **Date Completed:** 8/18/2003 Surface completion: Road Box Elevation Depth Below Ground Surface (ft) (not surveyed) Top of Protective Casing Protective Top of PVC Riser Casing **Ground Surface** Road Box/Ground Surface Concrete Top of Grout - 0.0 Grout Weathered Bedrock Top of Bentonite Chips (Competent) - 1.5 Bentonite Steel outer casing 2" Sch 40 **PVC** Riser - 2.25 Top of Morie No. 00 Sand Top of Screen Morie No. 00 Sand Bottom of screen - see Note 1 Bottom of Sump Bottom of Borehole

Not to scale

6 inches min.

Notes:

(1) 3 inch end cap installed at bottom of well screen.

Project: SEAD-48 **Drilling Contractor:** Lyon Drilling, Inc. **Date Started:** Well Number: MW48-6 8/18/2003 Geologist: E. Ashton **Date Completed:** 8/18/2003 Surface completion: Road Box Depth Below Elevation Ground Surface (ft) (not surveyed) Top of Protective Casing Protective Top of PVC Riser Casing **Ground Surface** Road Box/Ground Surface Concrete \_\_Top of Grout <u>-</u> 0.0 Grout Weathered Bedrock Top of Bentonite Chips (Competent) - 1.5 Bentonite Steel outer casing 2" Sch 40 **PVC** Riser Top of Morie No. 00 Sand - 2.25 Top of Screen Morie No. 00 Sand Bottom of screen - see Note 1 Bottom of Sump Bottom of Borehole

(1) 3 inch end cap installed at bottom of well screen.

Not to scale

6 inches min.

Project: SEAD-48 **Drilling Contractor:** Lyon Drilling, Inc. Well Number: MW48-7 **Date Started:** 8/19/2003 Geologist: E. Ashton **Date Completed:** 8/19/2003 Surface completion: Road Box Elevation Depth Below Ground Surface (ft) (not surveyed) Protective Top of Protective Casing Casing Top of PVC Riser **Ground Surface** Road Box/Ground Surface Concrete - 0.0 Top of Grout Grout Weathered Bedrock Top of Bentonite Chips (Competent) - 1.5 Bentonite Steel outer casing 2" Sch 40 **PVC** Riser - 2.25 Top of Morie No. 00 Sand Top of Screen Morie No. 00 Sand Bottom of screen Bottom of Sump Bottom of Borehole

Not to scale

6 inches min.

Notes:

(1) 3 inch end cap installed at bottom of well screen.

Project: SEAD-48 **Drilling Contractor:** Lyon Drilling, Inc. Well Number: MW48-8 **Date Started:** 8/18/2003 Geologist: E. Ashton **Date Completed:** 8/18/2003 Surface completion: Road Box Elevation Depth Below (not surveyed) Ground Surface (ft) Top of Protective Casing Protective Top of PVC Riser Casing **Ground Surface** Road Box/Ground Surface Concrete Top of Grout - 0.0 Grout Weathered Bedrock Top of Bentonite Chips (Competent) - 1.5 Bentonite Steel outer casing 2" Sch 40 **PVC** Riser - 2.25 Top of Morie No. 00 Sand Top of Screen Morie No. 00 Sand Bottom of screen - see Note 1 Bottom of Sump Bottom of Borehole

(1) 3 inch end cap installed at bottom of well screen.

Not to scale

6 inches min.

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/18/94

ENGINEERING-SCIENCE, INC.

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

REFERENCE COORDINATE SYSTEM: New York State Plane

WELL LOCATION (N/E): 998909.7 749948.8

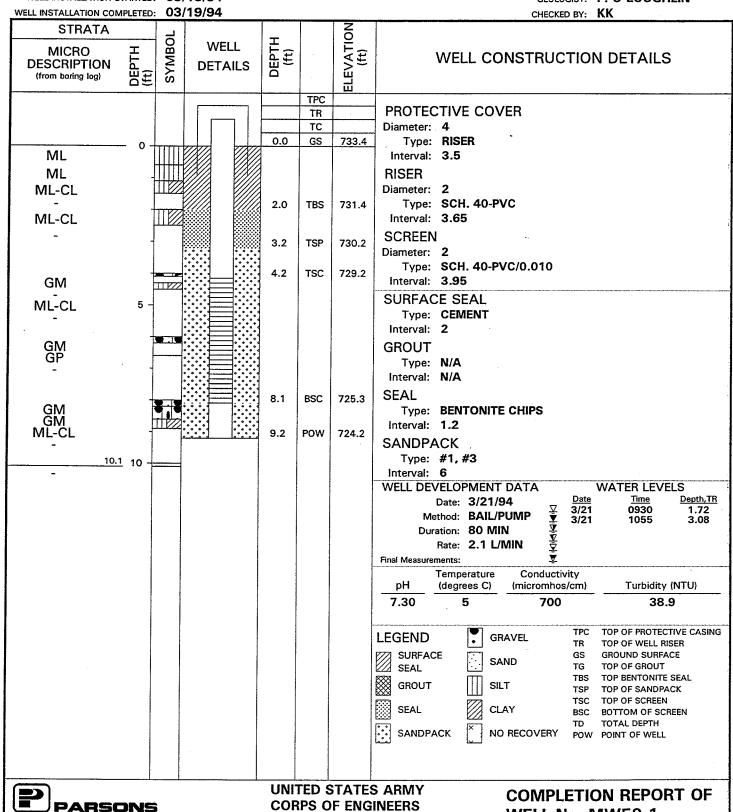
GROUND SURFACE ELEVATION (ft): 733.4

**DATUM: NAD 1983** 

GEOLOGIST: F. O'LOUGHLIN

WELL No. MW59-1

Sheet 1 of 1



Seneca Army Depot

Romulus, New York

Sheet 1 of 1

### COMPLETION REPORT OF WELL No. MW59-2

ENGINEERING-SCIENCE, INC.

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/06/94

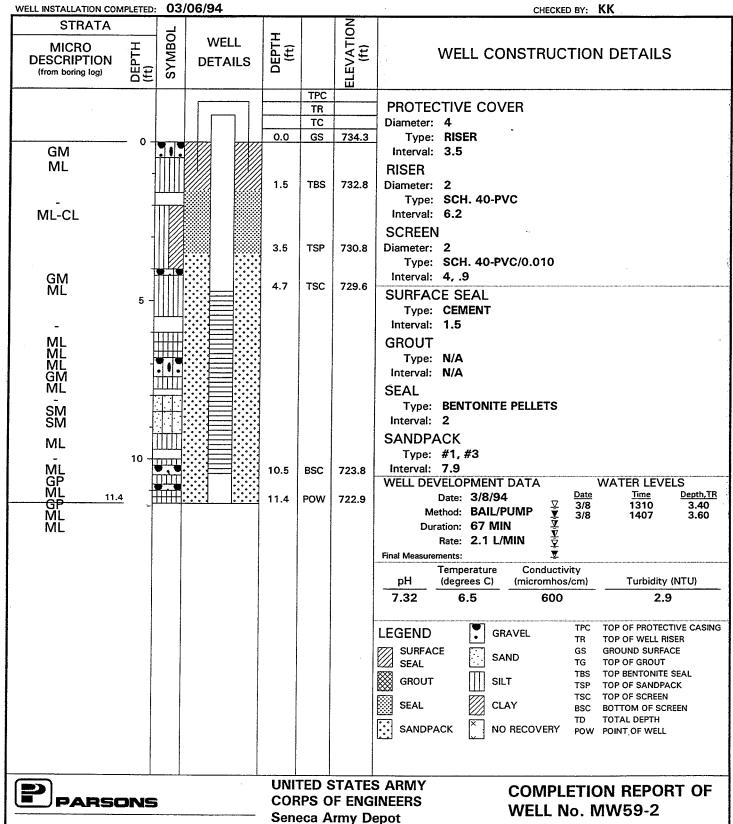
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

WELL LOCATION (N/E): 999036.1 749874.0

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 734.3

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



Romulus, New York

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/18/94 WELL INSTALLATION COMPLETED: 03/18/94

WELL LOCATION (N/E): 999030.0 750345.9

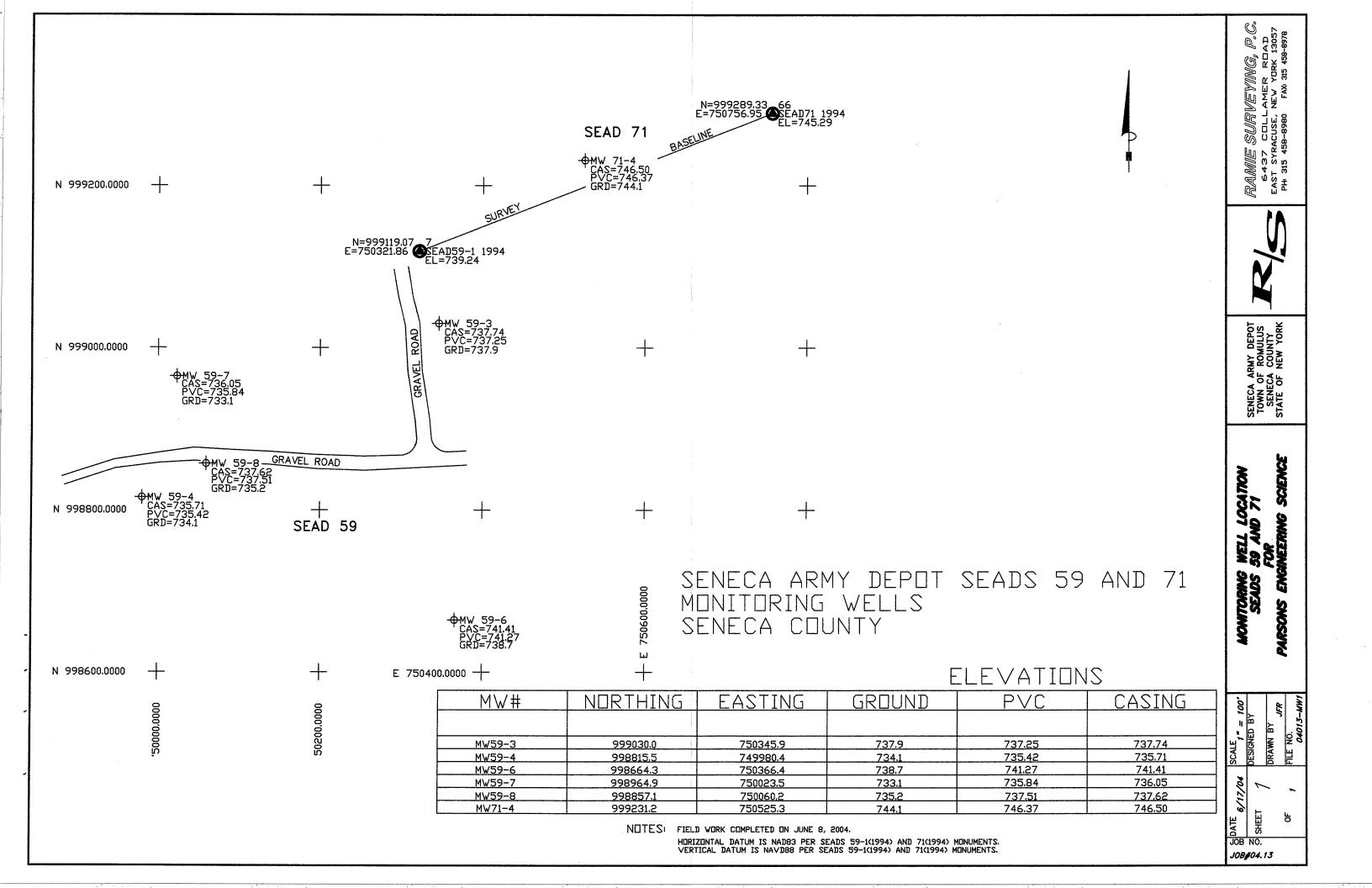
REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 737.7 **DATUM: NAD 1983** 

GEOLOGIST: F. O'LOUGHLIN

WELL INSTALLATION COMPLETED:	03/18/94	<del></del>	T	T	CHECKED BY: KK
STRATA  MICRO DESCRIPTION (from boring log)  (from boring log)	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAILS
GM ML ML PT CGPCM CC C		7.7 8.8	TPC TR TC GS TBS TSP TSC  BSC POW	737.7 736.9 735.3 734.0 730.0 728.9	PROTECTIVE COVER  Diameter: 4  Type: ROADWAY BOX Interval: 3.5  RISER  Diameter: 2  Type: SCH. 40-PVC Interval: 2.85  SCREEN  Diameter: 2  Type: SCH. 40-PVC/0.010 Interval: 3.95  SURFACE SEAL  Type: CEMENT Interval: .8  GROUT  Type: N/A Interval: N/A  SEAL  Type: BENTONITE Interval: 1.6  SANDPACK  Type: #1, #3 Interval:  WELL DEVELOPMENT DATA  Date: 3/20/94  Method: BAIL/PUMP  Additional BAIL/PUMP  Duration: 55 MIN Rate: 2 L/MIN  Final Measurements:  Temperature  Conductivity (micromhos/cm)  Turbidity (NTU)  7.23  TOP OF PROTECTIVE CASING TOP OF GROUT TOP OF SANDPACK  TOP OF SANDPACK  SEAL  GROUT  SILT  TSP TOP OF SCREEN TOP
PARSONS ENGINEERING-SCI	ENCE, INC.	COR Sene	PS O		

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs WELL LOCATION (N/E): 999026.3 750264.3 PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUSANY ERENCE COORDINATE SYSTEM: DRILLING CONTRACTOR: GROUND SURFACE ELEVATION (f+): NA DRILLING METHOD: DATUM: NAD 1983 \_L INSTALLATION STARTED: №03/17/94 **GEOLOGIST:** INSTALLATION COMPLETED: F.03/17/94 CHECKED BY: ELEVATION (ft) **STRATA** SYMBO **WELL MICRO** WELL CONSTRUCTION DETAILS DEPTI (ft) DESCRIPTION **DETAILS** (from boring log) TPC TR PROTECTIVE COVER TC D ameter: 0.0 GS NA Type: 0 Interval: RISER Diameter: Type: Interval: SCREEN Diameter: Type: Interval: SURFACE SEAL 5 Tupe: Interval: GROUT Type: Interval: 8.0 SFAL Type: Interval: SANDPACK Type: Interval: WATER LEVELS WELL DEVELOPMENT DATA <u>Date</u> Time Depth.TR Date: ZZZZ Method: Duration: Rate: Final Measurements: TemperatureConductivity pH (degrees COmicromhos/cm)Turbidity (NTU) TOP OF PROTECTIVE CASING **LEGEND GRAVEL** TOP OF WELL RISER TR **SURFACE** GS GROUND SURFACE SAND TG TOP OF GROUT SEAL TOP BENTONITE SEAL TBS **GROUT** SILT TOP OF SANDPACK TSP TSC TOP OF SCREEN SEAL CLAY BOTTOM OF SCREEN BSC TD TOTAL DEPTH SANDPACK NO RECOVERY POW POINT OF WELL **UNITED STATES ARMY COMPLETION REPORT OF PARSONS CORPS OF ENGINEERS** WELL No. MW59-3A Seneca Army Depot Sheet 1 of 1 ENGINEERING-SCIENCE, INC. Romulus, New York



PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 06/13/94

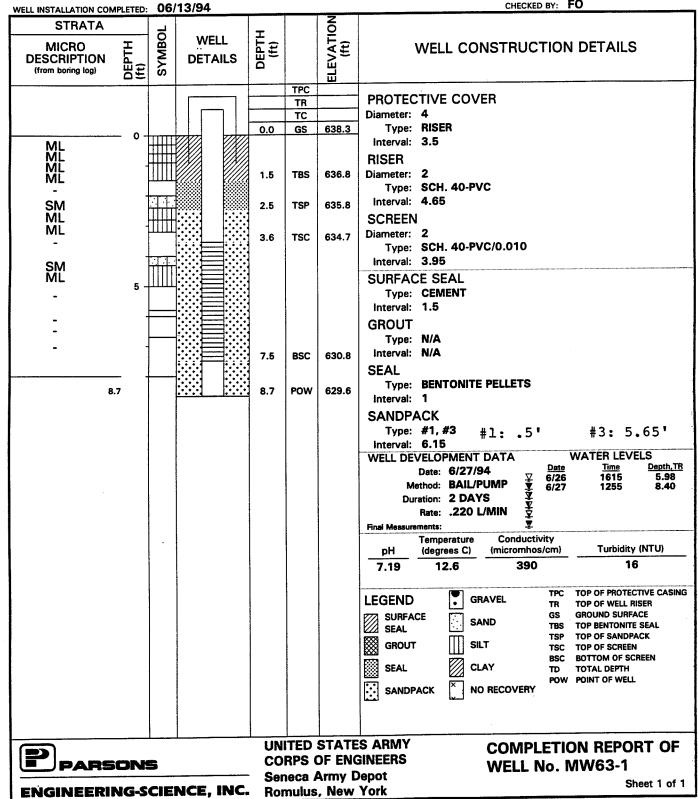
WELL LOCATION (N/E): 1013124.1 741608.4

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 638.3

**DATUM: NAD 1983** GEOLOGIST: K. KELLY

CHECKED BY: FO



WELL LOCATION (N/E): 1012979.9 741136.2 PROJECT: SEVEN LOW PRIORITY AOCS REFERENCE COORDINATE SYSTEM: New York State Plane PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY GROUND SURFACE ELEVATION (ft): 630.9 DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS **DATUM: NAD 1983** DRILLING METHOD: HOLLOW STEM AUGER GEOLOGIST: K. KELLY WELL INSTALLATION STARTED: 06/14/94 CHECKED BY: FO WELL INSTALLATION COMPLETED: 06/14/94 LEVATION (ft) **STRATA** SYMBOL DEPTH (ft) WELL DEPTH (ft) **MICRO** WELL CONSTRUCTION DETAILS DESCRIPTION **DETAILS** (from boring log) 딦 TPC PROTECTIVE COVER TR TC Diameter: 4 Type: RISER 0.0 GS 630.9 Interval: 3.5 ML **RISER** 1.5 **TBS** 629.4 Diameter: 2 ML Type: SCH. 40-PVC Interval: 4.05 ML 628.4 2.5 **TSP** TSC 627.9 **SCREEN** 3.0 Diameter: 2 ΜĽ Type: SCH. 40-PVC/0.010 Interval: 3.95 SP SURFACE SEAL  $\mathsf{ML}$ Type: CEMENT Interval: 1.5 SP **GROUT** Type: N/A 623.9 7.0 BSC Interval: N/A POW 622.8 8.1 8.2 Type: BENTONITE PELLETS Interval: 1 **SANDPACK** Type: #1, #3 #1: .3" #3: 5.4' Interval: 5.7 WATER LEVELS WELL DEVELOPMENT DATA Date <u>Time</u> Depth,TR Date: 6/26/94 6/25 6/26 1450 Method: BAIL/PUMP 8.20 1410 **Duration: 2 DAYS** Rate: .893 L/MIN Final Measurements: Temperature Conductivity Turbidity (NTU) pН (degrees C) (micromhos/cm) 7.02 15.4 600 10 TOP OF PROTECTIVE CASING **GRAVEL LEGEND** TOP OF WELL RISER SURFACE **GROUND SURFACE** SAND TOP BENTONITE SEAL TBS SEAL TOP OF SANDPACK TSP **GROUT** SILT TOP OF SCREEN TSC **BOTTOM OF SCREEN** BSC SEAL CLAY TOTAL DEPTH TD POW POINT OF WELL NO RECOVERY **SANDPACK UNITED STATES ARMY COMPLETION REPORT OF** 

**CORPS OF ENGINEERS** 

Seneca Army Depot

Romulus, New York

WELL No. MW63-2

Sheet 1 of 1

PARSONS

ENGINEERING-SCIENCE, INC.

WELL LOCATION (N/E): 1013181.9 741130.1

REFERENCE COORDINATE SYSTEM: New York State Plane

# **COMPLETION REPORT OF WELL No. MW63-3**

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

GROUND SURFACE ELEVATION (ft): 631.8 DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS **DATUM: NAD 1983** DRILLING METHOD: HOLLOW STEM AUGER GEOLOGIST: K. KELLY WELL INSTALLATION STARTED: 06/14/94 CHECKED BY: FO WELL INSTALLATION COMPLETED: 06/14/94 ELEVATION (ft) **STRATA** SYMBOL DEPTH (ft) WELL DEPTH (ft) **MICRO** WELL CONSTRUCTION DETAILS **DESCRIPTION DETAILS** (from boring log) TPC PROTECTIVE COVER TR Diameter: 4 TC Type: RISER 631.8 0.0 GS Interval: 3.5 ML GM RISER ML Diameter: 2 TBS 630.3 1.5 ML Type: SCH. 40-PVC Interval: 4.05 CL TSP 629.3 2.5 **SCREEN** 3.0 TSC 628.8 Diameter: 2 ŠΜ Type: SCH. 40-PVC/0.010 Interval: 3.95 SURFACE SEAL 5 Type: CEMENT Interval: 1.5 **GROUT** SM BSC 624.8 Type: N/A 7.0 Interval: N/A POW 623.7 8.1 8.3 Type: BENTONITE PELLETS Interval: 1 **SANDPACK** Type: #1, #3 #3: 5.4' #1: .4' Interval: 5.8 WATER LEVELS WELL DEVELOPMENT DATA Depth,TR <u>Date</u> Time 1330 Date: 6/27/94 6/26 4.15 Method: BAIL/PUMP 6/26 Duration: 2 DAYS 0945 3.42 Rate: .526 L/MIN Final Measurements: Conductivity Temperature Turbidity (NTU) (degrees C) (micromhos/cm) нα 20 6.89 16.1 2000 TOP OF PROTECTIVE CASING TPC **GRAVEL** LEGEND TOP OF WELL RISER TR GROUND SURFACE SURFACE GS SAND TOP BENTONITE SEAL TBS SEAL TSP TOP OF SANDPACK **GROUT** TSC TOP OF SCREEN **BOTTOM OF SCREEN** CLAY SEAL TOTAL DEPTH TD POW POINT OF WELL NO RECOVERY SANDPACK UNITED STATES ARMY **COMPLETION REPORT OF CORPS OF ENGINEERS** PARSONS WELL No. MW63-3 Seneca Army Depot Sheet 1 of 1 ENGINEERING-SCIENCE, INC. Romuius, New York

#### **COMPLETION REPORT OF WELL No. MW67-1**

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

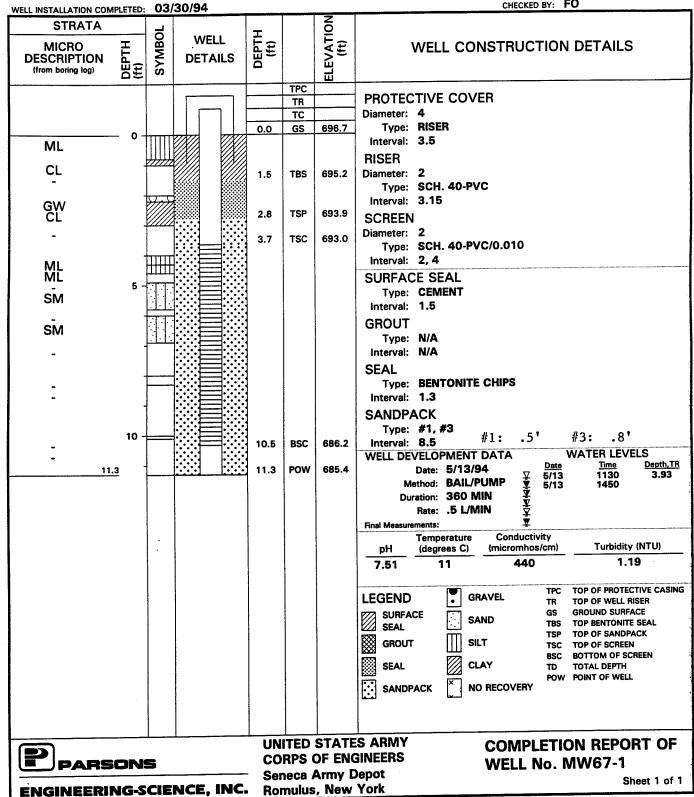
DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/30/94

WELL LOCATION (N/E): 1002498.4 748911.7

REFERENCE COORDINATE SYSTEM: New York State Plane GROUND SURFACE ELEVATION (ft): 696.7

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW67-2

PROJECT: SEVEN LOW PRIORITY AOCS

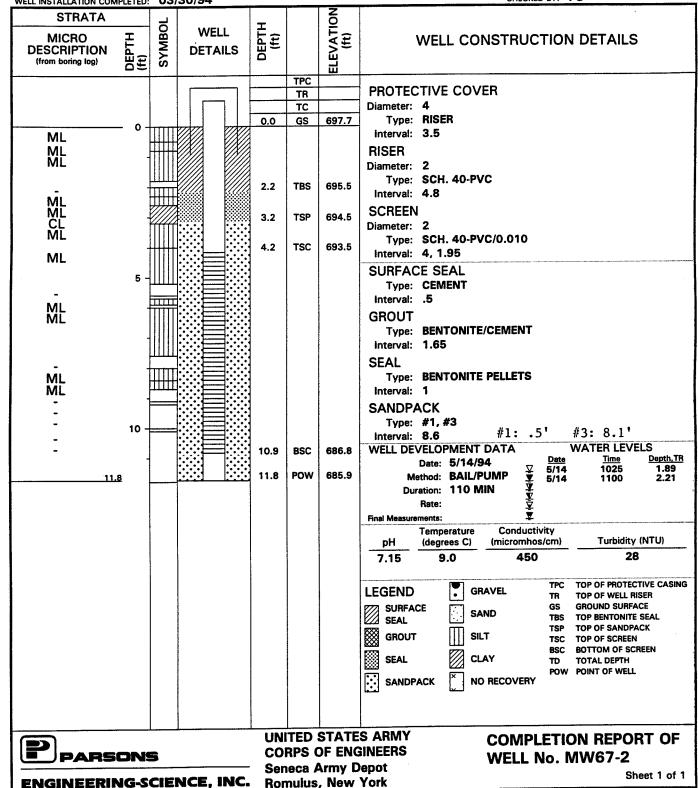
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

REFERENCE COORDINATE SYSTEM: New York State Plane GROUND SURFACE ELEVATION (ft): 697.7

WELL LOCATION (N/E): 1002256.6 748953.1

**DATUM: NAD 1983** DRILLING METHOD: HOLLOW STEM AUGER GEOLOGIST: K.KELLY WELL INSTALLATION STARTED: 03/30/94 CHECKED BY: FO WELL INSTALLATION COMPLETED: 03/30/94



#### **COMPLETION REPORT OF WELL No. MW67-3**

PROJECT: SEVEN LOW PRIORITY AOCS PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

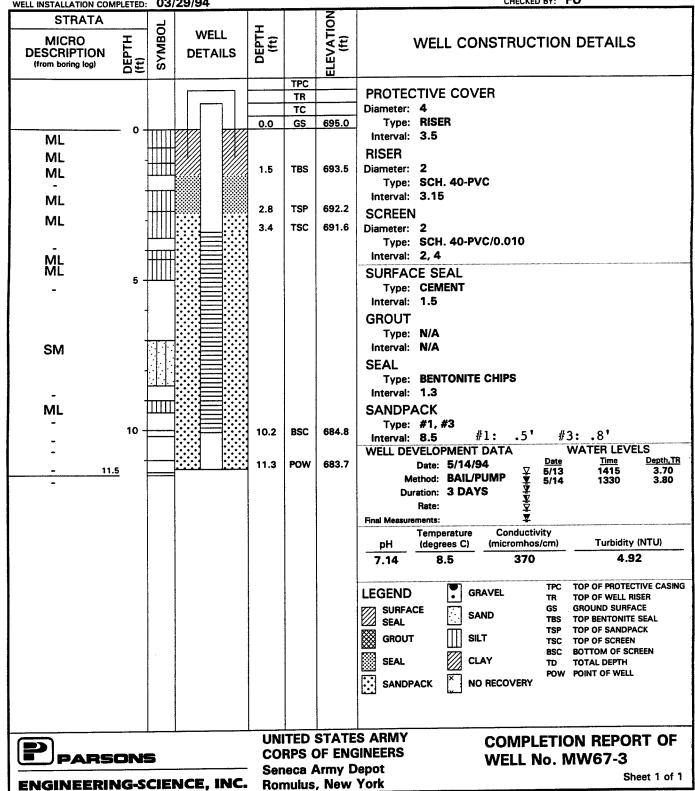
DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 03/29/94 WELL INSTALLATION COMPLETED: 03/29/94 WELL LOCATION (N/E): 1002492.2 748794.6

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 695.0

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW70-1

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

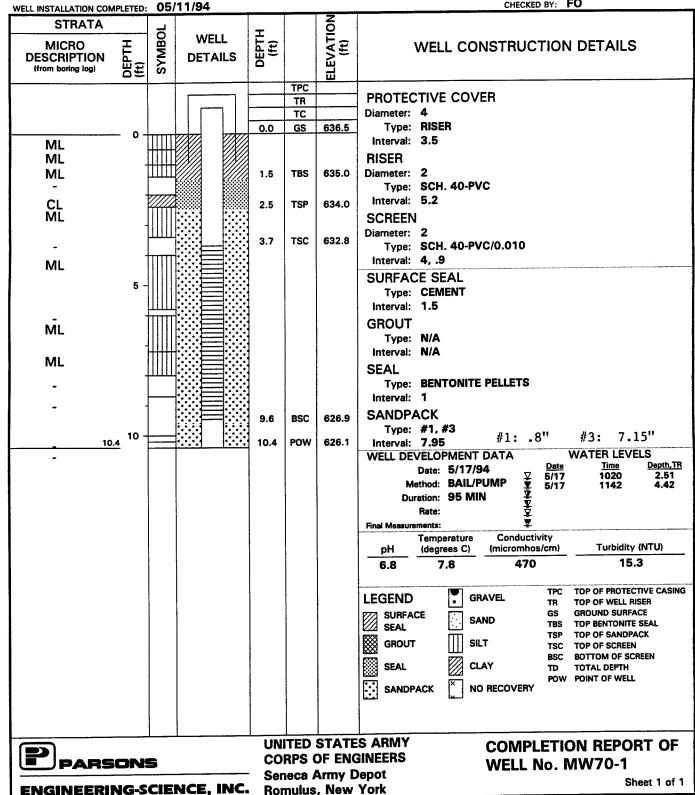
WELL INSTALLATION STARTED: 05/11/94

WELL LOCATION (N/E): 1007329.9 740889.1

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 636.5

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUGHLIN



#### COMPLETION REPORT OF WELL No. MW70-2

PROJECT: SEVEN LOW PRIORITY AOCs

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

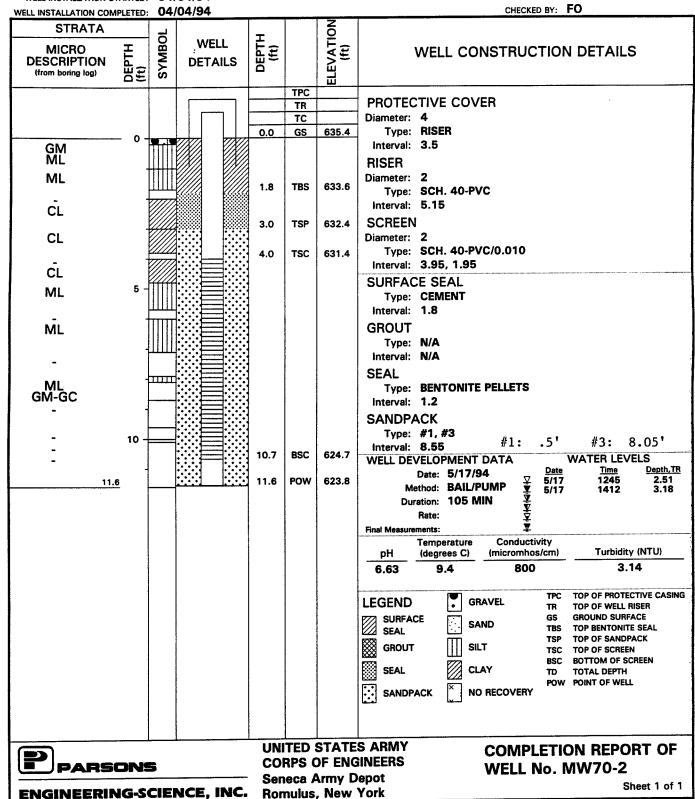
DRILLING METHOD: HOLLOW STEM AUGER

WELL INSTALLATION STARTED: 04/04/94

WELL LOCATION (N/E): 1007329.8 740555.6

REFERENCE COORDINATE SYSTEM: New York State Plane GROUND SURFACE ELEVATION (ft): 635.4

**DATUM: NAD 1983** GEOLOGIST: K. KELLY



#### COMPLETION REPORT OF WELL No. MW70-3

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

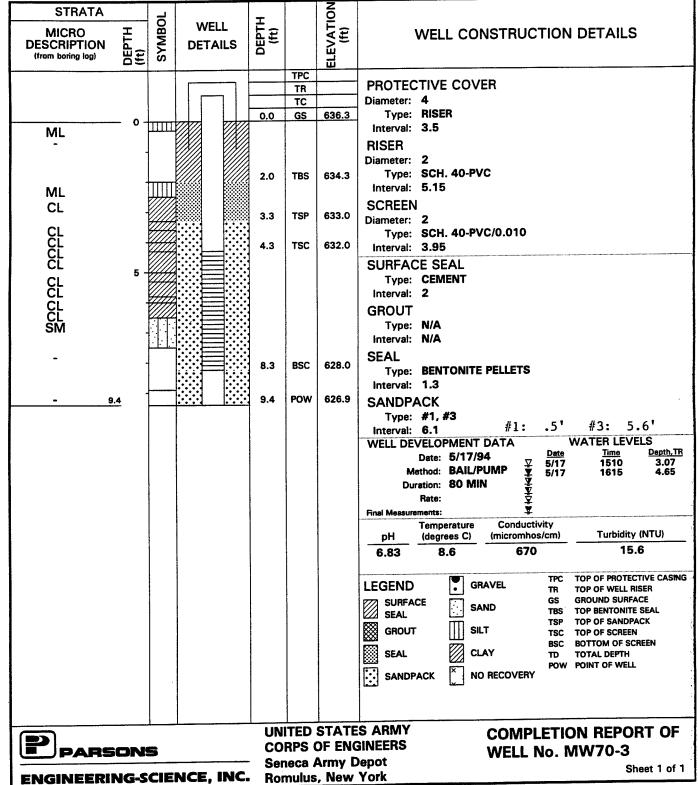
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

WELL LOCATION (N/E): 1007173.3 740552.3

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 636.3

**DATUM: NAD 1983** DRILLING METHOD: HOLLOW STEM AUGER GEOLOGIST: K. KELLY WELL INSTALLATION STARTED: 04/05/94 CHECKED BY: FO WELL INSTALLATION COMPLETED: 04/05/94 **STRATA** 



WELL LOCATION (N/E): 1007055.2 740563.3

#### COMPLETION REPORT OF WELL No. MW70-4

PROJECT: SEVEN LOW PRIORITY AOCS

ENGINEERING-SCIENCE, INC.

REFERENCE COORDINATE SYSTEM: New York State Plane PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY GROUND SURFACE ELEVATION (ft): 636.3 DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS **DATUM: NAD 1983** DRILLING METHOD: HOLLOW STEM AUGER GEOLOGIST: F. O'LOUHGLIN WELL INSTALLATION STARTED: 05/11/94 CHECKED BY: FO WELL INSTALLATION COMPLETED: 05/11/94 LEVATION (ft) **STRATA** DEPTH (ft) SYMBOL WELL **MICRO** WELL CONSTRUCTION DETAILS DEPT! DESCRIPTION **DETAILS** (from boring log) 핍 TPC PROTECTIVE COVER TR TC Diameter: 4 Type: RISER 0.0 GS 636.3 Interval: 3.5 ML **RISER** CL 1.5 TBS 634.8 Diameter: 2 Type: SCH. 40-PVC Interval: 4.25 **TSP** 633.8 ML 2.5 **SCREEN** Diameter: 2 3.6 TSC 632.7 Type: SCH. 40-PVC/0.010 Interval: 4.9 SC SURFACE SEAL Type: CEMENT Interval: 1.5 ML SM **GROUT** Type: N/A Interval: N/A SM SM SEAL Type: BENTONITE PELLETS SM Interval: 1 BSC 627.0 9.3 SANDPACK Type: #1, #3 10.1 POW 626.2 **#1: .55**' #3: 7.05' 10.1 10 Interval: 7.6 WATER LEVELS WELL DEVELOPMENT DATA Depth,TR Date Time Date: 5/23/94 2.22 2.42 0825 Method: BAIL/PUMP 5/23 2.42 **Duration: 6 DAYS** Rate: .230 L/MIN Final Measurements: Temperature Conductivity Turbidity (NTU) pН (degrees C) (micromhos/cm) 3.59 690 6.93 10.1 TOP OF PROTECTIVE CASING **GRAVEL LEGEND** TOP OF WELL RISER SURFACE GROUND SURFACE SAND TOP BENTONITE SEAL TBS SEAL TOP OF SANDPACK TSP SILT **GROUT** TOP OF SCREEN TSC **BOTTOM OF SCREEN** BSC SEAL CLAY TOTAL DEPTH TD POW POINT OF WELL NO RECOVERY SANDPACK UNITED STATES ARMY **COMPLETION REPORT OF CORPS OF ENGINEERS PARSONS** WELL No. MW70-4 Seneca Army Depot Sheet 1 of 1

Romulus, New York

#### COMPLETION REPORT OF WELL No. MW71-1

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

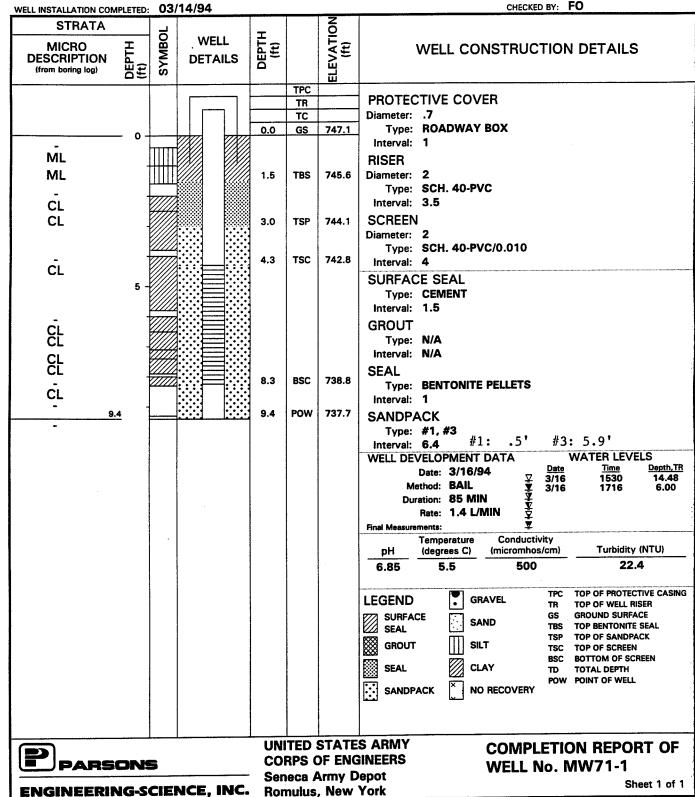
WELL INSTALLATION STARTED: 03/14/94

WELL LOCATION (N/E): 999297.5 750894.8

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 747.1

**DATUM: NAD 1983** GEOLOGIST: F. O'LOUHGLIN



#### COMPLETION REPORT OF WELL No. MW71-2

PROJECT: SEVEN LOW PRIORITY AOCs

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

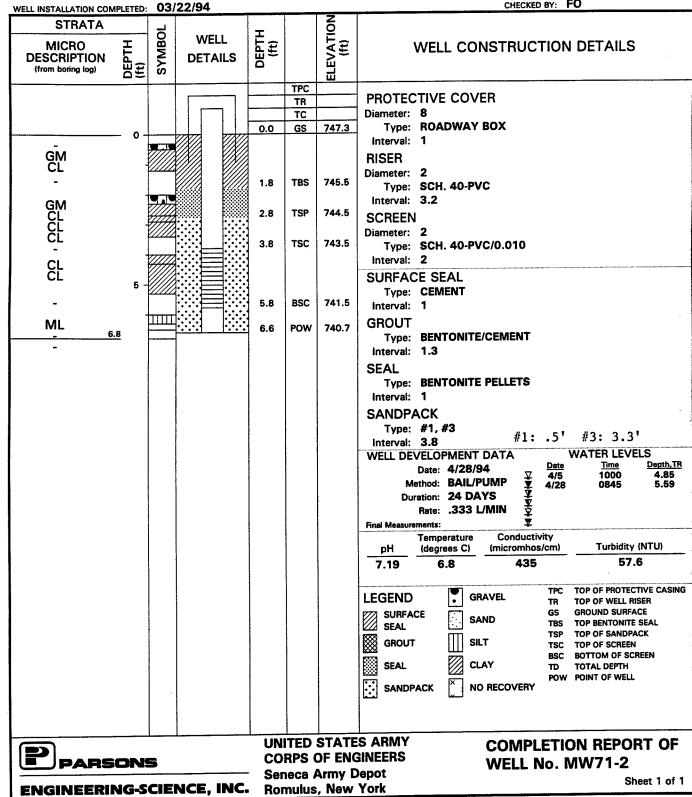
WELL INSTALLATION STARTED: 03/22/94

WELL LOCATION (N/E): 999309.2 750986.4

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 747.3

**DATUM: NAD 1983** GEOLOGIST: K. KELLY



#### COMPLETION REPORT OF WELL No. MW71-3

PROJECT: SEVEN LOW PRIORITY AOCS

PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS

DRILLING METHOD: HOLLOW STEM AUGER

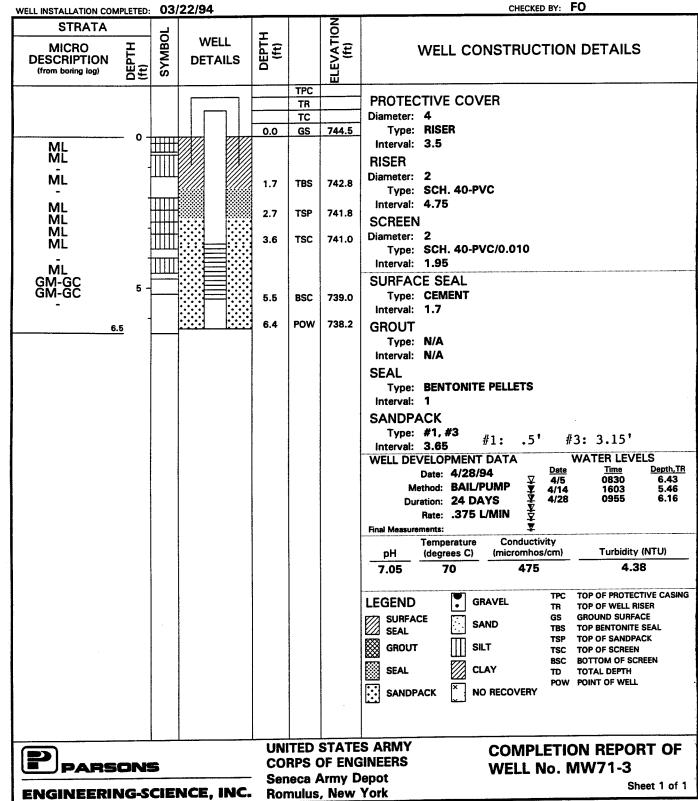
WELL INSTALLATION STARTED: 03/22/94

WELL LOCATION (N/E): 999229.9 750868.8

REFERENCE COORDINATE SYSTEM: New York State Plane

GROUND SURFACE ELEVATION (ft): 744.5

**DATUM: NAD 1983** GEOLOGIST: K. KELLY



Contracto	or:	SJB			PARSONS DRILLING RECORD	BORING/ WELL NO. M	Sheet 1 of 2 W-119-1
Driller:	_	Walt Ket	ter			Location Descript	ion:
Inspector	:	Ed Ashto	n		PROJECT NAME: Seneca Army Depot-SEAD 119	Former Small	Arms Range
Rig Type:	: _	ATV-CN	1E-850		PROJECT NUMBER 739855.01002	Near Lake Sho	ore Housing
G	ROUNDW	ATER OB	SERVATIO	NS		Location Plan	
Water	ROCILDW	TILK OD	LICENTIA	110	Weather: Sunny - 70'F	<u>Location Fia</u>	Ņ
Level (bgs							I
Date	8/8/02				Date/Time Start: August 6, 2002 -1510	See Site Pla	ın
Time Meas.	0953	+ +			Date/Time Finish: August 6, 2002 -1755		
From	TOC				Date/Time Finish. August 0, 2002 -1/33	1	
Sample	Sample	SPT	% Rec.		FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
Depth +3	I.D.	52.2	70 1100	PID (ppm			
3							
+2							
							Steel Protective Casing
+1							
0							2-inch ID PVC Riser Sch 40
		4	50	NA	(0'-2):Brown, silt with fine sand, trace fine sand, roots, dry. (SM)		
1		6				30000	Grout (0'-1.5')
		7					
2		9 23	100	NA	(2'-4'):Brown, silt with fine sand, fine-medium gravel, dry. (SM)		Bentonite Chips
3		15	100	INA	(2-4). Brown, sht with thie sand, fine-medium graver, dry. (SW)		(1.5'-2.5') Morie # 000 Sand
		19					(2.5'-2.75')
4		23	50	37.			
5		19 28	50	NA	(4'-6'):Brown, silt with fine sand, trace fine gravel, black shale fragments, di (ML/SM)-Till	<b>│</b>	Morie # 00 Sand
		34			(ML/SM)-Till		(2.75'-20')
6		36					2-inch ID, SCH 40, PVC
		31	10	NA	(6'-8'):Same As Above. (ML/SM)- Til		0.010-in Slot Well
7		35 41					Screen (3' - 18')
8		47					
		21	10	NA	(8'-8.9'): Same As Above. (ML/SM)- Til		
9		50/.4			Refusal at 8.9 feet. Drilled to 10 feet with HSAs		
10							
10		50/.4	10	NA	(10'-10.4'): Same As Above. (ML/SM)- Til	<del>     </del>	
11					Refusal at 10.4 feet. Drilled to 12 feet with HSAs		
10							
12		50/.1	0	NA	(12'-12.1'): No recover		
13		30/.1	0	11/1	Refusal at 12.1 feet. Drilled to 14 feet with HSA:		
14		5011		37.	(1411470.)		
15		50/.1	0	NA	(14'-14.1'): No recover:  Refusal at 14.1 feet. Drilled to 16 feet with HSA:	<del>    </del>	
13				+	Retusal at 14.1 feet. Diffied to 10 feet with fish:		
16							
1.7		50/.0	0	NA	No recovery		
17		1	1	1	Refusal at 16 feet. Drilled to 20 feet with HSAs	<del>     -    -    -    -    -    -    </del>	Water table (17')
18				+		H	
		•	•	•	COMMENTS:	:-	•
		METHOD			No environmental samples collected.		
	SS = SPLIT				Drilled to 20 feet bgs from 16 feet bgs due to last three split spoons had no recovery.		
	A = AUGER C = CORED	CUTTINGS					
<b></b>	, JOHED						

Contract		CID				PARSONS DRILLING DECORD	BORING/ WELL NO. M	BORING/ Sheet 2 of 2 WELL NO. MW-119-1				
Contracto	or:	SJB Walt Katt	100			DRILLING RECORD	Location Descripti	L NO. MW-119-1				
Driller:		Walt Kett	er			PROJECTENAME C A D (CEAD 110						
Inspector:		Ed Ashto	II 050			PROJECT NAME: Seneca Army Depot-SEAD 119	Former Small					
Rig Type:		ATV-CM	IE-850			PROJECT NUMBER 739855.01002	Near Lake Sho	re Housing				
	OUNDW	ATER OB	SERVATIO	ONS	1		Location Plan	<b>†</b>				
Water	[					Weather: Sunny - 70'F		N				
Level (bgs Date	1		<del>                                     </del>			Date/Time Start: August 6, 2002 -1510	See Site Pla					
Time			+ + -			Date/Time Start: August 0, 2002 -1510	See Site Fia	111				
Meas.						Date/Time Finish: August 6, 2002 -1755						
From												
Sample	Sample	SPT	% Rec.			FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS				
Depth	I.D.			PID	(ppm			PVC sump (18'-19')				
19								PVC end cap				
20								20'				
						Boring terminated at 20 feet bgs.						
<u> </u>			-	1								
		<del>                                     </del>	1	1								
		<del>                                     </del>	1	1								
		<u> </u>	<u> </u>	1								
			1	-								
				1								
		-	1	<b> </b>								
-		-	+	1								
		<del>                                     </del>	+	$\vdash$								
		t	1									
			†									
			1	1								
				1								
		-	1	<b> </b>								
-		-	+	1								
		<del>                                     </del>	+	$\vdash$								
						COMMENTS.						
	SAMPLING METHOD					COMMENTS:						
	SAMPLING SS = SPLIT					See page 1 comments.						
		SPOON CUTTINGS										
	C = CORED											

Contracto	r:		SJB				PARSONS DRILLING RECORD		RING/ LL NO. M	Sheet 1 of 2 W-119-2				
Driller:			Walt Kett	er					tion Descript					
Inspector:			Ed Ashto	n			PROJECT NAME: Seneca Army Depot-SEAD 119		Former Small	Arms Range				
Rig Type:			ATV-CM	E-850			PROJECT NUMBER 739855.01002		Near Lake Sho	ore Housing				
	ROUN	DWA	TER OBS	ERVA	TIO	NS		Loca	<u>tion Pla</u> n	<b>+</b>				
Water							Weather: Sunny - 70'F	1		N				
Level (bgs										ļ				
Date	8/8/02						Date/Time Start: August 6, 2002 - 0940	4	See Site Plan					
Time	0830													
Meas.	TOC						Date/Time Finish: August 6, 2002 - 1417	4						
From	TOC	_		ļ I			EIELD IDENTIFICATION OF MATERIAL	0.0	TIES A A TIES	COMMENTE				
Sample	Sam		SPT	% R	Rec.	DID (	FIELD IDENTIFICATION OF MATERIAL	SC	CHEMATIC	COMMENTS				
Depth +3	I.I	<i>)</i> .				PID (ppm)								
13														
+2								Г	Ī					
. 2				1						Steel Protective Casing				
+1				<b>†</b>						Sicci i recouve Gasily				
<u> </u>				<del>                                     </del>						2-inch ID PVC Riser				
0				<del>                                     </del>						Sch 40				
			5	50	)	NA	(0'-2'):Brown, silt with fine sand, roots, trace fine gravel, dry. (SM)		###	1				
1			7				, , , , , , , , , , , , , , , , , , , ,		用用	Grout (0'-1.5')				
			11						00000000000000000000000000000000000000					
2			11							Bentonite Chips				
			15	10	0	NA	(2'-4'):Brown, silt with trace-fine sand, fragments of black shale, dry. (ML/SN	f)-Till		(1.5'-2.5')				
3			17						A A	Morie #000 Sand				
			19							(2.5'-2.75')				
4			25											
			18	10	0	NA	(4'-6'):Brown, silt with trace fine sand, fine-medium gravel, fragments of blac	k sha						
5			21				dry. (ML/SM)-Till			Morie #00 Sand				
			18							(2.75'-20')				
6			22	<u> </u>						2-inch ID, SCH 40, PVC				
			50/.4	5		NA	(6'-6.4'):Brown, silt with trace clay, black shale, dry. (ML/SM)- T			0.010-in Slot Well				
7							Refusal at 6.4 feet. Drilled to 8 feet with HSA:			Screen (3' - 18')				
0														
8			10	80		NA	(01.101) Decrees with social trace about his death decree with (MI (CM) T							
9			27	00	,	NA	(8'-10'):Brown, silt with trace clay, black shale, dry to moist. (ML/SM)-T							
,			34											
10			47											
10			13	10	0	NA	(10'-12'): Same As Above. (ML/SM)-Til							
11			24	10	9	14/1	(10 12). Suite 110 110010. (HE/OH)-111							
			44	<b>†</b>										
12			45	<del>                                     </del>										
			50/.3	5		NA	(12'-12.3'): Same As Above. (ML/SM)-Til							
13							Refusal at 12.3 feet. Drilled to 14 feet with HSAs							
14														
			38	50	)	NA	(14'-15.7'):Brown to grey, silt with trace clay, black shale, dry to moist. (ML/S	SM)-1		Water table (14.50')				
15			35				Refusal at 15.7 feet. Drilled to 20 feet with HSA:							
			27											
16			50/.2											
17														
16									Ш					
18									_	<u> </u>				
							COMMENTS:							
			METHOD				No environmental samples collected.							
	SS = SP													
			UTTINGS											
	C = COI	KED												

Contracto	.p	SJB				PARSONS DRILLING RECORD	BORING/ WELL NO. M	BORING/ Sheet 2 of 2 WELL NO. MW-119-2				
Contracto Driller:	· ·	Walt Kett	or			DRILLING KECUKD	Location Descripti	11-117-4				
		wait Kett	er			DDOIECT NAME: Company Armer Device CE AD 110	Former Small A					
Inspector:		Ed Ashto	II 050			PROJECT NAME: Seneca Army Depot-SEAD 119						
Rig Type:		ATV-CM	IE-85U			PROJECT NUMBER 739855.01002	Near Lake Sho	re Housing				
	OUNDW	ATER OB	SERVATIO	ONS	ı	W41 7015	Location Plan	<b>♦</b>				
Water Level (bgs				1		Weather: Sunny - 70'F		Ņ				
Date			+ + -	1	<del>                                     </del>	<b>Date/Time Start:</b> August 6, 2002 - 0940	See Site Pla	n .				
Time				1	1	Anne Cont of 1 Cont of 2002 07 10	See Site I id					
Meas.						Date/Time Finish: August 6, 2002 - 1417						
From	6 1					FIELD IDENTIFICATION OF MATERIAL	COMENANTIC	COMMENTE				
Sample Depth	Sample I.D.	SPT	% Rec.	PID	(ppm)		SCHEMATIC	COMMENTS				
								PVC sump (18'-19')				
19								PVC end cap				
20		<del>                                     </del>	<u> </u>	+		}		20'				
		1		1		Boring terminated at 20 feet bgs.	199999	<del></del>				
				1								
		<u> </u>		1								
		<del>                                     </del>	1	1								
		-		1								
		<del>                                     </del>	1	1								
		1		1								
			-	<del>                                     </del>								
		<del>                                     </del>		+								
		<del>                                     </del>	1	1								
				1								
						COMMENTS:						
SAMPLING METHOD						See page 1 comments.						
	SS = SPLIT SPOON											
	A = AUGER C = CORED	CUTTINGS										
	C - COKED											

Contracto	r:		SJB				PARSONS DRILLING RECORD	BORING/ WELL NO. M	Sheet 1 of 1 W-119-3
Driller:	•		Walt Kett	er				Location Descripti	
Inspector:			Ed Ashtor				PROJECT NAME: Seneca Army Depot-SEAD 119	Former Small	
Rig Type:	-		ATV-CM	E-850			PROJECT NUMBER 739855.01002	Near Lake Sho	
GF Water	ROUNI	)WA	TER OBS	ERVA	TIO	NS	Wasakan Clauka 2000	Location Plan	<b>.</b>
Water Level (bgs)	8.62'						Weather: Cloudy - 80'F	$\dashv$	N
Date	8/8/02						<b>Date/Time Start:</b> August 5, 2002 - 1130	See Site Pla	n
Time	0844						2400 Time Start 1 148600 0, 2002 1150		
Meas.							Date/Time Finish: August 5, 2002 - 1630		
From	TOC								-
Sample	Sam	-	SPT	% R	lec.		FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
Depth +3	I.I	).		1		PID (ppm)			
13									
+2									
_									Steel Protective Casing
+1									Ī
			-						2-inch ID PVC Riser
0						37.	(0140 7)		Sch 40
1	1		8	50	'	NA	(0'-2'):Brown, silt with fine sand, roots, trace fine gravel, dry. (SM)		0 1/01:
1	1		8	-					Grout (0'-1.5')
2			10					88888	Bentonite Chips
			18	50	)	NA	(2'-4'):Brown, silt with trace-fine sand, fragments of black shale,		(1.5'-2.5')
3			25				dry. (ML/SM)-Till		Morie #000 Sand
			25						(2.5'-2.75')
4			37	00		27.4	(41.6) 75 - 71 - 71 - 71 - 71 - 71 - 71 - 71 -		
5			13	80	'	NA	(4'-6'):Brown, silt with fine sand, trace-fine gravel, trace clay, d (ML/SM)-Till		Morie #00 Sand
3			16				(WL/SW)-1III		(2.75'-16')
6			19						(2.70 10)
			13	40	)	NA	(6'-7.5'): Same As Above With the Exception of Fragments		Water table (6.60')
7			21				Black Shale Present. (ML/SM)- Til		
0			32				Refusal at 7.5 feet. Drilled to 8 feet with HSAs		
8			50/.0	20	١	NA	(8'-8.8'): Same As Above. (ML/SM)-Til		2-inch ID, SCH 40, PVC
9			50/.3	20		INA	Refusal at 8.8 feet. Drilled to 10 feet with HSA:	<del>      -     -                    </del>	0.01 0-in Slot Well Screen (3' - 13')
10									
			32	10	)	NA	(10'-10.9'):Brown, silt with black shale, trace fine sand, dry. (ML/SM)-T		
11	ļ		50/.4	<u> </u>			Refusal at 10.9 feet. Drilled to 12 feet with HSA:		
12	1			1					
			34	10	)	NA	(12'-12.6'): Grey, silt with clay, black shale, moist to wet at 12.6 fe		
13			50/.1	T			(ML/SM)-Till.		
							Refusal at 12.6 feet. Drilled to 14 feet with HSA:		PVC Sump (13'-14')
14									PVC end cap
1.5	<u> </u>		50/.0	0		NA	Refusal at 14.0 feet; Tip of spoon wet		
15	<u> </u>			-			Drilled to 16 feet with HSAs.		16'
16				1				<u>#8:3:8:33</u>	10
							Boring terminated at 16 feet bgs.	<del>- </del>	
17									
10			-						
18	<u> </u>			<u> </u>			(COLD MINE)		
	G 4 2 55-	nic -	ATTENTION .				COMMENTS:		
	SAMPL SS = SP		METHOD POON				No environmental samples collected.		
			UTTINGS						
	C = COI								

### Table 3-7 SEAD-121C - Monitoring Well Construction Details

#### SEAD-121C AND SEAD-121I RI REPORT Seneca Army Depot Activity - Romulus, New York

Well	Well	Point of Well	Point of Well	Diameter	Diameter	Well	Scree	ened	Interval	Well	Ground	Elevation of	Elevation of	Height of	Well	Well
ID	Type	Relative to	Relative to	of	of	Screen	Re	elativ	ve to	Screen	Surface	Top of PVC	Top of	PVC Well	Casing	Screen
		Ground Surface	Top of PVC	Boring	Well	Length	7	ГОС	(ft)	Slot Size	Elevation	Well (MSL)	Casing	Stickup (ft)	Material	Material
		(ft)	(ft)	(in)	(in)	(ft)				(in)						
MW121C-3	T/WS	724.20	725.61	6	2	5	2.80	to	7.80	0.010	732.00	733.41	733.70	1.41	PVC	PVC
MW121C-4	T/WS	720.29	721.63	6	2	5	4.61	to	9.61	0.010	729.90	731.24	731.40	1.34	PVC	PVC
MW121C-5	T/WS	720.84	722.54	6	2	5	4.76	to	9.76	0.010	730.60	732.30	732.50	1.70	PVC	PVC
MW121C-6	T/WS	725.50	726.88	6	2	5	2.20	to	7.20	0.010	732.70	734.08	734.30	1.38	PVC	PVC

Notes:

T/WS = Till Weathered Shale Aqufier

20

PAGE 1 OF 2

				OVER	BURD	EN BO	RING RE	PORT		•
		PA	RSOI				LISACOE		NG NO.:	mw Demo-3
PROJECT	Γ:		PE	2				START D		iolzalor
SWMU#		: .	DRY		•		· · · · · · · · · · · · · · · · · · ·	FINISH E		10/2:102
SOP NO.		•		1175			<u></u>	CONTRA		Lyon Inlly
<del></del>					JMMARY	· · · · · · · · · · · · · · · · · · ·		DRILLER	-	Aam / Kil
DRILLING	HOLE	DEP		<u> </u>	PLER .	· .	: HAMMER	INSPECT		Jens Ben
METHOD	DIA.(ft)	INTERV	AL (ft)	SIZE	ТҮРЕ	ТҮРЕ	WT/FALL	CHECKE	Э ВҮ:	
H-A		0-8		2"	SS			CHECK I	ОАТЕ:	
				-				BORING (	ONVERTED	TO MW? . (Y) N
HSA DW MRSLC CA SPC		HOLLOW-SI DRIVE-AND MUD-ROTAL CASING AD SPIN CASIN	-WASH RY SOIL-C VANCER	• •	DRII  HMR SHR HHR DHR	SAFETY H HYDRAUL DOWN-HO	IAMMER IC HAMMER LE HAMMER	SS CS 51 NS ST	5 FT INTER	US SAMPLING VAL SAMPLING NG IBE
··	· · · · · · · · · · · · · · · · · · ·	<del></del> -		MO	NITORIN	IG EQUPM	IENT SUMMA	ARÝ		
INSTRU	MENT	DETEC	TOR	RANGE		BACKGRO	•		RATION	WEATHER
TYF	Έ	TYPE/EN	IERGY		. READING	TIME	DATE	TIME .	DATE	(TEMP., WIND, ETC.)
-		·								
	•									
	• :									
PID FID GMD SCT		PHOTO - IOI FLAME - IOI GEIGER MU SCINTILLAT	NIZATION JELLER D	DETECTOR ETECTOR	MONI' BGC CPM PPM RAC	BACKGRO COUNTS I PARTS PE	PER MINUTE R MILLION	DGRT PPB MDL	DRAEGER PARTS PER METHOD I	
				INV	ESTIGAT	TION DERI	VED WASTE	•	<del></del>	
	DATE L AMOU	UNT:		)/29/02 1/2 drem	)					
DRUM	1 #, LOC	CATION:				<u> </u>				
	MMEN						SAMPLES	TAKEN:	none	
							DUPLICATES			
							MS/MSD			
							MRD			

PAGE 1 OF 2

				OVÈR	BURD	EN BO	RING RE				
		PA	RSO	NS		CLIENT	WACOE	BORI	NG NO.:	Mw Dremo-4	
PROJECT :	: -,		Pti	0		·		START I		10/29/02	
SWMU#(A	AREA)	:	DKI	MO .		-		FINISH		<u>νοια την-</u>	
SOP NO.:	•		•	1175	**			CONTRA	CTOR: -	Hum Lun Dolla	
					ÜMMARY			DRILLE	•	Ham I Rak	
DRILLING	HOLE	DEP	тн	SAN	<b>MPLER</b>		HAMMER	INSPECT	or: Te	em Ben	
METHOD. 1	DIA.(ft)	INTERV	AL (ft)	SIZE .	TYPE .	TYPE	WT/FALL	CHECKED BY:			
HSA	414	0-8	}	2"	SS			CHECK	DATE:		
								BORING	CONVERTED	TO MW? (Y) N	
. :	•	•		•	DRII	LING AC	RONYMS	• •	-		
DW MRSLC CA SPC		HOLLOW-ST DRIVE-AND MUD-ROTA CASING AD SPIN CASIN	-WASH RY SOIL-C VANCER		HMR SHR HHR DHR	SAFETY H	IC HAMMER LE HAMMER	SS CS. 5I NS ST 3S		JS SAMFLING VAL SAMPLING NG BE	
		•	····	MC	NITODIN	C FOUR	IENT SUMMA	DV	<u> </u>		
INSTRUME	ENT	DETEC	CTOR	RANGE		BACKGRO			BRATION	WEATHER	
ТҮРЕ		TYPE/EN		·	READING	TIME	· DATE	TIME	DATE		
	.				·	1,1,12			DATE	(TEMP., WIND, ETC.)	
						<del> </del>		<del>                                     </del>		· · · · · · · · · · · · · · · · · · ·	
								_	<del>                                     </del>		
· · · · · · · · · · · · · · · · · · ·									<del>  `                                   </del>		
								<del></del>			
								<u> </u>	<u> </u>		
					MONI	CORING A	CRONYMS	<del>.,l</del>	· · · · · · · · · · · · · · · · · · ·	<u>L</u> .	
PID		101 - ОТОНЧ	NOITASIN	DETECTOR	BGD	BACKGRO		DGRT	DRAEGER T	TUBES	
FID				DETECTOR	СРМ	COUNTS I	PER MINUTE	PPB	PARTS PER	BILLION	
GMD SCT		GEIGER MU SCINTILLAT			PPM RAD		R MILLION	MDL	METHOD D	ETECTION LIMIT	
			HON DET	SCIOR .		RADIATIO	N METER	·			
				INV	ESTIGAT	ION DERI	VED WASTE		,		
. I	DATE		10	1-1							
SOIL	AMOU	NT:	<u> 10</u>	29/02 . Chum	-			-			
(fract	ion of a	irum)	1/2	- chum	/						
DRUM#	, LOC	ATION:			·				*		
COM	1MEN	ΓS:					SAMPLES T	AKEN:	None		
							SAMPLES				
							DUPLICATES				
							MS/MSD				
							MRD			······································	

OVERBURDEN BORING REPORT											
PARSONS CLIENT: WA COE BORING NO.: MW DICTIO -4											
COMMENTS:											
		DRILLER: Hany Lyon / Rick INSPECTOR: Russmunn / mcAllists									
		DATE: 10kg/ov									
D SAMPLING E P BLOWS   PENE- RECOV-	SAMPLE RAD	SAMPLE DESCRIPTION	USCS	STRATUM							
T PER TRATION ERY H 6 RANGE RANGE	INT NO. VOC SCRN	(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components	CLASS	CLASS							
(FT) INCHES (FEET) (FEET)		with amount modifiers and grain-size, density, stratification, wetness, etc.)  MWH Brown (alk) STLT last 3" 9" cf	- A								
8 2' 1'		- rock (ory)	W5	4							
7		_		. =							
2 5		muist Grey SFLT w/some dhy weathered Stale last 2" truce of clay.	m L	]							
$\frac{1}{10}$ 2' 1'		- last 2" truce of day.	,,,,_	$\dashv$							
4 32											
24		Dg wewthered shale	_	_							
5 542" 8" 6"		_ `									
6 61/1		Dia Maria D. C. a. S. Lia		4							
<del>                                    </del>		_no recovery_ Refusal Splot spon									
				_							
8		_		=							
		-									
10		-		-							
				_							
				_							
				-							
15				_							
	_										
		-		-							
		<u> </u>									
	-	<u> </u>		-							
		<u> </u>		_							
		<u> </u>									
20			-								

PAGE 1 OI

				OVER	BURD	EN BO	RING RE	PORT	·	
		PA	RSO	NS		CLIENT:	WACOE	BORI	NG NO.:	MWDRMO-6
PROJEC	Γ:			PIO				START I	DATE:	10/29/02
SWMU#	(AREA)	:		DILMO.				FINISH I	DATE:	<del></del>
SOP NO.	 :			741175				CONTRA	-*	Luan Dolly
			DRII	LING SU	JMMARY			DRILLER	t:	Hum I Rock
DRILLING	HOLE	DEF	тн	SAM	PLER		HAMMER	INSPECT	OR:	Ben / Jenu
METHOD	DIA.(ft)	INTERV	/AL (ft)	SIZE	ТҮРЕ	ТҮРЕ	WT/FALL	СНЕСКЕ	D BY:	
ASA	. G"	0-	8	2"	SS			СНЕСК	DATE:	
					•			BORING	CONVERTED	TO MW? (Y) N
	• :	•			DRII	LLING AC	RONYMS	•		
HSA DW MRSLC CA		HOLLOW-S DRIVE-ANI MUD-ROTA CASING AI SPIN CASIN	O-WASH RY SOIL-C OVANCER	CORING	HMR SHR HHR DHR	SAFETY H HYDRAUL DOWN-HO		SS CS 5I NS ST		US SAMPLING VAL SAMPLING ING
agentin Security	C LEMPS (S. P. C.			and the second of the second			Terresia de la composición de	3S	3 INCH SPL	<ul> <li>Comment of the second contribution</li></ul>
		<del></del>		MO	NITORIN	G EOUPN	IENT SUMMA	RV	<u>···</u>	
. INSTRU	MENT	DETE	CTOR	RANGE	·	BACKGRO			BRATION	WEATHER
TY		TYPE/E			READING	TIME	DATE	TIME	DATE	(TEMP., WIND, ETC.)
			121,031		Tagabaro .	. Interest	DAIL	, mile	DATE	(TEMF., WIND, ETC.)
							<u> </u>	<u> </u>		
						<del>-</del>		<del> </del>	<del>                                     </del>	
									1.	
<u> </u>						-		<u> </u>	<u> </u>	
					MONIT	FORING A	CRONYMS		<u> </u>	
PID FID GMD SCT		PHOTO - IO FLAME - IO GEIGER MI SCINTILLA	NIZATION UELLER D	ETECTOR	BGD CPM PPM RAD	BACKGRO COUNTS E PARTS PE	UND PER MINUTE R MILLION	DGRT PPB MDL	DRAEGER PARTS PER METHOD I	· .
· · · · · · · · · · · · · · · · · · ·			-	INV	ESTIGAT	ION DERI	VED WASTE	·····		
	DATE			, 7		1	····			·
	•		$t_0$	1/24/02						
	L AMOU ction of			1/2 drum	J					
DRUM	I#, LOC	ATION:								
CC	MMEN	TS:		·			SAMPLES	ΓAKEN:	none	
							SAMPLES			
							DUPLICATES			
							MS/MSD			
-							MRD			

	OVERBURDEN BORING REPORT												
		ı	PARS	30N9	<b>3</b> .			CLIENT: US A COE	BORING NO.:	mwormo -	-6		
COM	MENTS:					•			DRILLER: INSPECTOR: DATE:	Hurry Lyon	mcAu	ister_	
D E P † H (FT)	BLOWS PER 6 INCHES	PENE- TRATION RANGE (FEET)	RECOV- ERY RANGE (FEET)	DEPTH INT (FEET)	SAM NO.	VOC	RAD SCRN	DESCR (As per Burmeister: color, grain size, M with amount modifiers and grain-si	MPLE RIPTION IAJOR COMPONENT, ize, density, stratificatio	<i> </i>	USCS CLASS	STRATUM CLASS	
_	10	z'	344					- Rocky Fill			1	-	
2- -	8 4 9	J'	1					most wdy Brownsit			ML	- - - -	
4 5	# 8 50/2°	8,,	·\$11					Dry weathered shale  Dry weathered shale			1	- · -	
6-	94.*	ı''	4"				<u>-</u>	Dry weatheredshale			-	- - -	
-3							<u> </u>					 	
10_												- - -	
 							<u> </u>	<del>-</del> -				- - - -	
15_								 				- - -	
												  -	
_			:									- 	
20													

				OVER	BURD	EN BOI	RING RE	PORT				
		PA	RSO	NS		CLIENT:	WACOE	BORI	NG NO.:	MWDEMU-5		
PROJEC	Γ:		P:	ED.				START I		10/2/02		
SWMU#	(AREA)	:	Di	emo	-	·		FINISH I	ATE:	10/29/02		
SOP NO.	•,			74/175	-			CONTRA	CTOR:	Lyon Drilling		
			DRII	LING SU	JMMARY			DRILLER	: •	tary 1Rid		
DRILLING	HOLE	DEP	ГН	· SAM	PLER	. 1	IAMMER	INSPECT	OR:	Ben Henry		
METHOD	DIA.(ft)	INTERV	AL (ft)	SIZE	ТҮРЕ	TYPE	WT/FALL	CHECKED BY:				
H3A	6*	0-8	}	2"	<i>5</i> S			CHECK	DĄTE:			
	1								CONVERTED	TO MW? (Y) N		
	٠				DRII	LING ACI	RONYMS.					
HSA		HOLLOW-S		ERS	HMR			SS	SPLIT SPOO			
DW MRSLC		DRIVE-AND MUD-ROTA		ORING	SHR HHR		AMMER C HAMMER	ĊS 51		US SAMPLING VAL SAMPLING		
CA		CASING AL			LE HAMMER	NS	NO SAMPLI	·				
SPC		SPIN CASIN	Ģ		WL	WIRE-LINE		ST	SHELBY TU	_		
			• • :				r se je	38	3 INCH SPL	IT SPOON		
				RY	***************************************							
INSTRU	MENT	DETEC	TOR	RANGE		BACKGRO	JND	CALI	BRATION	WEATHER		
TYI	PE	TYPE/E	IERGY		READING	TIME .	DATE	TIME	DATE	(TEMP., WIND, ETC.)		
		,										
			4.									
					MONI	CORING A	CRONYMS	l	1.	<u> </u>		
PID		РНОТО - 101	NIZATION	DETECTOR	BGD			DGRT	DRAEGER	TUBES		
FID		FLAME - IO	NOITASIN	DETECTOR	СРМ	COUNTS P	ER MINUTE	PPB	PARTS PER	BILLION		
GMD SCT		GEIGER MU SCINTILLAT			PPM RAD			MDL	METHOD E	DETECTION LIMIT		
		SCHTILLA			KAD	RADIATIO	· · · · · · · · · · · · · · · · · · ·			·		
				INV	ESTIGAT	ION DERI	VED WASTE					
	DATE		······································	1.1	· · · · · ·				<del></del>	·		
SOI	L AMOI	JNT :		1/29/62 1/2 drum	<u> </u>			-				
	ction of			1/2 drun	<u> </u>							
DRUM	#, LOC	ATION:										
	MMEN				<del> </del>	•	SAMPLES T	AKEN:	none			
							SAMPLES		·			
							DUPLICATES		<del></del>			
							MS/MSD					
							MOUND					

Contractor NorthStor Duilling			PARSONS		BORING/ Sheet * 1 of 1 *					
		rthStar Drilling		DRILLING RECORD		WELL NO. MW-1				
Driller: S. Breeds Inspector: E. Ashton		-	BROWN CT MARKET G A D CEAD 100B			escript				
Rig Ty		CME-45		-	PROJECT NAME:   Seneca Army Depot - SEAD 122B	┼	SEE S	ITE PL	AN	
Mig z,	pe.	CIVIL		-	PROJECT NUMBER: 741401.031	┼				
GRO	UNDWA	ATER OBS	SERVA	TIONS		Locs	tion P	lan		
Water		1	Ī		Weather: Sunny - 75' F	Loca	Ition a	lau j		
Level	6.00	7.02	7.48			1				
Date	7/11/02		7/24/02	2	Date/Time Start: <u>7/08/02-1020</u>			SEE S	SITE PLAN	
Time	0830	0830	1035			7				
Meas.					Date/Time Finish: <u>7/08/02-1530</u>	_				
From				<del></del>						
Sample Depth		SPT	% Rec.	PID	FIELD IDENTIFICATION OF MATERIAL	sc	HEMA	ATIC	COMMENTS	
0-2	1.1.	1/3	50	(ppm) NA	(0'-2') Brown to Grey, roots, silt with clay, trace of fine sand	┼	т		stickup casing	
<u> </u>	<del> </del>	5/8	+	1444	and fine gravel, dry. (SM/SC)				Grout 0-1.5'	
	<del>                                     </del>	1 3.5	<del> </del>	<del> </del>	and the graver, dry. (Sivise)	-	1	<del></del>	Bentonite Pellets 1.5'-3.5'	
	<b> </b>	<del> </del>	†	<del>                                     </del>					2" PVC Riser	
2-4		17/22	NR	NA	(2'-4') No recovery in split-spoon.				Z I VO NIGOI	
		21/20			, , , , , , , , , , , , , , , , , , , ,					
					1					
					1			4	Filtered sand	
									(# 00N) pack -	
4-6	<u> </u>	15/17	50	NA	(4'-6') Brown, silt with trace of clay, trace of fine sand, fine to				3.5'-4'	
	<u> </u>	23/30	<u> </u>		medium gravel, black shale interbedded, dry. (SM (Till))			<b>←</b>	Filtered sand (#0)	
'	<b></b>	ļ'	<u> </u>	<u> </u>					pack - 4'-17'.5	
	<b> </b>	<u> </u> '	<b> </b> '	<u> </u>				<u> </u>		
'	<b> </b>	50/	<del> </del> '	NTA.					٠,	
6-8	<del> </del>	50/ 50/.3	20	NA	(6'-6.8') Same as above. (SM (Till)).				]	
	<del> </del>	30/.5	ļ'	<u> </u>	Note: Refusal encountered at 6.8' bgs. Course gravel of black shale					
		<del> </del> '	<del>                                     </del>	<del> </del>	in tip of spoon. Drilled to 8' bgs with HSAs.					
	<del> </del>	<del> </del>	<b> </b>		-			<b></b>	0.010 Slot PVC Screen	
8-10	<del> </del>	50/.3	2	NA	[8'-8.3') Same as above. (SM (Till))		<b> </b>		6'-16'	
<del>" . `</del> '	<del> </del>	301.5 2 11/1			Note: Refusal encountered at 8.3' bgs. Black shale predominant		<b> </b>			
	<del>                                     </del>	<del> </del>	<del>                                     </del>	<del>                                     </del>	in spoon. Drilled to 10' bgs with HSAs.		<b></b>			
	ļ		f	<b></b>	in spoon. Dimod to 10 ogs with 120715.			٠.		
						1 1	<b></b>			
10-12		25/31	80	NA	(10'-11.8') Brown, silt with trace clay and interbedded shale, dry.				,	
		50/			(SM (Till))					
		50/.3			Note: Refusal encountered at 11.8' bgs. Drilled to 12' bgs with HSAs.					
12-14			100	NA	(12'-14') Same as above. (SM (Till))					
	1040	40/40	<b>└</b>	<u> </u>		] [				
	<b> </b>		igsquare	<u> </u>					j.	
	<b> </b> '	<b></b>	<b></b>	<u> </u>	•					
14 16	<b> </b>	(5)	10	- J						
14-16	<b> </b> '	65/ 50/.2	10		(14-14.7) Brown to Grey, silt with clay and interbedded shale, wet.				16'	
<b> </b>	<del>                                     </del>	307.2	$\longrightarrow$		(SM (Till))		4		Sch. 40 PVC Sump	
<del>  </del>	<del> </del>		<del>  </del>	<b> </b>	Note: Refusal encountered at 14.7 bgs. Attempted to drill to 20' bgs,	1			16.5' 16'-16.5'	
16-18		NA	NA	NA	but encountered auger refusal at 17.5' bgs.			]		
10-10		IVA	INA	INA		Į		1		
<del>                                     </del>	-				Terminated soil boring at 17.5' bgs.	<del> </del>			17.5'	
		<del></del>			COMMENTS:	Щ_				
	SAMPLIN	IG METHO	)D		Collected soil sample 122B-1040 for total lead analysis.					
SS = SPLIT SPOON					6-inch PVC sump installed at bottom of well screen.					
	A = AUGER CUT				2-inch well installed.					
•	C = CORED									

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

PROTECTIVE RISER COMPLETION

			COLIT .	COMIL LIE	11011		
PARSONS	C	LIENT: A	COE			WELL#:	/
PROJECT: <u>Jewecq</u>	Army Donat			P	ROJECT NO:	74/40	1.0310
LOCATION: <u>Romu</u>	lus, NY	•			INSPECTOR:		
·				CI	HECKED BY:	E JA	cha
DRILLING CONTRACTOR:	North Stan	Prilling	si c		POW DEPTH:	16.5	
DRILLER:	Scott Bre	265		INSTALLATION	N STARTED:		
DRILLING COMPLETED:	7/08/02		INS	TALLATION C	OMPLETED:	·····	
BORING DEPTH:	17.5'			FACE COMPLE		7/12	
DRILLING METHOD(S):	Hollow Ston	augos.	COMPLET	TON CONTRAC	TOR/CREW:	Norths	Ta- Drilling
BORING DIAMETER(S):	8,25			ROCK CONFIR		<i>y</i>	-
ASSOCIATED SWMU/AOC:	SEAD-	1228	ESTIMATI	ED GROUND E	ELEVATION:	631	14'
PROTECTIVE SURFACE CAS	SING:	. (					
	DIAMETER:	4	LENGTH:	3.5'	_	TOR:	Steel
RISER:							
TOC: 637./6	TYPE: -	140, pvc	DIAMETER:	2"	LENGTH:	8.02'	
SCREEN:							SLOT
TSC: 629.14	TYPE: £	Lygprc	DIAMETER:	2"	LENGTH:	_10'	SIZE: 10-5/07
POINT OF WELL: (SILT SUMP							
YPE:	_ BSC: <b>6</b>	19.14	POW	6/8.64	•		
GROUT:							
TG:	635.14'	ТҮРЕ: <u>4</u>	ment 18on	LENGTH:	_	1.5'	
SEAL: TBS:	6 33.64	TYPE: _/	Pellets	LENGTH:	_	2'	
SAND PACK: TSP:	631.64	TYPE:	1001 # 00N	<i>て3.5~47</i> /2.LENGTH:		14'	
SURFACE COLLAR:							
TYPE: Concreto	RADIUS: 2	'x2'	THICK	NESS CENTER	·_6′′_	THICKNES	S EDGE: 6"
CENTRALIZER DEPTHS						**************************************	
DEPTH 1: <u>M</u>	DEPTH 2:	M	DEPTH 3:	M	-	DEPTH 4:	NA
COMMENTS:							
<del>[0</del> 0	- Boring L	y for	in a	by the de	Pails		
	•						
)							
<i>.</i>	* ALi	L DEPTH MEAS	SUREMENTS	REFERENCE	TO GROUN	ND SURFACE	
							· · · · · · · · · · · · · · · · · · ·

					PARSONS	BORING/ Sheet #1 of 1 #				
Contractor: NorthStar Drilling			ır Drillin	g	DRILLING RECORD	1	LL N		MW-2	
Driller: S. Breeds				<u>.</u>			tion De			
Inspector: E. Ashton				-	PROJECT NAME: Seneca Army Depot - SEAD 122B	SEE SITE PLAN				
Rig Type: CME-45				-	PROJECT NUMBER: 741401,031					
1				<del>-</del>		1				
GROU	JNDWA	TER OBS	SERVA	TIONS		Loca	tion Pl	an		
Water					Weather: Cloudy - 65'F					
Level	6.5	7.38	7.54			1				
Date 7/12/02 7/22/02 7/24/02			Date/Time Start: 7/09/02-0920	1		SEE S	ITE PLAN			
Time 0835 0835 1040				7						
Meas.					Date/Time Finish: 7/09/02-1302	]				
From	TOC	TOC	TOC		,					
Sample	Sample	SPT	%	PID	FIELD IDENTIFICATION OF MATERIAL			TIC	COMMENTS	
Depth	I.D.		Rec.	(ppm)					stickup casing	
0-2		2/3	50	NA	(0'-2') Brown, silt with clay, trace of fine sand and fine gravel, roots, dry.			4	Grout 0'-1.5'	
		3/4	<u> </u>	<u></u>	(SM/SC)			<u> </u>		
					·			-	Bentonite Pellets 1.5'-3.5'	
		<u></u>					<b>←</b>	<del>                                     </del>	2" PVC Riser	
2-4		5/8	40	NA	(2'-4') Same as above, except no roots and color of soil brown to grey.			i		
		10/14		<u> </u>	(SM/SC)					
								ĺ		
			<u> </u>						Filtered sand	
	4-6 13/23 100 NA		<u></u>			l	ے ا	(#00N) pack -		
4-6			NA	(4'-6') Brown, silt with clay and interbedded shale, dry. (SM/SC (Till))				3.5'-4'		
		35/40	<u> </u>			1		]		
						1				
			<u> </u>			ł		_		
							_ <		0.010 Slot PVC Screen	
6-8		50/	NA	NA	(6'-8') No recovery.			]	6'-15.7'	
		50/.3			Note: Refusal encountered at 6.8' bgs. Drilled to 8' bgs with HSAs.			] .		
						İ		] ←	Filtered sand (#0)	
			1					]	pack - 4'-16.5'	
								]		
8-10		50/.3	NA	NA	(8'-10') No recovery.			]		
				Note: Refusal encountered at 8.3' bgs. Drilled to 10' bgs with HSAs.			]	-		
					Course gravel of black shale present in tip of spoon.				· ·	
								] ,		
10-12		37/40	50	NA	(10'-11.2') Brown to Grey, silt with clay and interbedded shale, dry.					
		50/.2			(SM/SC (Till))					
									}	
12-14		34/25	100	NA	(12'-14') Grey, silt with clay and interbedded shale, moist. (SM/SC (Till))					
		23/24						]		
						1		]		
								]		
14-16	122B-	22/24	80	NA	(14'-16') Same as above. (SM/SC (Till))	1				
	1041	33/50/								
		.4		1	· ·	1		]		
						1		] _	Sch. 40 PVC Sump	
16-18		50/.3	2	NA	(16'-16.3') Weathered black shale, wet. (Shale)	1	-	4	16' 15.7'-16'	
					Note: Refusal encountered at 16.3' bgs. Attempted to drill to 20' bgs, but				16.5'	
			1		encountered auger refusal at 16.5' bgs. Boring Terminated at 16.5' bgs.					
	<u> </u>	<del></del>	<u> </u>	<del></del>	COMMENTS:				<del></del>	
1	SAMPLIN	G METHO	)D		Collected soil sample 122B-1041 for total lead analysis.					
1	SS - SPLIT SPO				3-inch PVC sump installed at bottom of well screen.					
1	A = AUGER CU	TTINGS			2-inch well installed.					
1	C - CORED									

## OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

PROTECTIVE RISER COMPLETION

PARSONS	CLIENT: A	COE	WELL#: 2
PROJECT: Se NOCO	a Kony Brot	PROJECT NO:	74/401.03/00
LOCATION: Roma	u/45 Ny	INSPECTOR:	EDA shta
·		CHECKED BY:	E OH s Lotan
DRILLING CONTRACTOR:	North Ster Polling I.	POW DEPTH:	16.0'
DRILLER:	Scott Breads	INSTALLATION STARTED:	7/09/02
DRILLING COMPLETED:	7109/02	INSTALLATION COMPLETED:	7/09/02
BORING DEPTH:	16.5'	SURFACE COMPLETION DATE:	7/12/02
DRILLING METHOD(S):	Hollar Stem auger	COMPLETION CONTRACTOR/CREW:	New the Stan Prilling
BORING DIAMETER(S):	F. 25	BEDROCK CONFIRMED (Y/N?)	
ASSOCIATED SWMU/AOC:	SEAD-122B	ESTIMATED GROUND ELEVATION:	624.83'
PROTECTIVE SURFACE CAS	SING:		
	DIAMETER: 9"	LENGTH: 3.5	TOR: Stiel
RISER:			
TOC: 626. 82	TYPE: Sol.40, PVC	DIAMETER: 2" LENGTH:	7.99'
SCREEN:	t		SLOT
TSC: 6/8.83	TYPE: Sch 40, PK	DIAMETER: 2 LENGTH:	9.7' SIZE: 10-Slot
POINT OF WELL: (SILT SUMP			
YPE:	BSC: 609.13	POW: 608.83	
GROUT:			
TG	: 629.83 TYPE:	Grat/Bod, LENGTH:	1.5'
SEAL: TBS		Relati LENGTH:	2 '
SAND PACK: TSP	: 621.33 TYPE:	Mono # and C 3.5-47 " POC 6-16 LENGTH:	/3'
SURFACE COLLAR:			- / 1
TYPE: (ancreto	radius: $2 \times z'$	THICKNESS CENTER: 6	THICKNESS EDGE:
CENTRALIZER DEPTHS			
DEPTH 1:	DEPTH 2:	DEPTH 3:	DEPTH 4:
COMMENTS:			
J-	ee Boning Lag .	for in doth det	ails
	* ALL DEPTH ME	EASUREMENTS REFERENCED TO GROU	JND SURFACE

-					PARSONS BORING/ Sheet					
Contractor: NorthStar Drilling		g	DRILLING RECORD	WELL NO.	MW-3					
Driller: S. Breeds		-		Location Descript						
Inspect		E. Asht		-	PROJECT NAME: Seneca Army Depot - SEAD 122B	SEE SITE PLA	AN			
Rig Type: CME-45			<u> </u>	-	PROJECT NUMBER: 741401.031					
GRO	UNDWA	TER OB	SERVAT	TONS		Location Plan				
Water		I			Weather: Sunny - 60'F					
Level	5.6	6.44	6.68		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	7				
Date	7/12/02			<b></b>	Date/Time Start: 7/10/02 - 0840	SEE S	SITE PLAN			
Time	0840	0840	1045	├	D.4 FF: FF: 1 (10/00 0000					
Meas. From	TOC	TOC	TOC		Date/Time Finish: 7/10/02 - 0930	-				
	Sample		%	PID	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS			
Depth	I.D.		Rec.	(ppm)			stickup casing			
0-2		5/6/	80	NA	(0'-2') Brown, silt with minor clay, roots, trace of fine sand and fine to	\ \ ←	Grout (0'-1.5')			
		21/22	ļ	<u> </u>	medium gravel, dry. (SM)					
		ļ	ļ	<del> </del>			011 D) (O Disess			
2-4		22/25	2	NA	(2'-4') Fine to course gravel. Very little to no recovery in spoon.		2" PVC Riser			
2-4	<del> </del>	23/28		TAT	(2-4) This to course graver. Very fittle to no recovery in spoon.					
						ـه ا	Bentonite Pellets (1.5'-3')			
						<b></b>	Filtered sand			
							(#00N) pack - 3'-3.5'			
4-6		23/21	80	NA NA	(4'-6') Grey, silt with trace clay, fine to medium gravel, trace of fine		Filtered sand (#0) pack			
		30/33	ļ	├	sand, dry. (SM)		(3.5'-15')			
				<del> </del>						
		<del>                                     </del>					0.010 " Slot, Sch 40 PVC			
6-8		50/.3	NA	NA	(6'-6.3') No recovery.		Screen (4'-14')			
					Note: Refusal encountered at 6.3' bgs. Drilled to 8' bgs. with HSAs.					
				ļ	Course gravel of black shale in tip of spoon.					
			ļ	<del> </del>						
8-10	<b></b>	30/	20	NA	(8'-8.8') Brown to Grey, silt with clay and interbedded shale, dry.					
0-10		50/.3	-20	1111	(SM/SC (Till))					
					Note: Refusal encountered at 8.8' bgs. Drilled to 10' bgs. with HSAs.					
					,					
10.10		251	40-							
10-12		35/ 50/.3	40	NA	(10'-10.8') Same as above. (SM/SC (Till))					
		307.3	<b></b>	<del> </del>	Note: Refusal encountered at 10.8' bgs. Drilled to 12' bgs. with HSAs.					
12-14	122B-	38/	50	NA	(12'-12.8') Brown to Grey, silt with clay and interbedded shale, dry.					
	1042	50/.3		<b> </b>	(SM/SC (Till))					
				<u> </u>	Note: Refusal encountered at 12.8' bgs. Drilled to 14' bgs. with HSAs.		,			
		<b></b>		<del> </del>			14'			
14-16		50/.1	50	NA	(14'-14.1') No recovery.		Sch. 40 PVC Sump			
					Note: Refusal encountered at 14.1' bgs. Tip of spoon wet. Attempted to		14.5' 14'-14.5'			
					drill to 20' bgs., but encountered auger refusal at 15' bgs.		ŀ			
	<u> </u>			<u> </u>	Terminated soil boring at 15' bgs.		15'			
16-18										
	<b></b>	<b> </b>		<b> </b> -						
		<u></u>			COMMENTS:		<u> </u>			
	SAMPLIN	IG METHO	OD		Collected soil sample 122B-1042 for total lead analysis.		ē.			
SS = SPLIT SPOON					6-inch PVC sump installed at bottom of well screen.					
A - AUGER CUTTINGS					2-inch well installed					
1	C = CORED									

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

PROTECTIVE RISER COMPLETION

	TROI	ECIIVE	MISER (		.ION	·	
PARSONS			4 COE			WELL#:	3
1 <u>4</u> _	a Kony Dg,	201	_ ]	Pl	ROJECT NO:	74/40	1.03/00
LOCATION: Romaln	s Ny		_	. I	NSPECTOR:	EJA	shta
				CH	ECKED BY:	EOM	tshta
DRILLING CONTRACTOR:	Northster Or	Vling In	<u> </u>	P	OW DEPTH:	14.5	_ /
DRILLER:	Scott Bre	eds		INSTALLATION	STARTED:	. 7110	102
DRILLING COMPLETED:	7/10/02		INS?	TALLATION CO	OMPLETED:		10/02
BORING DEPTH:	15			FACE COMPLET		7/12/	62
DRILLING METHOD(S):	Hollow sten	Auger	COMPLET	ION CONTRAC	TOR/CREW:	Nathre	a hilling
BORING DIAMETER(S):	F. 25	V		ROCK CONFIRM		y	
ASSOCIATED SWMU/AOC:	SEAN	-1228	-	ED GROUND E	-	625.	PZ'
PROTECTIVE SURFACE CAS	ING:						
	DIAMETER:	4"	LENGTH:	3.5'	_	TOR:	Hal
riser: toc: <u>627. 9</u> 4	TYPE: L	Lyo pre	DIAMETER:	2"	LENGTH:	6.12	
SCREEN:							SLOT
TSC: <u>621.82</u>	TYPE: Se	Lyo, puc	DIAMETER:	2"	LENGTH:	10	SIZE: <u>/ 0- 5/0</u> ,
POINT OF WELL: (SILT SUMP)							
YPE:	BSC: 6	11.82	POW:	611.32			
GROUT:							100
TG:	625.52	TYPE: <u>(</u>	Come A/Benj	LENGTH:		1.5	
SEAL: TBS:	624.32'	E	fellets	LENGTH:		15'	
SAND PACK: TSP:	622.82.	ТҮРЕ:	man & 4 con	C3-3,5') S')LENGTH:	_	12'	The second secon
SURFACE COLLAR:							
TYPE: (owereto	RADIUS:	2 x2	THICK	NESS CENTER:	6"	THICKNES	SS EDGE: 6 "
CENTRALIZER DEPTHS							
DEPTH 1: M	DEPTH 2:	NA	DEPTH 3:	NA.	-	DEPTH 4:	r4
COMMENTS:							
	Sel Bar	ry Ly	. for	in-dep	th of	Las	
	* AI	L DEPTH ME	ASUREMENTS	S REFERENCED	TO GROU	ND SURFACE	

### APPENDIX B NOTICE OF INTENT TO PROCEED



100 High Street, 4th Floor • Boston, Massachusetts 02110 • (617) 946-9400 • Fax (617) 946-9777 • www.parsons.com

August 06, 2010

Mr. Julio Vazquez
U.S. Environmental Protection Agency, Region II
Superfund Federal Facilities Section
290 Broadway, 18th Floor
New York, NY 10007-1866

Mr. Kuldeep K. Gupta, P.E.
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation
Remedial Bureau A, Section C
625 Broadway
Albany, NY 12233-7015

Mr. Mark Sergott
Bureau of Environmental Exposure Investigation, Room 300
New York State Department of Health
547 River Street, Flanigan Square
Troy, NY 12180

SUBJECT:

Draft Well Decommissioning Plan for 18 SWMUs, Seneca Army Depot Activity, Seneca Army Depot Activity, Seneca County, New York; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Well Decommissioning Plan for 18 SWMUs (SEADs 4, 5, Ash Landfill, 11, 12, 24, 25, 26, 27, 48, 59, 63, 67, 70, 71, 119B, 121C, and 122B) at the Seneca Army Depot Activity in Seneca County, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006). This work plan is essentially equivalent to the one that has been previously been approved for the decommissioning of wells at SEAD-13 at the Depot.

Parsons anticipates that we will initiate the decommissioning activities at the identified sites shortly after Labor Day once we confirm the availability of the driller and field personnel so that we can complete field activities associated during the summer and fall 2010.

Should you have any questions, please do not hesitate to call me at (617) 449-1565 to discuss them.

Sincerely,

Jeffrey W. Adams Project Manager

**Enclosures** 

cc: M. Heaney, TechLaw

S. Absolom, SEDA

R. Battaglia, USACE, NY

J. Nohrstedt, USACE, Huntsville

K. Hoddinott, USACHPPM





100 High Street 4th Floor • Boston, Massachusetts 02110 • (617) 946-9400 • Fax (617) 946-9777 • www.parsons.com

August 06, 2010

Mr. John Nohrstedt U.S. Army Corps of Engineers Engineering and Support Center, Huntsville Attn: CEHNC-FS-IS 4820 University Square Huntsville, Alabama 35816-1822

**SUBJECT:** 

Draft Well Decommissioning Plan for 18 SWMUs, Seneca Army Depot Activity, Seneca County, New York; Contract W912DY-08-D-0003, Delivery Order 0008

Dear Mr. Nohrstedt:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft Well Decommissioning Plan for 18 SWMUs (SEADs 4, 5, Ash Landfill, 11, 12, 24, 25, 26, 27, 48, 59, 63, 67, 70, 71, 119B, 121C, and 122B) at the Seneca Army Depot Activity in Seneca County, New York. This work plan is essentially equivalent to the one that has been previously been approved for the decommissioning of wells at SEAD-13 at the Depot. This work was performed in accordance with the Scope of Work for Delivery Order 0008 under Contract W912DY-08-D-0003.

Parsons anticipates that we will initiate the decommissioning activities at the identified sites shortly after Labor Day once we confirm the availability of the driller and field personnel so that we can complete field activities associated during the summer and fall 2010.

Parsons appreciates the opportunity to provide you with the Final Well Abandonment Plan for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1565 to discuss them.

Sincerely.

Jeffrey W. Adams Project Manager

Enclosures

cc: S. Absolom, SEDA

K. Hoddinott, USACHPPM R. Battaglia, USACE, NY

### APPENDIX C WELL DECOMMISSION RECORD

# Table 2-4 Well Decommissioning Record Well Abandonment Plan Seneca Army Depot Activity

WELL DECOMMISSIONING REC	CORD			
Site Name: Seneca Army Depo	o†	Well ID:	MW-28	
	UNFILL	Driller:		avid LIDA
Drilling Company: Geologic North 5			Scott Dillman	
		Date: 9		
DECOMMISSIONING DA	гл		<del></del>	
(Fill in all that apply)	IA	Depth	WELL SCHEMATIC*	1m 5
(I in in an eller apply)		(feet)	2.25	10.3 ft
OVERDRILLING		(1001)	stick up Removed	TOP TO TO
Interval Drilled			ramoved	4 Soil
Drilling Method(s)		The second secon		7 3011
Borehole Dia. (in.)		The control of the co		11
Temporary Casing Installed? (y/n)				A CONTRACTOR OF THE CONTRACTOR
Depth temporary casing installed		5	PULLED	And the second s
Casing type/dia. (in.)			200	Grout
Method of installing			PUC	
			- WELL	
CASING PULLING				BOTTOM
Method employed	Grout, Pull, Growt	10		1 06
Casing retrieved (feet)	10.5 ft		, /	
Casing type/dia. (in.)	Z"PVC			, well
CARE DEDECODA MINIC			$\perp$	PC .
CASE PERFORATING		15		1
Equipment used		15		
Number of perforations/foot Size of perforations	·			
Interval perforated				
Interval perforated				
GROUTING		20		
Interval grouted (FBLS)	1-8.3			4
# of batches prepared	1 0. 9		<b>—</b> / /	7
For each batch record:				
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	2-6a95	25	- /	
L .	Type Y Portland			
Quantity of bentonite used (lbs.)	10 pounds			NOT
Quantity of calcium chloride used (lbs.)			-1	DRILLED
Volume of grout prepared (gal.)		_		BRILLED
Volume of grout used (gal.)	Saal	30		4
COLOR COLOR			Lyfan Lyfan	
COMMENTS: Depth to water = 6.		* Sketch in all rel	evant decommissioning data, inch	uding:
	no with grout.	interval overdrille	ed, interval grouted, casing left in l	hole,
	ing borehole.	well stickup, etc.		
Added soil on top.				

Geologic North Star

Drilling Contractor

### WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: David LION Driller: Site Location: SEAD Drilling Company: 6-6-1091C Scott Dillman Inspector: . Date: 120/10 **DECOMMISSIONING DATA** WELL SCHEMATIC\* (Fill in all that apply) Depth 3.94 (feet) Stick of Removed OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL Dotton 07 CASING PULLING Well 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Number of perforations/foot NOT Size of perforations DRILLEB Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Ouantity of water used (gal.) Quantity of cement used (lbs.) Cement type ype Y Portla Quantity of bentonite used (lbs.) NOT pounds Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) 6 gai COMMENTS: Depth to water ft from TOC \* Sketch in all relevant decommissioning data, including: Knocked out end cap. with grout. interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

Drilling Contractor

### WELL DECOMMISSIONING RECORD Seneca MW-31 Site Name: ACMY Well ID: SEA D Site Location: Driller: nowid Lion Drilling Company: G-Cologic Dillman Inspector: Date: 120/10 DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth (feet) stick up **OVERDRILLING** Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Grout Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING Method employed 10 BOTTUM Casing retrieved (feet) OF Casing type/dia. (in.) Well CASE PERFORATING Equipment used 15 Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type pet Portla Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLEL Volume of grout prepared (gal.) Volume of grout used (gal.) 30 10 gal Depth to water \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

Drilling Contractor

### WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: SEA D Site Location: Driller: G-POLOGIC Inspector: Scott Dillman Drilling Company: Date: 20/10 DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth 2.6 1 (feet) stick up Rumoved **OVERDRILLING** Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Grout Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed well Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 COMMENTS: Depth to water = ft from TOC \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc. Added

Geologic North Star

Drilling Contractor

### Table 2-4 Well Decommissioning Record

Well Abandonment Plan Seneca Army Depot Activity

WELL DECOMMISSIONING R	ECORD			
Site Name: Seneca Army De	00±	Well ID:	MW-34	
Site Location: SEAD - ASh Lo	and fill	Driller:		David Lion
Drilling Company: Geologic North	Star		Scott Dillmar	
		Date: 9	4 4	e Personal and control of the contro
DECOMMISSIONING I	DATA		WELL SCHEMATIC*	ķ ,
(Fill in all that apply		Depth	I do ni	18.1
		(feet)	1,4 1	1
OVERDRILLING		-0	stick up?	TOP TO TO
Interval Drilled	-	- Commission of the Commission		4 Soil
Drilling Method(s)				•
Borehole Dia. (in.)				No. of Control of Cont
Temporary Casing Installed? (y/n) Depth temporary casing installed		5		
Casing type/dia. (in.)			· - PULLED	Grout
Method of installing			PULLED	Grow.
			WELL	
CASING PULLING		A-A-		
Method employed	Grout Pull, Grait	10		
Casing retrieved (feet)	18.1 FH			
Casing type/dia. (in.)	2"PVC			Water and the second
C. C. PERRON LANGE			***************************************	Manage of the second
CASE PERFORATING		15		
Equipment used Number of perforations/foot				
Size of perforations				0-4
Interval perforated				Bother
		7 .		1
GROUTING		20		/ well
Interval grouted (FBLS)	1-16.2A+			/
# of batches prepared				
For each batch record:	processor and the second secon			
Quantity of water used (gal.)	18	25		
Quantity of cement used (lbs.)	2-6ag5	2)		
Cement type Quantity of bentonite used (lbs.)	Type Y Portland			NOT
Quantity of calcium chloride used (lbs.)	16 pounds			
Volume of grout prepared (gal.)				DRILLED
Volume of grout used (gal.)	Maal	30		
			themsessed L	<del></del>
COMMENTS: Depth to water =	7,58 Ft from TOC	* Sketch in all re	elevant decommissioning data,	including:
	asing with grout.	interval overdrill	led, interval grouted, casing left	in hole,
	aining borehole.	well stickup, etc.		
Added soil on top.		****		

Geologic North Star
Drilling Contractor

WELL DECOMMISSIONING RECORD	, 5
Site Name: SENECH ARMY NEPST.	Well ID: MW351
Site Location: SEAN - Ash Land Fill	Driller: David Liens
Drilling Company: Gedogic North star	Inspector: Seatt Nillman
Drining Company. Beagair 1001 12 312	
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 3 Stickup
OVERDRILLING	(ICCI) D. Remned 101 10
Interval Drilled	70
Drilling Method(s)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Borehole Dia. (in.)	= sail
Temporary Casing Installed? (y/n)	11/100
Depth temporary casing installed	10 10 11 11
Casing type/dia. (in.)	- Casing Grow
Method of installing	Cast oil
CASING PULLING	1 11 17
Method employed Grout in Place	20 - '
Casing retrieved (feet)	
Casing type/dia. (in.)	345
CASE PERFORATING	20 = 20
Equipment used	30 - 25
Number of perforations/foot	- Con place
Size of perforations	1,41,
Interval perforated	
GROUTING	40 = 6005
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	50
Quantity of cement used (lbs.)	
Cement type	_
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (10s.)	
Volume of grout prepared (gal.) Volume of grout used (gal.)	60 - 56.3
volune of grout used (gal.)	
COMMENTS: Apth to water = 4.29 H. fonto	The state of the s
Knocked out end plug: Loaded casing with	interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
grante Dug around Elsing cut off below	man astraup, ess.
grade. Topped att grant. Filed hall with	
Geologic North Star sail.	
	Department Representative
	AF SPORT STEERING STOPPED STEERING TE

WELL DECOMMISSIONING RECORD	3
	3
Site Name: SENECH ARMY NEPOT	Well ID: MW36
Site Location: SEAD - ASH Land Fill	Driller: Devid Lions
Drilling Company: Gedogic North star	Inspector: Scatt Sillman
J	Date: 1/2/2011
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 8 11 Ck. 10
(1 III to all task apply)	(fact) STICE   m 0 Th
OVERDRILLING	(leet) D Removed TD
Interval Drilled	
Drilling Method(s)	- 1 16.6
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5
Casing type/dia. (in.)	5 Pulled Growt
Method of installing	
CASING PULLING	- P3.7
	- 10 - (what)
Casing retrieved (feet)	- '''
Casing type/dia. (in.)	- v
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	1
Interval perforated	15.8
GROUTING	20 - 1
Interval grouted (FBLS) 0 -15.8 F4	
# of batches prepared	PIOT
For each batch record:	
Quantity of water used (gal.)	Desuis
Quantity of cement used (lbs.)	
Cement type Type   Part and	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Aroth to water = 3.45 At. fonth	
V I A I I I I I I I I I I I I I I I I I	Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole,
greate Pulled casing. Topled off great	well stickup, etc.
to new surface.	
JBM	

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING	RECORD				
Site Name: Seneca Army A	epot	Well ID:	MW-3-	7	The state of the s
Site Location: SEAD ASH	CHNOFILL	Driller:		- · · · · · · · · · · · · · · · · · · ·	evid Lion
Drilling Company: G-Cologic North		The second secon	Scott Di		
			121/10	TIPPLULP	
DECOMMISSIONING	DATA		WELL SCHE	A A TICE	
(Fill in all that app		Depth	WELL SCHE	MATIC*	13.75
(i iii iii iiii iiii iipp	•37	(feet)	4	(,/)	1 2.77
OVERDRILLING		(1001)	5t	Hok up moved	TOP TO TA
Interval Drilled				MENEN	Soil
Drilling Method(s)				1	†
Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)		_			
Depth temporary casing installed		5	ان و 🔃	LED	
Casing type/dia. (in.)			PUC		Grout
Method of installing			70	[U- =	+-
CASING DULLING			W-		
CASING PULLING Method employed	( A 0 1 ( ) 1	10			
Casing retrieved (feet)	Grout, Pull, Growt				
Casing type/dia. (in.)	13.75 Ft 2"PVC		-	'	1
Casing typerdia. (iii.)	2 146				BOTTOM
CASE PERFORATING					1 0+11
Equipment used		15			well
Number of perforations/foot		CONTRACTOR OF THE PARTY OF THE	with the state of		
Size of perforations					, ,
Interval perforated					
		2 0			real and a second
GROUTING		20			
Interval grouted (FBLS)	1-13.75			1/	
# of batches prepared					
For each batch record:			-		1
Quantity of water used (gal.) Quantity of cement used (lbs.)	18	25			
Cement type	2 5ag 5	~)			1
Quantity of bentonite used (lbs.)	Type Y Portland			V	11.
Quantity of calcium chloride used (lbs.)	18 pounds				NOT
Volume of grout prepared (gal.)					DRILLED
Volume of grout used (gal.)	13 gal	30	-		
	<u> </u>				
COMMENTS: Depth to water =	630 At from TOC	* Sketch in all sal	levant decommission	ning dat-	
	casing with grout.	interval overdrille	ed, interval grouted,	ung data, includ , casing left in he	ning: ole,
Pulled casing. browted rem	aining borehole.	well stickup, etc.	•		1
Added soil on top.					

Geologic North Star

Drilling Contractor

Table 2-4 Well Decommissioning Record Well Abandonment Plan Seneca Army Depot Activity

WELL DECOMMISSIONING RECORD		
Give November 1 Age of the last of the las	Well ID: MW.38D	
Site Name: ASH Carollell Site Location: SEADG		
	Driller:	
Drilling Company: Geolgic N.5	Inspector:	
	Date:	
DECOMMISSIONING DATA	WELL SCHEMATIC*	
(Fill in all that apply)	Depth	
	(feet) \$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	3.
OVERDRILLING		
Interval Drilled		
Drilling Method(s)		
Borehole Dia. (in.)		
Temporary Casing Installed? (y/n)		
Depth temporary casing installed		
Casing type/dia. (in.) Method of installing		
Method of histarring		
CASING PULLING		
Method employed	10 — 1	
Casing retrieved (feet)		
Casing type/dia. (in.)		
CASE PERFORATING	15	7-7
Equipment used		1 (
Number of perforations/foot		
Size of perforations		
Interval perforated		
GROUTING	20	
Interval grouted (FBLS)		
# of batches prepared		
For each batch record:		
Quantity of water used (gal.)	15  \	
Quantity of cement used (lbs.)		
Cement type Quantity of bentonite used (lbs.)		
Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)	_ 1 / /	
Volume of grout prepared (gal.)	/	
Volume of grout used (gal.)  30 spley	30 - 129 7	
Johnson great about (gain)		
COMMENTS:	* Sketch in all relevant decommissioning data, including:	
Knock out borrows. (nout tremake, soll for	interval overdrilled, interval grouted, casing left in hole,	
DUC & CU-Sky, Renove Riser, TOP OF	well stickup, etc.	
gut		

Drilling Contractor

3 Aluminum bollevels
Groot in place.
I Protective casing.

Department Representative

29.7 TD: 32.4 Grah: 29.7

WELL DECOMMISSIONING RECORD	•
Site Name: Seneca Army Depot	Well ID: MW41D
Site Location: SEAD JASH LANDFILL	Driller: Scott Breeds
Drilling Company: Geologic North Star	Inspector: Scott Dillman
	Date: 9/17/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Dod / I-
C - constant state of the constant of the cons	(foot) 4.) '>
OVERDRILLING	C Sticker TOP TO TD
Interval Drilled	-to tsoil
Drilling Method(s)	Casing S
Borehole Dia. (in.)	Removed
Temporary Casing Installed? (y/n)	to = 2-3 ft
Depth temporary casing installed	10
Casing type/dia. (in.)	- 6 casing casing
Method of installing	- 527 / Filler)
CASING PULLING	belivik with
Method employed Growt in place	20 - believe growt
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	30
Number of perforations/foot	
Size of perforations	
Interval perforated	-
CROUTRIC	40 -
GROUTING	40
Interval grouted (FBLS) # of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	50 Bottom
Cement type Type I Partland	
Quantity of bentonite used (lbs.)	- Well
Quantity of calcium chloride used (lbs.)	1/100
Volume of grout prepared (gal.)	Latina Language
Volume of grout used (gal.) 20 gal.	60 -
COMMENTS: Removed concrete and guard pipe.	* Sketch in all relevant decommissioning data, including:
Loaded caring with growt. Dug alt around	interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
well. Cut off casing. Topped off grant.	war arrowap, etc.
Buckfilled hole 0-2 ft with soils	

bedogic North Star

Drilling Contractor

WELL DECOMMISSIONING R	ECORD		
Site Name & S. A. S. S. A. A. A. A.	<u> </u>		A (2 A
Site Name: Seneca Army De.	POT	Well ID:	MW421
Site Location: ASW Lan	dfill	Driller: _<	Scott Breeds
Drilling Company: Geologic Nov	th star	Inspector:	Scott Dillman
<i>y</i>		Date: 9	116 110
DECOMMISSIONING I		,	WELL SCHEMATIC*
(Fill in all that apply	<sup>'</sup> )	Depth	221 11-2
OVED DDU A DAG		(feet)	2,2 47,3
OVERDRILLING Interval Drilled			Stick UP TOP TO TO
1			1 /5011
Drilling Method(s) Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			
Depth temporary casing installed		10	- Casing
Casing type/dia. (in.)		-10	Removed
Method of installing			<del>                                    </del>
8			Casing Casing
CASING PULLING			- Lasing
Method employed	Groot in place	20	left in filled
Casing retrieved (feet)	4.2 ft		hole both
Casing type/dia. (in.)	Z"PVC		grov!
CASE PERFORATING			
Equipment used		30	
Number of perforations/foot			
Size of perforations			
Interval perforated			
GROUTING		40	
Interval grouted (FBLS)	+8 2-45		
# of batches prepared	36095 Butch		Bottom
For each batch record:	10		
Quantity of water used (gal.)  Quantity of cement used (lbs.)	18	50	_   / well
Cement type	2 5ag5		<b>→</b>   Y/I
Quantity of bentonite used (lbs.)	Type I Portland		— // · -
Quantity of calcium chloride used (lbs.)	16 founds		Drilled
Volume of grout prepared (gal.)		£ -	- Drilled
Volume of grout used (gal.)	20 gal	60	- $ $ $ $
	<u> </u>		
COMMENTS: Trick to soil goord	pipe. Guard pipe	* Sketch in all rele	evant decommissioning data, including:
broke above pad. They to	ILL PUC WOLL	interval overdrille	ed, interval grouted, casing left in hole,
	broke off. Excava	well stickup, etc.	
around well to 2-3 ft, Gobut	ed well in place	<b>a</b>	

Brilling Contractor

WELL DECOMMISSIONING RECORD	Activity
Site Name: Seneca Army Depot	W. H. T.
site Location: SEAN	Well ID: MW43
Orilling Company: G-Cologic North Star	Driller: Scott Breeds
Jerringian	Inspector: Scott Dillman
DECOM AGGIOVENIO	Date: 9/16/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	1 Denth
VERDRILLING	(feet) 2.8 17.6
nterval Drilled	O Stick up Top To
rilling Method(s)	- Fishil
orehole Dia. (in.)	1 1 3011
emporary Casing Installed? (y/n)	
epth temporary casing installed	7
asing type/dia. (in.)	5 PULLED
ethod of installing	
	PUC A Grow
ASING PULLING	WELL VALUE
ethod employed	
sing retrieved (feet)	10 ] 0+
sing type/dia. (in.)	Bottom
- 140	= of well
ASE PERFORATING	
uipment used	1 15
mber of perforations/foot	
e of perforations	
erval perforated	
OUTING	
propi granted (PDI G)	20 -
f batches prepared	
each batch record:	
ontity of water and I ( )	
intity of cement used (the )	
Lant time	25 - //
ntity of hentonite used (the)	
ntity of calcium chloride used (lbs.)	Not
ame of grout prepared (gal.)	
Ime of grout used (gol)	DRILLE
or grout used (gai.)	30
MENTS: A	
school out end cap, Loaded casing with a t	* Sketch in all relevant decommissioning data, including:
100 60 6110	incival overaffied, interval grouted casing left in hole
led casing. Grated remaining borehole.	well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING RE	ECORD	·	mw-4	5.
Site Name: Ash Landholl		Well ID:	mw-45	
Site Location: SEAD - 6		Driller:		
Drilling Company: Colorub		Inspector:	malliste	
Diffing Company.		Date:	100000	
DECOMMISSIONING D.	АТА	Bate.	WELL SCHEMA	TIC* 2010
(Fill in all that apply)		Depth	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	100
(I iii iii uii uuu upp.y)		(feet)		X/ RACK
OVERDRILLING		, ,		3084
Interval Drilled				
Drilling Method(s)				<u> </u>
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)				
Depth temporary casing installed			_	
Casing type/dia. (in.)				
Method of installing				
CASING PULLING		2		
Method employed	R3.		_	IXI I
Casing retrieved (feet)	8.461			
Casing type/dia. (in.)	PUC 2"			
CASE DEDECD ATING		9		5/
CASE PERFORATING Equipment used		5		X 5.4
1		-	_	X I G. L
Number of perforations/foot Size of perforations				\ Quoy
Interval perforated				
Interval periorated		4		
GROUTING				
Interval grouted (FBLS)	5.45+			M
# of batches prepared	1			
For each batch record:		2		
Quantity of water used (gal.)	18 schous			
Quantity of cement used (lbs.)	2 boxs		_	$V \mid \cdot \cdot \cdot \mid$
Cement type	Type I pull			
Quantity of bentonite used (lbs.)	10/65			1
Quantity of calcium chloride used (lbs.)				-
Volume of grout prepared (gal.)				
Volume of grout used (gal.)	3 gullons			
COMMENTS.		7		
COMMENTS:  Knockel art end cap , I	remove snort		relevant decommissionin rilled, interval grouted, ca	
	ove backfull	well stickup, e		
hade with remains	wat come soul	<b>-1</b>		
THE COURT OF THE PERSON OF THE				

Drilling Contractor

Department Representative

Cosing pulled

8.4/5.4

WELL DECOMMISSIONING RECORD	
	``
Site Name: SENECH ARMY NEPOT	Well ID: MW47
Site Location: SEAN - Arh Candfill	Driller: David Lions
Drilling Company: Gedogic North star	
Diming company. Beauty 1001 12 3 127	Date: 1/26/2011
DECOMMISSIONING DATA	1,11
	WELL SCHEMATIC*
(Fill in all that apply)	Depth Shicky 1 78 Th
OVERDRILLING	De a significant
Interval Drilled	
Drilling Method(s)	8.5
Borehole Dia. (in.)	8.5
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 -2 14.
Casing type/dia. (in.)	- Juc Grow
Method of installing	
The state of the s	= casing 6
CASING PULLING	
Medical condensation	14 0
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	Tou
Size of perforations	
Interval perforated	Dr.7 led
GROUTING	
Interval grouted (FBLS) # of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type Type   Part	
Quantity of bentonite used (lbs.)	449
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
(Sm)	
COMMENTS: Apoth to water = 3.91 At.	Sketch in all relevant decommissioning data including
Knocked wit end show Localed cosin wi	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole,
grante Pulled received Full receivery. To	well stickup, etc.
off acount to such as	11
)	
Geologic North Star	
Drilling Contractor	Department Representative

WELL DECOMMISSIONING R	ECORD			
Site Name: As and SEADE		Well ID:	MW-49 D	
Site Location: SEAD 6		Driller:		
Drilling Company: (Select N	5	Inspector:	incoffee	
Drining Company.		Date:		
		Date.	WELL COLENATION	
DECOMMISSIONING I		Donth	WELL SCHEMATIC*	
(Fill in all that apply	)	Depth (feet)	N 1 33	7-70
<u>OVERDRILLING</u>		(leet)		250
Interval Drilled			· — X	
Drilling Method(s)				3
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)			$\neg$ $M$	
Depth temporary casing installed		16		
Casing type/dia. (in.)				
Method of installing				1/
interior of mounting				
CASING PULLING				
Method employed		26		
Casing retrieved (feet)		-		
Casing type/dia. (in.)				
CASE PERFORATING				
Equipment used		30		rel-
Number of perforations/foot				
Size of perforations				35 5
Interval perforated				3
		4.		
GROUTING		40		
Interval grouted (FBLS)	35			
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	Logs			
Cement type	LYDE FRONTIAL			
Quantity of bentonite used (lbs.)	10 163			
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)	0.01			
Volume of grout used (gal.)	89 allons		_	
COMMENTS:		* Skatah in all	relevant decommissioning data, including:	
Knoder out end cap fol	ted cosy with		filled, interval grouted, casing left in hole,	
tremuse grout pulled pre		well stickup, e		
remain pre in place	,			
				Marian Coll of College Street

Drilling Contractor

Department Representative

Pulled 3 bollands & protective cosys Gnowt in Place 35

WELL DECOMMISSIONING RECORI	)			
Site Name: ASh Landhill	- W	/ell ID:	MW-50D	
Site Location: SGAD6	D	riller:	Landue	
Drilling Company: Godgde Northson	In	spector:		
Drining company.		ate:		
DECOMMISSIONING DATA (Fill in all that apply)	D		WELL SCHEMATIC*	59 France,
OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing		10		
CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)		20		Gualt 1
CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated		30		574
GROUTING Interval grouted (FBLS) # of batches prepared	7.8	40		
For each batch record:  Quantity of water used (gal.)  Quantity of cement used (lbs.)  Cement type  Quantity of bentonite used (lbs.)	B Cgs Tpoalu	50		
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)	sollars	68		<u>52.8</u>
COMMENTS: Pulled Riser, Abellace, Tremme 20 gallons, pulled top of pic 1.  4ff cut of 2 Seel risers.	e grout in		elevant decommissioning data, including led, interval grouted, casing left in hole,	

**Drilling Contractor** 

Department Representative

Pulled 3 bollands & protective casty. Great in place 57.8

WELL DECOMMISSIONING RECORD	
	3-
Site Name: SENECH ARMY NEPOT	Well ID: MW511
Site Location: SEAD - Ash Land fill	Driller: David Lions
Drilling Company: Geologic North star	Inspector: Sent Nillman
J	Date: 1/25/2011 1/26/2011
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 2.5 Leck of
(I'm m an mar appry)	(feet) STICKY A TO The
OVERDRILLING	Removed TD
Interval Drilled	17C 166
Drilling Method(s)	= 35.
Borehole Dia. (in.)	backfill
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	10 July 1 Growt
Casing type/dia. (in.)	4 7 9 Grov
Method of installing	- stee
CASING PULLING	20 = Stading
	20 - 1
Method employed  Casing retrieved (feet)	
Casing teneved (teet) Casing type/dia. (in.)	<del>-</del> 11 10
Casing type dia. (iii.)	
CASE PERFORATING	2001
Equipment used	30 - PUC
Number of perforations/foot	
Size of perforations	- Slace 3514
Interval perforated	- fluce 35/4
GROUTING	
Interval grouted (FBLS) 0 -35.5 F/F	
# of batches prepared	- 1 NOT
For each batch record:	1 Di. Mai
Quantity of water used (gal.)	1 00.11201
Quantity of cement used (lbs.) Zbaus	
Cement type Type   Part and	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMPARTO DAME	
COMMENTS: Peoply to water = NA St. fm	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole,
Knocked out end plug. Loaded casing with	well stickup, etc.
Casing ont off. Grant Ed in Alace, covered	<i>₹</i>
hale with	Sail
Geologic North Star	. 7011
Drilling Contractor	Department Representative

WELL DECOMMISSIONING RECORD	8			
WELL DECOMMODIONING RECORD			1	
Site Name: SENECH ARMY NEPOT	Well II	: MW5:	20	
Site Location: SEAD - Ash Landfill	Driller:	David Lib	NS	
Drilling Company: Gedogic North sto			Nillman	1
J	Date:	1/25/20	Name and Address of the Owner, where the Person of the Owner, where the Person of the Owner, where the Owner, which is the Owne	6/2011
DECOMMISSIONING DATA	Date.	7		10011
	Doub	WELL SCH		
(Fill in all that apply)	Depth (feet)	-25	ticky	TOP TO
OVERDRILLING			Removed	TD
Interval Drilled	_		. X0	112
Drilling Method(s)	_			58.
Borehole Dia. (in.)	- X		e detili	111
Temporary Casing Installed? (y/n)			111	11
Depth temporary casing installed	<u> </u>		1 //(	1
Casing type/dia. (in.)			steel	Grovi
Method of installing		- 6	15 m	M
CLONIC WILLING			-9	11)
CASING PULLING	20	o - 'r	lace	11.
Method employed Grautinp	ace _		1 -4	
Casing retrieved (feet)	Te	4	-1	11
Casing type/dia. (in.)		- 44	esing!	1
CASE PERFORATING	_ 30		n place	
Equipment used		,	. 11	
Number of perforations/foot		-	· [	
Size of perforations				1
Interval perforated				
GROUTING	40	) - 7		/
Interval grouted (FBLS) 0 - 58	704	,	10	
# of batches prepared			JC,	
For each batch record:		10	- place	1
Quantity of water used (gal.)	150		'	
Quantity of cement used (lbs.)	50		(1 1	1
Cement type	orthurd			
Quantity of bentonite used (lbs.)	vue s		11 1	
Quantity of calcium chloride used (lbs.)			11 1	1
Volume of grout prepared (gal.)			1	FO 1
Volume of grout used (gal.)	60			58.7
COMPARING A I	AL CO			
Knocked put end alva: Localed casing		all relevant decommi- erdrilled, interval grou	College and the second	100
	111 well sticked		ned, casing left in hot	-
greate Continued to add growt att	Sail .			
	Edulation (			
Geologic North Star				
Drilling Contractor	Department Re	presentative		

WELL DECOMMISSIONING RI	ECORD				
Site Name: Ash Landfull		Well ID:	MW.53		]
Site Location: SEAD -6		Driller:			
Drilling Company: Geoles VC		Inspector:	McAllister		1
Drining Company.		Date:	710-1111 01 -		1
	A.T. A		WELL SCHEMAT	IC*	1
DECOMMISSIONING D		Depth	WELL SCHEMAI	IC .	
(Fill in all that apply)	)	(feet)		1/200	l, .
OVERDRILLING		(rect)		20\$	geys
Interval Drilled					1
Drilling Method(s)					
Borehole Dia. (in.)				XI I	
Temporary Casing Installed? (y/n)				14 /	
Depth temporary casing installed		2			
Casing type/dia. (in.)					
Method of installing				IXI /	1
				Y 4 1	
CASING PULLING		4			
Method employed	8.4				
Casing retrieved (feet)	RM			IXI \	1
Casing type/dia. (in.)	2 PPUC			14 >	80
	•	,			
CASE PERFORATING		6			
Equipment used				XI I	
Number of perforations/foot					
Size of perforations					
Interval perforated				IXI I	
an ayımı ya		1 8			
GROUTING	A ACL				
Interval grouted (FBLS)	8.44			M	
# of batches prepared					
For each batch record: Quantity of water used (gal.)	10-0/1018			1/1/	
Quantity of water used (gal.)  Quantity of cement used (lbs.)	To and	10		XI/	
Cement type	1 STRIL DOG			1/10.	
Quantity of bentonite used (lbs.)	10 (65			10.4	100
Quantity of calcium chloride used (lbs.)	10 (0)			•	1
Volume of grout prepared (gal.)					
Volume of grout used (gal.)	Gallos				
<u> </u>	<u> </u>		15000000000000		
COMMENTS:		* Sketch in all re	elevant decommissioning of	lata, including:	
Knocked out evel Cap. I	remune quent	interval overdril	led, interval grouted, casin	-	
Dull puc cosy & Duc bo	CKAN WM	well stickup, etc			
Groot remains cover S	20.				]

Drilling Contractor

Department Representative

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MW·53 TD·10-4

MW.54D

### Table 2-4 Well Decommissioning Record Well Abandonment Plan Seneca Army Depot Activity

WELL DECOMMISSIONING RECORD	MW. 54D
Site Name: Ash Landvll	Well ID:
Site Location: SEMD 6	Driller:
	Inspector:
Dritting Company.	
Decommissioning Data (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforated  GROUTING Interval grouted (FBLS)	Date:  WELL SCHEMATIC*  Depth (feet)  32.44  35.4
Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  KINGO (XXI) WHON CF WELL FIRMING GYCKENEL WALL WHO VEMAY GUITE	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

3 bollows

Department Representative

Grout in place protectives cosy

MW.54D TD: 35 Grade 32.4

WELL DECOMMISSIONING RECORD		
and the leadful	Well ID: MW·S5D	1
Site Name: 154 Laww V Site Location: SEAD 6	Driller:	1
	.418	1
Drilling Company: Geologic		1
V	Date:	1
DECOMMISSIONING DATA	WELL SCHEMATIC*	
(Fill in all that apply)	Depth	10 L.
	(feet)	1
OVERDRILLING	——————————————————————————————————————	-
Interval Drilled	<u> </u>	
Drilling Method(s)	- 1/: 1	
Borehole Dia. (in.)	- V   /	
Temporary Casing Installed? (y/n)	$lo \rightarrow ll$	
Depth temporary casing installed		
Casing type/dia. (in.)	-	
Method of installing	<u> </u>	
CASING PULLING	20 🗆 📉	
Method employed		
Casing retrieved (feet)		
Casing type/dia. (in.)		
Cashig typo dia. (iii.)		
CASE PERFORATING	30	55.8
Equipment used		00.0
Number of perforations/foot		
Size of perforations		
Interval perforated		
	40	
GROUTING		
Interval grouted (FBLS) 55.8		
# of batches prepared		
For each batch record:		
Quantity of water used (gal.)	50	
Quantity of cement used (lbs.)		
Cement type		
Quantity of bentonite used (lbs.)	$  \qquad   \qquad   $	
Quantity of calcium chloride used (lbs.)		
Volume of grout prepared (gal.)	- + 50	
Volume of grout used (gal.)		1
COMMENTS:	* Sketch in all relevant decommissioning data, including:	
COMMUNITY 13.	interval overdrilled, interval grouted, casing left in hole,	
	well stickup, etc.	

Drilling Contractor
3 bollands

Growt in place = 55

Department Representative

MW.55D

TD: 58:1 Grade: 55.8

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY NEPOT	Well ID: MW57 D
Site Location: SEAN - ASH LAWDFILL	Driller: David Lions
Drilling Company: Gedogic North Star	
Dining company. Bedieve 1001 10 110	The state of the s
	Date: 1/26/2011
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth Stickup
OVERDRILLING	(feet) O Removed Top To
Interval Drilled	
Drilling Method(s)	35./
Borehole Dia. (in.)	- 11
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	10 - 10
Casing type/dia. (in.)	6700
Method of installing	= caring (
	in place
CASING PULLING	
Method employed Growt in pla	e 20 _
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	_ bar
Equipment used	30 = cusing
Number of perforations/foot	
Size of perforations	= 1 1 39.2
Interval perforated	
GROUTING	40
Interval grouted (FBLS) 0 - 3 3.2 F	4
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	Not
Quantity of cement used (lbs.)	1 - 1 / W
Cement type Type   Part	11.14
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (10s.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Pepth to water = 2.74 ft Knocked out end slug: Loaded casing w great. Cut off stickup. Great in slo lorge great lad. Couldn't remove. Cut	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
Geologic North Star at grade in place	Department Representative

WELL DECOMMISSIONING RECORD	<b></b>
	•
Site Name: Seneca Army Depot	Well ID: MW-59
Site Location: SEADS- ASH LANDFILL	Driller: Scott Breeds
Drilling Company: G-Cologic North Star	Inspector: Scott Dillman
	Date: 91/6/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	
(1 iii iii dii dibu appi))	Depth (feet)
OVERDRILLING	O SHOKUP TOP TO TO
Interval Drilled	4 Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 PULLED I +
Casing type/dia. (in.)	- PUC - Grout
Method of installing	- Just 1 ett
CASING PULLING	Botton
	10 - 1 1 Well
Method employed  Casing retrieved (feet)  Great, Poll, Great  9.7 CF	
Casing type/dia. (in.)	- 1/1
County typodata (iii)	
CASE PERFORATING	
Equipment used	15    /
Number of perforations/foot	
Size of perforations	
Interval perforated	
	20 = 1/
GROUTING	20    /
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)  Quantity of cement used (lbs.)	25
Quantity of bentonite used (lbs.)	- //
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	/ DRILLED
Volume of grout used (gal.)	30 -  /
1 1500	
COMMENTS: Depth to water = 4.27 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Granted remaining borehole.	well stickup, etc.
Added soil on top.	7

Geologic North Star Drilling Contractor

### WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: David Cion Driller: Site Location: SEA D Inspector: Scott Dillman Drilling Company: Date: 10 DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth 10.D -0.3H (feet) stick up Removed TOP TO TO OVERDRILLING Interval Drilled Drilling Method(s) BOX Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL Surtall CASING PULLING 10 Method employed Casing retrieved (feet) Bothne Casing type/dia. (in.) well CASE PERFORATING 15 Equipment used Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) 25 Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) COMMENTS: Depth to water ft from TOC \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole. well stickup, etc.

Geologic North Star

**Drilling Contractor** 

WELL DECOMMISSIONING RECORD	
St. N. Sound of Acres Acres Acres	Well ID: MW PT-11
Site Name: Seneca Army Depot Site Location: SEAD - ASTA LAND FILL	Driller: David Lion
	Inspector: Scott Dillman
Drilling Company: 6-eologic North Star	1 1
	Date: 9/20/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 41" 19,5
	(feet) Stick up Top TO TO
OVERDRILLING	100 Messed
Interval Drilled	- Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	5
Depth temporary casing installed	5 POLLED
Casing type/dia. (in.)	- DIC Grow
Method of installing	WELL Shole
CASING PULLING	□ Riser
	10 - 021/
Casing retrieved (feet)  Casing type/dia. (in.)	
Casing type/dia. (in.)	
CASE PERFORATING	15
Equipment used	15 - 4
Number of perforations/foot	
Size of perforations	- Jew portion
	- 500 1 04 1
Interval perforated	- well
GROUTING	20 - 100
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of water used (glass)  Quantity of cement used (lbs.)  2 6 a q 5	25 - 1
Cement type  Type   furthered	
Quantity of bentonite used (lbs.)	NOT
Quantity of bentomic used (lbs.)	DRILLED
Volume of grout prepared (gal.)	DRILLED
	30 - 1/1
Volume of grout used (gal.) 15 gal	
COMMENTS: Depth to water = 7,84 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Growted remaining borehole.	well stickup, etc.
Added soil on top. Left 5 of screen in hole.	1
	Not threaded to screen. Push connection

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW - PT-15
Site Location: SEAD ASH LAND FLIL	Driller: David Lion
Drilling Company: Geologic North Star	Inspector: Scott Dillman
Diming company. C Clark 12 12 12 12 12 12 12 12 12 12 12 12 12	Date: 9/20/10
DECOMMISSIONING DATA	WELL SCHEMATIC* Depth 3 L Ft 19.6
(Fill in all that apply)	Depth 3.6 Ft (feet)
OVERDRILLING	O stick up Top TO TI
Interval Drilled	- Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 PULLED Growt
Casing type/dia. (in.)	PVC Growt
Method of installing	PVC 1 107 50
<u> </u>	WELL
CASING PULLING	Riser
Method employed Grout, Poll, Growt	10 -
Casing retrieved (feet)	
Casing type/dia. (in.)	
	st Growtel
CASE PERFORATING	15 Left > Screen
Equipment used	15 Jest 7 = 305001
Number of perforations/foot	Julean Botton
Size of perforations	Push enter of
Interval perforated	LIMIN
	20 = wet well well
GROUTING	the earlier /
Interval grouted (FBLS)	
# of batches prepared	/ /
For each batch record:	
Quantity of water used (gal.)  Quantity of cement used (lbs.)  2 6 a 5	25 -
Cement type  Ouantity of bentonite used (lbs.)	NOT
Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	DRILLE
	30 - 1/1
Volume of grout used (gal.)	
COMMENTS: Depth to water = 9.45 ft from TOC	* Skatch in all salavant decompositions and the Land
Knocked out end cap. Loaded casing with grout.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Priled Casing. Growted remaining borehole.	well stickup, etc.
Added soil on top. No Road.	·

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD		
Site Name: Ash Landhull	Well ID: DT-21A	
Site Location: SEAD 6	Driller:	
	Inspector: Mullo Sur	
Drilling Company: Crestof be	Date:	
DECOMMISSIONING DATA	WELL SCHEMATIC*	
(Fill in all that apply)	Depth (feet)	
OVERDRILLING	(leet)	•
Interval Drilled		
Drilling Method(s)		
Borehole Dia. (in.)		
Temporary Casing Installed? (y/n)		
Depth temporary casing installed	$-5$ $\rightarrow$ $\times$	
Casing type/dia. (in.)		
Method of installing		
CASING PULLING	(0 - K)	
Method employed		
Casing retrieved (feet)		
Casing type/dia. (in.)	- $M$	
CASE PERFORATING		
Equipment used	15	
Number of perforations/foot		
Size of perforations		
Interval perforated		
I to the second		
GROUTING		_
Interval grouted (FBLS)		204
# of batches prepared		•
For each batch record:		
Quantity of water used (gal.)		
Quantity of cement used (lbs.)		
Cement type  Overtity of hontonite used (lbs.)		
Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)		
Volume of grout prepared (gal.)		
Volume of grout used (gal.)  Volume of grout used (gal.)		
	J	
COMMENTS:	* Sketch in all relevant decommissioning data, including	ς:
Knocked out evel cap tremmed in	interval overdrilled, interval grouted, casing left in hole,	
accit, Dulled entire ove & Riser	well stickup, etc.	
ropped off grout so'd come		

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Department Representative

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WELL DECOMMISSIONING RE	ECORD			•		
Six Names South And Annual Ann		Well ID:	MW	P7-2	3	al racional constitues and a second constitues of the
Site Name: Seneca Army Def	J 60 1	Driller:	7.(00		-	id Lions
Site Location: SEAD A3H LA	01 -	The second secon	2 -	Dillman		· 9/ C/O/C
Drilling Company: 6-Pologic North	STAP		1 - 1		1	
		Date: 9	+	0		and the second s
DECOMMISSIONING D.		-	WELL S	CHEMATIC		- 10
(Fill in all that apply)		Depth		2.84		10.315
OMEDDAN I DIC		(feet)		stick up Ramoved		TOP TO TO
OVERDRILLING	1			Memored	$\vdash \neg \vdash$	- Soil
Interval Drilled				-	$\vdash$ -1	2011
Drilling Method(s)						•
Borehole Dia. (in.) Temporary Casing Installed? (y/n)						
Depth temporary casing installed		5		NIFA		
Casing type/dia. (in.)				PULLED	- 1	Grout
Method of installing				PUC.		C150
Network of histaring				PUC ->		
CASING PULLING						Botton
Method employed	Grout Pull, Grout	10				of.
Casing retrieved (feet)	10.5 4	COLUMN TO THE PROPERTY OF THE				well
Casing type/dia. (in.)	2" PVC		-		/	
Casing typo one. (iii.)					r J	
CASE PERFORATING						
Equipment used		15			I'	
Number of perforations/foot			-			
Size of perforations					$V \mid$	
Interval perforated						
	brienterrometiner - marchaerineren neuerine	7 .				
GROUTING		20		,	1 1	
Interval grouted (FBLS)	N-707 CH					
# of batches prepared				i i		
For each batch record:	<del></del>					
Quantity of water used (gal.)	18					
Quantity of cement used (lbs.)	2 bags	25		المقابلة الماسان		
Cement type	Type Y Portland				$V \mid$	
Quantity of bentonite used (lbs.)	18 pounds					NOT
Quantity of calcium chloride used (lbs.)						DRILLED
Volume of grout prepared (gal.)		30				
Volume of grout used (gal.)	17galo	30				
-	J					
	BANA Ft from TOC	* Sketch in all r	elevant decor	nmissioning data,	includi	ng:
Knocked out end cap. Loaded co				grouted, casing le	ft in hol	le,
Priled casing. Growted rema	ining borehole.	well stickup, etc				
Added soil on top.						

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RE	CORD	•				
Site Name: Seneca Army Des	ot	Well ID:	MW	PT-25	>	
	ANDFILL	Driller:	Internal Control of the Control of t		Do	vid Lion
Drilling Company: G-Eologic North	***************************************		Scatt	Dillmar		<u>prii relevente en en en en en en en en en en en en en</u>
Drining company. S Colored	2100		120/1			
DECOMMISSIONING D	A T A		-		<u></u>	
DECOMMISSIONING DA (Fill in all that apply)	3	Depth	WELL 3	CHEMATIC*	•	17 1
(רווו ווו מוו נוומג מאףוץ)		(feet)		2.8	1 1	12.1
OVERDRILLING	The state of the s	(1001)		stick up Ramoved		TOP TO TO
Interval Drilled				IMMORER	H	- Soil
Drilling Method(s)				-	1	361.
Borehole Dia. (in.)						•
Temporary Casing Installed? (y/n)						
Depth temporary casing installed		5		NULED		
Casing type/dia. (in.)		- Printer of Publishments de Constitute Cons		PULLED		Grout
Method of installing				1016- 1	اء ا	Grace
				WELL	1-1	
CASING PULLING						
Method employed	Grout Pull, Growt	10				Botton
Casing retrieved (feet)	120104			,		of f
Casing type/dia. (in.)	Z"PVC					
Chaire Special (iii)				*		Well
CASE PERFORATING						
Equipment used		15			1	
Number of perforations/foot						! [
Size of perforations					//	
Interval perforated					/	
, and particular to the partic		7 2			/	
GROUTING		20			/	
Interval grouted (FBLS)	1-9.3H				1	
# of batches prepared					/	
For each batch record:	become an an incommendation and					
Quantity of water used (gal.)	18				/	
Quantity of cement used (lbs.)	2-bags	25				
Cement type	Type I Portland				1	
Quantity of bentonite used (lbs.)	10 pounds				/	NOT
Quantity of calcium chloride used (lbs.)	Ald fine and a second					DRILLEL
Volume of grout prepared (gal.)					/	UNLACAS
Volume of grout used (gal.)	8 921	30				
Designation of the Control of the Co		4m2004 Province College of the province of the		•	removed	
COMMENTS: Depth to water = 6	9.63 Ft from TOC	* Sketch in all re	levant decor	mmissioning data,	includi	ino
Knocked out end cap. Loaded ca	ising with grout.	interval overdrille	ed, interval	grouted, casing left	t in hol	e,
Pulled casing. Growted rema	ining borehole.	well stickup, etc.				
Added soil on top.						

WELL DECOMMISSIONING RECORD	•
and the same Accept	Well ID: MW 4-1
Site Name: Seneca Army Aepot	Driller: Scott Breeds
Site Location: SEAD4	Inspector: Scott Dillman
Drilling Company: Geologic North Star	2 0 1
	Date: 9/17/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 2.2', 12.9
	(feet) Stick up Top To TD
OVERDRILLING	Removed
Interval Drilled	- + F 3011
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	5 JOHLED !
Depth temporary casing installed	
Casing type/dia. (in.)	- PUC Grow
Method of installing	- WELL ET
CASING PULLING	
Method employed Grout, Poil, Grout	10
Casing retrieved (feet)	Botlan
Casing type/dia. (in.)	7.6
Casing typoraia. (iii.)	_   well
CASE PERFORATING	
Equipment used	<u> 15</u> ] ]
Number of perforations/foot	
Size of perforations	
Interval perforated	
	20 -
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	25
Quantity of cement used (lbs.)	
Cement type  Cuantity of hentonite used (lbs.)	NOT
Quality of contonic and (1991)	DRILLED
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)	DRILLED
Volume of grout used (gal.)	30 - 1
Volume of groundsod (gain)	description of the second of t
COMMENTS: Depth to water = 7.58 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Growted remaining borehole.	well stickup, etc.
Added soil in top.	L AND AND AND AND AND AND AND AND AND AND

WELL DECOMMISSIONING RI	ECORD			
Site Name: 5EAD - 4		Well ID:	MW4-2	
	I C . J t.	Driller:		
Site Location: Munifors Work o	or facility	Inspector:	McAllisk	
Drilling Company:			INCOLLI DO	
		Date:		
DECOMMISSIONING D		- ·	WELL SCHEMATIC*	TORCH
(Fill in all that apply	)	Depth	t	100
		(feet)		, , , , , , , , , , , , , , , , , , ,
<u>OVERDRILLING</u>				
Interval Drilled				
Drilling Method(s)				1. 1
Borehole Dia. (in.)		1		
Temporary Casing Installed? (y/n)		1		
Depth temporary casing installed				1 / 1
Casing type/dia. (in.)				1 / 1
Method of installing				/
CASING PULLING		2		1/1
Method employed	Poll			
Casing retrieved (feet)	SH			
Casing type/dia. (in.)	2" DVC			1 \ 1
Casing type, and (iii)				
CASE PERFORATING		3		1 /3/
Equipment used		)		1/0
Number of perforations/foot	3/A / On			
Size of perforations	The contract of the contract o			\
Interval perforated				
		4		
<u>GROUTING</u>				
Interval grouted (FBLS)	344			
# of batches prepared				
For each batch record:	14			$\mathcal{X}$
Quantity of water used (gal.)	18 galous	5		_
Quantity of cement used (lbs.)	18865			50
Cement type	ponte (#1			
Quantity of bentonite used (lbs.)	10 165			
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)	1000/100		-	
Volume of grout used (gal.)	10 galles	J	200000000000	
COMMENTS:  Derherop (OSU) Grout,  Remove plotogra core	pulcasing.		all relevant decommissioning data, is drilled, interval grouted, casing left etc.	

Drilling Contractor

Department Representative

pull Cash.

WELL DECOMMISSIONING R	ECORD					
Site Name: Seneca Army De	ant .	Well ID:	MW4	- 3		
Site Location: SEAD-4		Driller:			Dav	id Lion
Drilling Company: Geologic North	Star	Inspector: _	Scott	The state of the s		
Jiming Company. C College 10077		Date: 9	4 2	0	malting at many	
DECOMMISSIONING I	DATA		-	CHEMATIC	*	
(Fill in all that apply		Depth	W LLL 3	CHEWIATIC		11.4
(1.111 III all that apply	<b>'</b>	(feet)		1-15		100
OVERDRILLING		0		stick up Rumoved		TOP TO TO
Interval Drilled				- Control of		Soil
Drilling Method(s)				To the second	1	
Borehole Dia. (in.)				1		
Temporary Casing Installed? (y/n)				_		
Depth temporary casing installed		5		DULLED		5
Casing type/dia. (in.)				016	1	Grout
Method of installing				PULLED PUL WELL	E	-
				ME		I
CASING PULLING				a de la companya de l		
Method employed	Grout, Pull, Grait			ou.	-	Bottons
Casing retrieved (feet)	11.4 04		-			Dollows
Casing type/dia. (in.)	2" PVC					
	,					Well
CASE PERFORATING		15				
Equipment used		12			1/	
Number of perforations/foot					V	
Size of perforations					1/	
Interval perforated						
GROUTING		20			1 /	
	1-9.264		-		V	
Interval grouted (FBLS) # of batches prepared	1-7:6-1-					
For each batch record:	L					
Quantity of water used (gal.)	18		-		1 /	
Quantity of water used (gar.)  Quantity of cement used (lbs.)	2-bag\$	25				
Cement type	Type I Portland		***************************************			
Quantity of bentonite used (lbs.)	10 pounds				$V_{-}$	NOT
Quantity of calcium chloride used (lbs.)	113 POGREAS					DRILLEL
Volume of grout prepared (gal.)			-		V,	BUTTER
Volume of grout used (gal.)	9 gal	30				
<u>La constanta de la constanta </u>	3	***************************************			L	ā
COMMENTS: Depth to water =	8,46 Atfrom TOC	* Sketch in all re	levant decor	nmissioning data	, inclu	ling:
Knocked out end cap. Loaded		interval overdrill	ed, interval			
	aining borehole.	well stickup, etc.				
Added soil on top.						

WELL DECOMMISSIONING RECORD	-
1 Accet	Well ID: MW4-5
Site Name: Seneca Army Depot	Driller: Scott Breeds
Site Location: SEAD	Inspector: Scott Dillman
Drilling Company: G-eologic North Star	Date: 9/17/10
	WELL SCHEMATIC*
DECOMMISSIONING DATA	2 0 (1
(Fill in all that apply)	(feet)
	(feet) Stick up Top TO TD
OVERDRILLING	4 Soil
Interval Drilled	
Drilling Method(s)  Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 PULLED A
Casing type/dia. (in.)	PUC P Grout
Method of installing	PULLED & Grout
8.	·—
CASING PULLING	1 10 - 11
Method employed Grout, Poll, Grout	
Casing retrieved (feet)  Salf FF  Z'' PVC	
Casing type/dia. (in.)	
THE TOP TOP A MILE.	
CASE PERFORATING	15
Equipment used	
Number of perforations/foot	
Size of perforations Interval perforated	
interval periorated	20
GROUTING	120
Interval grouted (FBLS) 1-5.964	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	25
Quantity of cement used (lbs.) 2 5 a q 5	
Cement type Type I forthead	Not
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	DRIVE
Volume of grout used (gal.)	30 -
Volume of grout used (gal.)	
COMMENTS: Depth to water = 7.85 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Piled casing. brouted remaining borehole.	well stickup, etc.
Added soil on top.	

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING REC	CORD		•	
San Anni Anni	-	Well ID:	MW4-7	Myst of the second
Site Name: Seneca Army Depo	,		cott Breeds	N. 7
Site Location: SEAD - 4			Scott Dillman	
Drilling Company: G-Edogic North 5	tar		117/10	
7				
DECOMMISSIONING DAT	TA.		WELL SCHEMATIC*	8,6
(Fill in all that apply)		Depth	2,21	(2) 40
		(feet)	stick up Rumoved	TOP TO TO
OVERDRILLING		0	Removed	a Soil
Interval Drilled			<b></b>	7 3011
Drilling Method(s)				1
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		5	PULLED	
Depth temporary casing installed			PULL	F- Grout
Casing type/dia. (in.)			- PUC	
Method of installing			- WELL	Betlan
CACINIC DUIL I INIC				6F
CASING PULLING Method employed	Grout, Pull, Growt	10	WENT HOLDER TO THE PARTY OF THE	well
Casing retrieved (feet)	8 6"			· ·
Casing retrieved (feet) Casing type/dia. (in.)	2" PVC			
Casing type/dia. (iii.)				
CASE PERFORATING				
Equipment used		15		
Number of perforations/foot		*		
Size of perforations				
Interval perforated				
		20		
GROUTING		20		
Interval grouted (FBLS)	1-6.4			
# of batches prepared		5		
For each batch record:				
Quantity of water used (gal.)	18	2-		
Quantity of cement used (lbs.)	2 5ag 5	25		
Cement type	Type Y Portland			115
Quantity of bentonite used (lbs.)	10 pounds			NOT
Quantity of calcium chloride used (lbs.)				DRILLED
Volume of grout prepared (gal.)		30		~
Volume of grout used (gal.)	6 g od			
COMMENTS: Depth to water = 6. Knocked out end cap. Loaded cas Pulled casing. Growted remai	34 ft from TOC sing with grout. ning borehole.		relevant decommissioning data, i lled, interval grouted, casing left c.	-
Added soil on topa				

WELL DECOMMISSIONING RE	ECORD			•
Site Name: Seneca Army Dep	no <del>†</del>	Well ID:	MW4-9	
Site Location: SEAD 4		Driller:		David Lion
Drilling Company: Geologic North	Star		Scott Dillm	
Drining company. C capatre 7007 / 50	<u> </u>	Date: 9	, ,	
DECOMMISSIONING DA	АТА		WELL SCHEMAT	TC*
(Fill in all that apply)	11A	Depth		10.1
(1 iii iii aii tiiat appiy)		(feet)	Briter	~
OVERDRILLING		0	stick i	TOP TO TO
Interval Drilled				4 Soil
Drilling Method(s)				
Borehole Dia. (in.)				The state of the s
Temporary Casing Installed? (y/n)			1	
Depth temporary casing installed		5	DULLER	
Casing type/dia. (in.)			1 016 -	Grout
Method of installing			PULLED PUC PUC WELL	
CASING PULLING				1 /
Method employed	Grout Pull Groit	10		
Casing retrieved (feet)	6.2 ft			
Casing type/dia. (in.)	Z"PVC			
Casing typerdia. (iii.)				
CASE PERFORATING				
Equipment used		15		
Number of perforations/foot				
Size of perforations				
Interval perforated				
•	Note that the state of the stat	7.0		/ ]
GROUTING		20		
Interval grouted (FBLS)	0-6.2			
# of batches prepared				1
For each batch record:				
Quantity of water used (gal.)	18	~ ~		
Quantity of cement used (lbs.)	2 6ag \$	25		I
Cement type	Type Y Portland			
Quantity of bentonite used (lbs.)	18 pounds			NOT
Quantity of calcium chloride used (lbs.)	<u>'</u>			DRILLED
Volume of grout prepared (gal.)		30		
Volume of grout used (gal.)	6 gal	30	<b>State of the Control</b>	
COMMENTS: Depth to water =	CAR TOC			
	ft from TOC		elevant decommissioning	
	sing with grout.	well stickup, etc.	ed, interval grouted, casin	ig ieit in noie,
Added soil on top.	ining borehole.			

WELL DECOMMISSIONING RE	ECORD	•	
Site Name: Seneca Army Dep	not l	Well ID:	mw4-11
Site Location: SEAD - 4	701		David Lion.
Drilling Company: Geologic North	Star		Scott Dillman
Drining Company. G-GERATE 1007 / FE	5 00		121/10
	A 77 A		WELL SCHEMATIC*
DECOMMISSIONING D.	1	Depth	WELL SCHEMATIC
(Fill in all that apply)		(feet)	531 1113
OVERDRILLING		(1001)	Rumered Top TOTI
Interval Drilled			4- 501
Drilling Method(s)			
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			
Depth temporary casing installed		5	DOLLED !
Casing type/dia. (in.)			PULLED Growt
Method of installing			- WELL / ET
CASING PULLING		10	
Method employed	Grout, Pull, Grait	10	
Casing retrieved (feet)	11.5		<u> </u>
Casing type/dia. (in.)	Z"PVC		/ I
CASE PERFORATING			<u> </u>
Equipment used		15	
Number of perforations/foot			
Size of perforations			<b>─</b>
Interval perforated			<del>-</del>    (
l portoratou		<b>.</b>	<del>-</del>     /
GROUTING		20	
Interval grouted (FBLS)	1-8,5	en A Time con Province and a control of the budget of the page of	
# of batches prepared			<b>-</b>
For each batch record:			
Quantity of water used (gal.)	18	~ ~	
Quantity of cement used (lbs.)	2-6a95	25	
Cement type	TypeY Portland		
Quantity of bentonite used (lbs.)	10 pounds		Not
Quantity of calcium chloride used (lbs.)			DRILLE
Volume of grout prepared (gal.)		20	
Volume of grout used (gal.)	18 gal	_30_	
COMMENTS: A a a d	796 (10 ===1		
COMMENTS: Depth to water =	7.90 ft from TOC		levant decommissioning data, including:
	sing with grout.	well stickup, etc.	ed, interval grouted, casing left in hole,
	ining borehole.		
Added soil in top.			

WELL DECOMMISSIONING RE	CORD				
Since Acres Acres Acres Acres		Well ID: /	NW4-12		
Site Name: Seneca Army Dep	Q I		cott Breeds		
Site Location: SEAD 4	0:	THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.			
Drilling Company: G-Cologic North	star	Inspector: Scott Dillman			
		Date: 9	/17/10		
DECOMMISSIONING DA	ATA		WELL SCHEMATIC*		
(Fill in all that apply)		Depth	2.4 1	13.62	
		(feet)	stick up Removed	TOP TO TO	
OVERDRILLING			Nimoved		
Interval Drilled				4 Soil	
Drilling Method(s)				1	
Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)		5		West Control	
Depth temporary casing installed			PULLER		
Casing type/dia. (in.)			- PUC	Grout	
Method of installing			POLLED PAC PAC POLLED	4	
				Parameter State Company	
CASING PULLING		10			
Method employed	Grout, Pull, Grait	70		ا ماله ۱	
Casing retrieved (feet)				Botton	
Casing type/dia. (in.)	Z"PVC	,		well	
				Wen	
<u>CASE PERFORATING</u>		15			
Equipment used					
Number of perforations/foot					
Size of perforations					
Interval perforated					
GROUTING		20			
		***************************************	- CONTRACTOR		
Interval grouted (FBLS)					
# of batches prepared					
For each batch record:	18		-		
Quantity of water used (gal.) Quantity of cement used (lbs.)	The state of the s	25			
	2-5ag5				
Cement type	Type Y Portland			NOT	
Quantity of bentonite used (lbs.)	10 pouras				
Quantity of calcium chloride used (lbs.)				DRILLED	
Volume of grout prepared (gal.) Volume of grout used (gal.)		30			
volume of grout used (gail.)			60.000.000.000		
COMMENTS: Depth to water = "	9.62 At from TOC	* Chatch in all and	lavant danamuri-ri-rius 3-1-	inaludina	
Knocked out end cap. Loaded co	con with accent	1	levant decommissioning data, ed, interval grouted, casing le	-	
Pulled Casing. browted rema	in the hands to	well stickup, etc.		•	
	ining corengle.	y"			
Added soil on topo		L			

Geologic North Star Drilling Contractor

Site Name: Seneca Army Nepot  Site Location: SEAD II  Site Location: SEAD II  Driller: De Meaze  Driller: De Meaze  Driller: De Meaze  Driller: De Meaze  Driller: De Meaze  Inspector: Scott Dillman  Date: 9/22/10  WELL SCHEMATIC*  Depth (feet)  O Ramoved  Top To The Text of Text of The Text of	WELL DECOMMISSIONING RECORD	
Site Location: SEAD  Driller: De Menze  Driller: De Menze  Inspector: Scott Dillman  Date: 9/22/10  DECOMMISSIONING DATA (Fill in all that apply)  Depth (feet)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.)  Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot	Site Name: Seneca ACMY Nepot	Well ID: MW4-13
Drilling Company: G-eologic North Star  Date: 9/22/10  DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		
Date: 9/22/10  Determination (Fill in all that apply)  Determination (Fill in all that apply)  Depth (feet)  Depth (feet)  State of Top To To To To To To To To To To To To To		
DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		
(Fill in all that apply)  Depth (feet)  OVERDRILLING Interval Drilled Drilling Method(s) Borchole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot	DECOMMISSIONING DATA	
OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		Denth
Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		(feet)
Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		O Stamoved Top To Th
Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		Soil
Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		
Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		
Casing type/dia. (in.)  Method of installing  CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot		5 - (1)
Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		
CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		- PUC Grow
CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot		- WELL ST
Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot	CASING PULLING	
Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot	Method employed	
CASE PERFORATING Equipment used Number of perforations/foot	Casing retrieved (feet)	
Equipment used Number of perforations/foot	Casing type/dia. (in.)	
Equipment used Number of perforations/foot	CASE REPEOR ATENIO	
Number of perforations/foot		15 -
Interval perforated		$I \rightarrow 11$
GROUTING 20 —	GROUTING	20 -    /
Interval grouted (FBLS)	Interval grouted (FBLS)	
# of batches prepared	# of batches prepared	
For each batch record:		
Quantity of water used (gal.)		
Quantity of cement used (lbs.) 25		25
Cement type  Type Y Particul	145-17-07 110-1001	
Quantity of bentonite used (lbs.)		Not
Quantity of calcium chloride used (lbs.)  Volume of grout prepared (gal.)		DRILLED
Volume of grout wood (col.)	Volume of grout used (sel.)	30
Volume of grout used (gail.)	y ordering of ground about (gail.)	
COMMENTS: Depth to water = 6.84 ft from TOC *Sketch in all relevant decommissioning data including	COMMENTS: Death to water = 1 24 Ct & Too	1
Knocked out end cap. Loaded casing with grout.  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,		
Pulled casing. Grated remaining borehale. well stickup, etc.		
Added soil in top.	Added soil in top.	

Geologic North Star

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW5-Z
Site Location: SEAD 5	Driller: Steve Larance
Drilling Company: Geologic North Star	Inspector: Scott Dillman
7	Date: 9/24/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	D 2
	(feet)
OVERDRILLING	O Stick up Top TO TO
Interval Drilled	4 Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 PULLED Growt
Casing type/dia. (in.) Method of installing	PVC > Growt
ividuod of histaining	WELL &
CASING PULLING	
Method employed Front, Poll, Gro	at 10 BOTTAN
Casing retrieved (feet)	9.4
Casing type/dia. (in.)	- IT / WeV
CASE PERFORATING	
Equipment used	15
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	20
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2-bags	25 - 1/
Cement type Type Y Partles	
Quantity of bentonite used (lbs.)	Not
Quantity of calcium chloride used (lbs.)	DRILLED
Volume of grout prepared (gal.)	
Volume of grout used (gal.) 9 acl.	30
COMMENTS: A a a // 1	
COMMENTS: Depth to water = 6.88 ft from	
Knocked out end cap. Loaded casing with gro	interval overdrilled, interval grouted casing left in hole
Pulled casing. Growted remaining borehol Added soil on top.	e well stickup, etc.
THE SUIT ON TOP .	
Geologic North Star	

WELL DECOMMISSIONING RECORD	· ·
Site Name: SENECA ARMY DEPOT	Well ID: M W 1/-1
Site Location: 5EAN - 11	Driller: David Lions
Drilling Company: Gedogic North star	Inspector: Scott Nillman
Drining Company. Geagate World Star	
	11-11
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 2.8 sticky
OVERDRILLING	De unient
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	- 11 11
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 -
Casing type/dia. (in.)	- Growt
Method of installing	
	= 2 / lalk
CASING PULLING	
Method employed	(a) 1 2 2
Casing retrieved (feet)	AL P
Casing type/dia. (in.)	= PNC
CASE PERFORATING	cusing 1
Equipment used	15 = (a) 1 13.8 ft
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	NOT
Interval grouted (FBLS) 0 - 13.8 C	-
# of batches prepared	I DATILLE
For each batch record:	
Quantity of water used (gal.)	-   -     /
Quantity of cement used (lbs.)	
Cement type Type   Part	ud _
Quantity of selcium chloride used (lbs.)	
Quality of calcium emoride used (los.)	
Volume of grout prepared (gal.) Volume of grout used (gal.)	
volume of grout used (gai.)	
COMMENTS: Apth to water = 4.6. ft.  Knocked out end plug. Loaded casing with  great. Pulled carried. Topical off hole of	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
Geologic North Star Drilling Contractor	Department Representative

WELL DECOMMISSIONING RECORD	
Site Name:	Well ID: MW 1(-2
Site Location: SEAD (	Driller:
Drilling Company:	Inspector:
Drining company,	Date:
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth (feet) SU=38
OVERDRILLING	(feet)
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.) Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
lytethod of histarning	
CASING PULLING	
Method employed Pull	
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	_
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	——————————————————————————————————————
Cement type  Powerland #   Powerland   Pow	<u> </u>
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)	
Volume of grout prepared (gal.)	
votatile of grout used (gail.)	
COMMENTS:  Knock at ent dy tremnte grat  Pull Rises & pric top offgrut	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

1 Probable cosing 1 Cosing pulled 3Bollards

127 B-5 W Z3

WELL DECOMMISSIONING	RECORD		
Site Name: Seneca Army A	epot	Well ID:	MW11-3
Site Location: SEAD	1	Driller:	- David Lion
Drilling Company: Geologic North	n Star	Inspector:	Scott Dillman
	<del>annon a la farica de la colonia de la colon</del>	Date: 9	2 / 2
DECOMMISSIONING	DATA		WELL SCHEMATIC*
(Fill in all that app		Depth	7/1
(2	-77	(feet)	Brokey -> 1.4
OVERDRILLING		10	Stick of Top TO TD
Interval Drilled			4- 50:1
Drilling Method(s)			
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			The second secon
Depth temporary casing installed	PERFECTIVE PROTECTION CONTROL	5	PULLED
Casing type/dia. (in.)			- PUC - Growt
Method of installing		ONE STATE OF	- WELL STORY
CASING PULLING			Botton
Method employed	( + 0.1/) .1	10	- OF.
Casing retrieved (feet)	Grout, Pull, Grait	1	/ Well
Casing type/dia. (in.)	2"PVC	ANTI-ORGANISMS	- ' / /
Casing type dia. (iii.)	2 146		
CASE PERFORATING		endance of the control of the contro	— / / /
Equipment used		15	<del>-</del>   1/1
Number of perforations/foot	-		
Size of perforations			<del>-</del>     / /
Interval perforated			<del>-</del>    /
•		7.0	
GROUTING		20	-    /
Interval grouted (FBLS)	1-7.48		
# of batches prepared			
For each batch record:	F-10-10-10-10-10-10-10-10-10-10-10-10-10-		
Quantity of water used (gal.)	18	3 —	
Quantity of cement used (lbs.)	2-6ag \$	25	
Cement type	Type I Portland		
Quantity of bentonite used (lbs.)	10 pounds		Not
Quantity of calcium chloride used (lbs.)			DRILLED
Volume of grout prepared (gal.)		30	
Volume of grout used (gal.)	7 gol	30	
COMMENTS: Depth to water =	NA FIFTHER TOC		
COMMENTS: Depth to water = NA ft from TOC Knocked out end cap. Loaded casing with grout.		* Sketch in all rel	evant decommissioning data, including:
Pulled casing. Growted remaining borehole.		well stickup, etc.	ed, interval grouted, casing left in hole,
Added soil on top.	- wining our engle.	•••	
- Familia - Fami			

Geologic North Star

**Drilling Contractor** 

WELL DECOMMISSIONING RECORD	
Site Name	Well ID: MWI -4
Site Name:	Driller:
Site Location:	Inspector:
Drilling Company:	Date:
DECOMMISSIONING DATA	Depth WELL SCHEMATIC*
(Fill in all that apply)	
	(feet)
OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.) Temporary Casing Installed? (y/n)	1 1 , — 1 / 1
Depth temporary casing installed	
Casing type/dia. (in.) Method of installing	
Nethod of histarning	1   - 1   1   1
CASING PULLING	
Method employed 13FF.	1   7 - 1/11
Casing retrieved (feet)	
Casing type/dia. (in.)	1   1 \ 1
CASE PERFORATING	$_{1}$   6 $\Rightarrow$  /  $\rightarrow$ \lambda \lambda \cdot \sigma \lambda \lambda \cdot \sigma \lambda \cd
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	]
# of batches prepared	/
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	↓
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	+ $+$ $+$ $+$ $+$ $+$ $+$ $+$
Volume of grout used (gal.)	
	34
COMMENTS:	* Sketch in all relevant decommissioning data, including:
Knock out end cop , themade snort, pull PI	well stickup, etc.
Top of gust Remove Ballads Knowlet	

Drilling Contractor

Department Representative

13·0 10·5

Cash pulled

WELL DECOMMISSIONING RECO	RD			,
		Well ID:	MW 11-5	
Site Name: Construction Debuts L		Driller:	, 1, co, 1,	
Site Location: SEAD-U				
Drilling Company: Geo gre Ns		Inspector:		
V		Date:		
DECOMMISSIONING DATA			WELL SCHEMA	
(Fill in all that apply)		Depth		(50)
		(feet)		/ 5025
OVERDRILLING			_	—// <del> </del> ——
Interval Drilled				1, 1
Drilling Method(s)				1 //· ) [
Borehole Dia. (in.)		1	-	
Temporary Casing Installed? (y/n)				
Depth temporary casing installed				
Casing type/dia. (in.)				
Method of installing		**		
CASING PULLING				1/ 1/
	ulled	-/		
Casing retrieved (feet)	1101			
Casing type/dia. (in.)	2ª pvc			1   3 11   1
Casing type/dia. (iii.)				1 1/110
CASE PERFORATING		(		
Equipment used		6		1/1\
Number of perforations/foot				$Y \mid V \mid V \mid V \mid V \mid V \mid V \mid V \mid V \mid V \mid $
Size of perforations				
Interval perforated				
		6		
GROUTING		9		$V \cup V$
Interval grouted (FBLS)				1 1 1 1
# of batches prepared				
For each batch record:		1.		
Quantity of water used (gal.)	3	1 (0		
1 \ ' '	30 /bs			1/ 1
1	entlen#-			
Quantity of bentonite used (lbs.)	10 165			
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)	10 //	12		
Volume of grout used (gal.)	logallons	14		
COLD TO THE OTHER		]		data facilitations
COMMENTS:	Duil cash, fuc	4	ill relevant decommissionin drilled, interval grouted, ca	• • •
Knock out ent cop, Thennie grat,	pul casty fuc rucele pul	well stickup,		
Top off grout, Penone bollards, Co	THE PER			

Drilling Contractor

Department Representative

Costy pulled

11 Ft total

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW//-6
Site Location: SEAD 11	Driller: David Lion
Drilling Company: G-eclogic North Star	Inspector: Scott Dillman
3	Date: 9/21/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 2.4 10.314
	(feet)
OVERDRILLING	O SHOK UP TOP TO TD
Interval Drilled	4 Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 PULLED
Casing type/dia. (in.)	PUC > Grout
Method of installing	WELL &
CACINIC DITLE INC	
CASING PULLING	DoiTan
Method employed Grout, Pull, Grout	10 / 04
Casing retrieved (feet)	- · / well
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	15 - 1
Number of perforations/foot	
Size of perforations	
Interval perforated	
The following th	
GROUTING	20 - //
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2 bag 5	25
Cement type Type Y fortland	
Quantity of bentonite used (lbs.)	Not
Quantity of calcium chloride used (lbs.)	DRILLED
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	30
	The state of the s
COMMENTS: Depth to water = 607 ft from TOC	
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Growted remaining borehole.	well stickup, etc.
Added soil on top.	

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING R	ECORD		•			
Site Name: Seneca Army De	pot	Well ID:	MW11-7			
Site Location: SEAD II		Driller:				
Drilling Company: G-eologic North	- Star	Inspector:	Scott Dillman			
			1 1			
DECOMMISSIONING	DATA		WEIL SCHEMATIC*			
(Fill in all that apply	1	Depth	2,24 7,6			
		(feet)				
OVERDRILLING			stick up Top To T.			
Interval Drilled			- Soil			
Drilling Method(s)						
Borehole Dia. (in.)						
Temporary Casing Installed? (y/n)		_				
Depth temporary casing installed		5	- PULLED TO +			
Casing type/dia. (in.)			DUC Torout			
Method of installing			PULLED B Grout			
CASING PULLING						
Method employed	Grout Pull, Growt	10	-    /			
Casing retrieved (feet)	Grout, Tull, Grout					
Casing terrieved (feet) Casing type/dia. (in.)	Z"PVC		- '   /			
Casing typordia. (iii.)	<u> </u>					
CASE PERFORATING						
Equipment used		15				
Number of perforations/foot						
Size of perforations			— I' /			
Interval perforated						
		20				
GROUTING		20				
Interval grouted (FBLS)	1-5.4					
# of batches prepared						
For each batch record:	photos and a second sec					
Quantity of water used (gal.)	18	7				
Quantity of cement used (lbs.)	25ag5	25				
Cement type	Type Y Portland					
Quantity of bentonite used (lbs.)	16 pounds		Not			
Quantity of calcium chloride used (lbs.)			DRILLE			
Volume of grout prepared (gal.)		30	_     /			
Volume of grout used (gal.)	5gel					
COMMENTS: Depth to water =	7 15 CHC TOO					
			ed interpal ground assign left in help			
	asing with grout.	well stickup, etc.	ed, interval grouted, casing left in hole,			
Added soil on top.	dining corevale.	• •				

Geologic North Star

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY DEPOT	Well ID: MW/Z-AZ
Site Location: 5 EAD 12	Driller: Scott Breads
	Inspector: 3 cott Dillman
Drilling Company: Geologic North Star	Date: 9/14/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth stick of The frame
OVERDRILLING	(feet) - 1 C+ 13 From
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 - 1 1 6/ost
Casing type/dia. (in.)	
Method of installing	pulled 1
	T PVC
CASING PULLING	/ // //
Method employed	Wer
Casing retrieved (feet) $13' f + 1$	
Casing type/dia. (in.)	
	Boilow
<u>CASE PERFORATING</u>	15 - 1/105
Equipment used	15 Jell
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	//NOT
Interval grouted (FBLS)	
# of batches prepared	- BRILLED
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type Type I Partland	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	1 - 1/1
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Nepth to wester 8,28 feet from To	* Shatch in all relevant decommissioning data including
	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Knocked off and cap. Treme grouted casing.	well stickup, etc.
basehole. To med off when hole with soil.	7
MOTE AND A TO WHEN ALL OFFICE AND A POLE MILLER JELL	

Drilling Contractor

Department Representative

Note: MW12-11 was thought to be at this locations. MW12-11 and MW12A-02 coordinates were within a few feet of each other, but only a single well was physically located during the Site Walk. Upon opening lid of casing, it was determined at the well was in fact MW12A-02.

WELL DECOMMISSIONING RE	CORD		
			A
Site Name: SENECA ARMY	DEPOT	Well ID:	MU12-14-3
Site Location: 3EAD 12		Driller:	Switt Breads
Drilling Company: (realogic North	Star	Inspector:	50th Dillman
		Date:	9/14/10
DECOMMISSIONING DA	TA		WELL SCHEMATIC*
(Fill in all that apply)		Depth	WELL SCHEMATIC*  1.9 Shelluf werthough
, , , , , ,		(feet)	16.9
<u>OVERDRILLING</u>		-0	
Interval Drilled			50:1
Drilling Method(s)			(
Borehole Dia. (in.)			- 1 11 1/
Temporary Casing Installed? (y/n)		5	
Depth temporary casing installed			
Casing type/dia. (in.)			- 1010 124
Method of installing			- Puled
CASING PULLING			100 -1
Method employed	Grant Pull Grant	10	casing
Casing retrieved (feet)	110,4ft.		
Casing type/dia. (in.)	2' PVC		
Cusing type, and (m.)			
CASE PERFORATING		1	
Equipment used		13	Bottone
Number of perforations/foot			1 3 6
Size of perforations			_ Well
Interval perforated			
		20	- $1/1$ $1$
GROUTING	1 1/1 6 0		// /
Interval grouted (FBLS)	1-14.954		$ V_{\perp}$ $\perp$
# of batches prepared			- Not
For each batch record:	a		Drilled
Quantity of water used (gal.)			
Quantity of cement used (lbs.)	Type I Pertland		
Cement type Quantity of bentonite used (lbs.)	19,10 - 10 - 110 00		- $1/1$ $1$
Quantity of calcium chloride used (lbs.)			-
Volume of grout prepared (gal.)			
Volume of grout used (gal.)			
	,		
COMMENTS: Death to writer to	9,54 TOC	* Sketch in al	l relevant decommissioning data, including:
Knocked out and cap. Tranic growted cosing.			Irilled, interval grouted, casing left in hole,
Pulled asing. The mie grouted remaining		well stickup,	etc.
hole. Topsel off hole wit	h 501.		
1. 1. Ston	~		
brologie North 114	·	Department Repr	ecentative
Drilling Contractor		Бераганені Кері	oonai

#### WELL DECOMMISSIONING RECORD MW12-B1 Well ID: Site Name: Driller: Site Location: Inspector: Drilling Company: Date: 9113110 **WELL SCHEMATIC\* DECOMMISSIONING DATA** Depth (Fill in all that apply) 9 tick-p1.2 (feet) **OVERDRILLING** Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing Pulled CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated well GROUTING TD Interval grouted (FBLS) # of batches prepared For each batch record: DOT Quantity of water used (gal.) SRILLES Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Stat

Drilling Contractor

WELL DECOMMISSIONING	G RECORD	·		,
Site Name: SENECA ARMY DE	POT	Well ID:	MW-12-B	3
Site Location: SEAN 12			1/ 0 1	
	th Star	Inspector:	cott Breeds	
3.5	11000		Scott Dillma	
DECOMMISSIONIN	IG DATA		7	
(Fill in all that a			WELL SCHEMATI	C*
(1 m m m mar a	ppiy)	Depth (feet)	1.9	1 1 70
<u>OVERDRILLING</u>		(lect)	Still-P Remove	1 16++.
Interval Drilled			ste more	1
Drilling Method(s)				S - 5011
Borehole Dia. (in.)				11 11
Temporary Casing Installed? (y/n)				
Depth temporary casing installed		1 5		
Casing type/dia. (in.)			Puled	Grout
Method of installing			100	& Backfill
CASING DULLING			welling.	2 Dacquill
<u>CASING PULLING</u> Method employed		10	welling.	
Casing retrieved (feet)	Grout Pail Grat	10	Carl	\
Casing type/dia. (in.)	2" PVC			
caonig typerata. (III.)	2 700			
CASE PERFORATING				
Equipment used		15		Bottem of Well
Number of perforations/foot				1 2, 000,
Size of perforations				
Interval perforated				
GROUTING				
Interval grouted (FBLS)	1 1 111			
# of batches prepared	<del>40</del> ,1-14			Not
For each batch record:	И			Drilled
Quantity of water used (gal.)	18			1/1
Quantity of cement used (lbs.)	2 5495			
Cement type	Type I for then			1'/
Quantity of bentonite used (lbs.)	10 Parade			
Quantity of calcium chloride used (lbs.)	1			
Volume of grout prepared (gal.)				
Volume of grout used (gal.)	1399		-	
COMMENTS: Death to water	13 10/2 = 7			
1/ / 0 / 1	12.05 From TOC.	* Sketch in all rele	vant decommissioning data	a, including:
0 :1 6	e groted casing.	interval overdrilled well stickup, etc.	d, interval grouted, casing l	eft in hole,
boring. Added Soil above area		wen stickup, efc.		1
boring. Added soil obove gran	~			

WELL DECOMMISSIONING I	RECORD		•		
Site Name: Senece Army Deport		Well ID:	MW12-B3		
Site Location: MW12-B3 Sea			sept Breeds		
Drilling Company: Geologic Nor			scott Millman		
3 1 1 1 2 1 2 1 2 1 2 1	74 25-1	Date: 9)	13/10		
DECOMMISSIONING	DATA				
(Fill in all that appl			WELL SCHEMATIC*		
(1 III III all that appl	3)	Depth (feet)	1.5 Stide 116		
OVERDRILLING		(leet)	1.5 sticked 16 Removed TD from		
Interval Drilled			- Toc		
Drilling Method(s)					
Borehole Dia. (in.)			— ) [·		
Temporary Casing Installed? (y/n)					
Depth temporary casing installed		5	0.1100		
Casing type/dia. (in.)			Pulled Grout		
Method of installing			W. Et budefill		
			(as it's)		
CASING PULLING					
Method employed	Grout Pull, Grout	10			
Casing retrieved (feet)	16 f+				
Casing type/dia. (in.)	Z' PVC				
CASE PERFORATING					
Equipment used		1 15	Bottom		
Number of perforations/foot			of well		
Size of perforations			<del>-</del>   1/1		
Interval perforated					
GROUTING			NoT A		
Interval grouted (FBLS)	1 1/161		brilled		
# of batches prepared	1-14ft.		1/		
For each batch record:			- 1/1		
Quantity of water used (gal.)	18		- /		
Quantity of cement used (lbs.)	7 6		<del>-</del>		
Cement type	Portland Type 1				
Quantity of bentonite used (lbs.)	10 posseds				
Quantity of calcium chloride used (lbs.)	10 1050-115		- //		
Volume of grout prepared (gal.)					
Volume of grout used (gal.)	14 gal				
	J .				
COMMENTS: Septh to water 12,2'	from TOC.	* Sketch in all rele	evant decommissioning data, including:		
Knocked out end cap. Tremie growted casing with		interval overdrilled	d, interval grouted, casing left in hole,		
grout. Pulled casing. Tremie g	routed remaining	well stickup, etc.			
Soring. Added soil above grow	Τ.				

Drilling Contractor

WELL DECOMMISSIONING RECORD	•		
Site Name: 5 eneca Army Depot	Well ID: M W/2-01		
	Driller: Scott Breeds		
Site Location: SEAD 12	Inspector: 5 to H Dillman		
Drilling Company: Geologic North Star	Date: 9/15//0		
DECOMMISSIONING DATA	WELL SCHEMATIC*		
(Fill in all that apply)	Depth (foot)		
OVERDANA DIG	(feet) Zing To To		
OVERDRILLING	501		
Interval Drilled			
Drilling Method(s) Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			
Depth temporary casing installed	5 polled front		
Casing type/dia. (in.)	- NC		
Method of installing	well.		
	we'r		
CASING PULLING	Bottom		
Method employed broat full, broat	10 Bollon		
Casing retrieved (feet)	- Well		
Casing type/dia. (in.)	<u> </u>		
	- $1/1$		
CASE PERFORATING			
Equipment used			
Number of perforations/foot			
Size of perforations			
Interval perforated			
CROLITING	Not		
GROUTING Interval grouted (FBLS)	DRIVES		
Interval grouted (FBLS) # of batches prepared			
For each batch record:			
Quantity of water used (gal.)			
Quantity of cement used (lbs.)			
Cement type Quantity of bentonite used (lbs.)  Type 1  10 och des			
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)			
Volume of grout used (gal.)			
	1		
COMMENTS: beoth to water = 9.02 ft from TOC			
Knocked out and cap. Leaded casing with grout.	interval overdrilled, interval grouted, casing left in hole, well stickup, etc.		
fulled casing browted venaining boring.	non stickup, etc.		
Added soil for top.			

Cologic North Star,
Drilling Contractor

WELL DECOMMISSIONING RECORD			
Som Ama Non-t	Well ID: MW/2-03		
Site Name: Seneca Army Depot	Driller: 5 cott Breeds		
Site Location: $SEAD 12$	Inspector: Scott Dillman		
Drilling Company: Geologic North Star	Date: 9/15/10		
	WELL SCHEMATIC*		
DECOMMISSIONING DATA	D d A constell		
(Fill in all that apply)	(fact)		
	O STICKUP TOP TO		
OVERDRILLING	cf 50:1		
Interval Drilled			
Drilling Method(s)  Borehole Dia. (in.)	alled Larent		
Temporary Casing Installed? (y/n)	Palled of Growt		
Depth temporary casing installed	5 PUL		
Casing type/dia. (in.)	well bottom		
Method of installing	- 0 F		
	- \ \ Well		
CASING PULLING			
Method employed Grant Poll Grant			
Casing retrieved (feet)			
Casing type/dia. (in.)			
<u>CASE PERFORATING</u>	- / NoT		
Equipment used	Dilled		
Number of perforations/foot	Drilled		
Size of perforations Interval perforated			
Interval perforated			
GROUTING			
Interval grouted (FBLS)			
# of batches prepared			
For each batch record:			
Quantity of water used (gal.)			
Quantity of cement used (lbs.)			
Cement type Type I Portland			
Quantity of bentonite used (lbs.)			
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)			
Volume of grout used (gal.) 3 ga			
COMMENTS: bepth to water 192 7.75 ft. Tac Knockelout end cap. Loaded casing with great Pulled casing, corrected remaining buring.	internal accordabled internal grouted assing left in hole		

beologic North Star.

WELL DECOMMISSIONING RECORD	
C A A Acat	Well ID: MW12-03-
Site Name: Seneca Home Depot	Driller: Steve Laramel
Site Location: SEAN 12	
Drilling Company: Goologic North Star	
J	Date: 9/15/10
DECOMMISSIONING DATA	WELL SCHEMATIC*  Depth  Tof to
(Fill in all that apply)	Stick
	(feet) 255 20.4
OVERDRILLING	
Interval Drilled	- + 50il
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	- 5 - Grost
Depth temporary casing installed	pulsed to
Casing type/dia. (in.)	
Method of installing	- 8 nier
CASING PULLING	
Method employed	viller t 10 4100 screen
Casing retrieved (feet)	3010
Casing type/dia. (in.)	- Grout
	F, 11 Ed
CASE PERFORATING	- Screen
Equipment used	13
Number of perforations/foot	
Size of perforations	
Interval perforated	Bottom
	20 - Well
GROUTING Interval grouted (FBLS)	
Interval grouted (1 223)	
# of batches prepared	
For each batch record: Quantity of water used (gal.)	-
Quantity of mater assume (8.11)	15 25 ] Drilled
Cement type Type	1 Portland
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	gal
COMMENTS: Depth to water 1975 from	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Knockedout hattan pluge Loaded casing	well stickup etc
V-331(8)   01100	ier and T
of scien. Screen broke, Grantal remaining	SORROLL

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RI	ECORD		
0	,	W II ID - M	11/20 - 14
Site Name: Seneia Homy Depot			W12-04
Site Location: SEAN 12		Driller: 5 60	H Breeds
Drilling Company: Geologic North	1 star		cott Sillman
J			15/10
DECOMMISSIONING D	DATA	W	ELL SCHEMATIC*
(Fill in all that apply		Depth	20' > 1/4.4'
,		(feet)	Stigenesed Top To
OVERDRILLING			
Interval Drilled			501
Drilling Method(s)			<del>          </del>
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)		5	Grat
Depth temporary casing installed			Pulled (bran)
Casing type/dia. (in.)			I PUC
Method of installing			well
CASING PULLING			
Method employed	Grout Pall, Growt	10	
Casing retrieved (feet)	14.4 ft'		
Casing type/dia. (in.)	Z'PUC		- Bothom
			- Do Hom
<u>CASE PERFORATING</u>		16	-     well
Equipment used			- // ""
Number of perforations/foot			<del>-</del>
Size of perforations			
Interval perforated			
<u>GROUTING</u>		20	
Interval grouted (FBLS)	1-11.9 Ff		
# of batches prepared			_ / Not
For each batch record:			DRILLED
Quantity of water used (gal.)	18		<u> </u>
Quantity of cement used (lbs.)	2 5495		$\rightarrow$ $1/1$
Cement type	Type I Partland		$\rightarrow$ $V/I$
Quantity of bentonite used (lbs.)	10 pounds		<b>─</b> 1/ 1
Quantity of calcium chloride used (lbs.)			- $1/$
Volume of grout prepared (gal.)	12 998		<del> </del>  /
Volume of grout used (gal.)	1699		
COMMENTS: Desth to water	1.6 ft for TOC	* Sketch in all rel	levant decommissioning data, including:
Knocked off End car Loaded	asing with groot.	interval overdrille	ed, interval grouted, casing left in hole,
1700000	fundining boring.	well stickup, etc.	
Add soil on top.		A STATE OF THE STA	

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING REC	ORD				
A A A	4	Well II	)· 14.4.1 i	17-05	- -
Site Name: Seneca Army Depot		Well ID: MW12-05 Driller: Scott Breeds			
Site Location: SEAD 12	.1		2011 1	+ Dillma	
Drilling Company: Geologic North S	Tar	Inspect	- 1 /		^
		Date:	9/15/1		
DECOMMISSIONING DAT	`A		WELL S	SCHEMATIC	*
(Fill in all that apply)		Depth		Removed	1 1 - (
p		(feet)		2.5	20.6
<u>OVERDRILLING</u>				Stickup	TOGTOTO
Interval Drilled				1	2011
Drilling Method(s)	φ <sup>+</sup>			- 1	1
Borehole Dia. (in.)				-	
Temporary Casing Installed? (y/n)		5	-	-	
Depth temporary casing installed				0.10	Grout
Casing type/dia. (in.)				1 pulled	1 1
Method of installing				PVC	
CASING PULLING				well	
Method employed	Grout Poll Grout	10	? <u> </u>	- Completion Control	
Casing retrieved (feet)	17:1 ++			and the second	
Casing type/dia. (in.)	2" AVC				
×	,			1	
<u>CASE PERFORATING</u>		15		4 (	
Equipment used		1>		<b>-</b>	Grant
Number of perforations/foot			***************************************	Screen	Filled
Size of perforations				broke off	Sureen
Interval perforated			-	brok	onto a salara
GROUTING		7.	2 -	7	Button
Interval grouted (FBLS)	1-18.11+			1	Well
# of batches prepared	1			1	1 Well
For each batch record:				1	1/1
Quantity of water used (gal.)	18 001		<del>Angli para da da l</del>	7	1/1
Quantity of rement used (lbs.)	2 bags			7	1/71
Cement type	Typel Partland				NOT
Quantity of bentonite used (lbs.)	10 pounds				willed
Quantity of calcium chloride used (lbs.)					
Volume of grout prepared (gal.)				].	1/1
Volume of grout used (gal.)	18 gal				
	J			_	
COMMENTS: July to water 11.	7 ft from TOC	* Sketch	in all relevant dec	commissioning dat	a, including:
Knocked off End capo Loaded Cas	ing with grout.	1		al grouted, casing	left in hole,
Pulled casing, Screen broken. Left =	375ft of screen.	well stick	kup, etc.		
Growted remaining buring. Adde	I soil on top.				

Creplagic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	13
Site Name: SENECH ARMY NEPOT	Well ID: MW/2-6
Site Location: 5EAN - 12	Driller: David Lions
Drilling Company: Gedogic North star	Inspector: Scatt Dilman
Brining company. Beauty 1001 1-1	Date: 1/25/2011
DECOMMISSIONING DATA	1111
(Fill in all that apply)	Depth 3 Chellen
(Fill ill all that apply)	Depth (feet) 3 stickup Top To
OVERDRILLING	Removed TD
Interval Drilled	] pt.6'
Drilling Method(s)	1 17.6
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	£ _ \ \
Depth temporary casing installed	- Pulled Grout
Casing type/dia. (in.)	
Method of installing	- 870-10-1
CASING PULLING	- Casing
	10 - 1
Method employed  Casing retrieved (feet)  Course, great full or rows	
Casing type/dia. (in.)	
	11.6
CASE PERFORATING	15
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	- NoT
GROUTING	
Interval grouted (FBLS)	- DRILLE
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type Type Part and	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	_ // /
Volume of grout used (gal.)	
COMMENTS: Apth to water = 4.50 ft. fm Too Knocked out end slug. Loaded casing with grant. Pulled calsing ant recover all. Toppod off grant. Picked up site.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Department Representative

#### Table 2-4 Well Decommissioning Record Well Abandonment Plan

Seneca Army Depot Activity

WELL DECOMMISSIONING RECORD	
Site Name: Seneca SERD 12	Well ID: MW12-09
Site Location:	Driller: 5 cott Breed 5
Drilling Company: Geologic North Star	Inspector: Scott Dillman
3 200/0 100 100 100 100 100 100 100 100 100	Date: 12/13/10
DECOMMISSIONING DATA	
(Fill in all that apply)	WELL SCHEMATIC* Depth
(1 iii iii aii alaa appiy)	Lein Delli V V o
OVERDRILLING	(leet) 16.6 +2.0
Interval Drilled	56,1
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 (25100)
Casing type/dia. (in.)	Autled ?
Method of installing	
	Growt
CASING PULLING	
Method employed Grat Poil Gra	t 10
Casing retrieved (feet)	
Casing type/dia. (in.)	- Botton of
CASE PERFORATING	Well
Equipment used	Depth
Number of perforations/foot	15 Below
Size of perforations	- Ground
Interval perforated	
This is partitioned	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	I NOT
For each batch record:	MILLEN
Quantity of water used (gal.)	The state of the s
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.) Volume of grout used (gal.)	
Volume of grout used (gal.) ~13	
COMMENTS: Jack to water 12.52 Toc	
	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Grand site and culled PUL ristrand screen	well stickup, etc.
100	ovegout.
THE PARTY OF THE PROPERTY OF THE PARTY SOLITOR	04 - 011 00 14

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONIN	G RECORD		,
Site Name: Severa F	romy Derot	Well ID:	MW-12-16
Site Location: MW12	6 3EAD 12		C - + 0 0
Drilling Company: Geologi	and the circ		1 1
2111118 COMPANY: 2 < 2 / 2 / 2 /	Cortu Start		
DECOMMISSIONI	DIO DATA	Date: 9,	112112
DECOMMISSIONI (Fill in all that		7	WELL SCHEMATIC*
(1-111 III all that	аррту)	Depth (feet)	Stickup - 16.6
OVERDRILLING		(leet)	2.2 7 TD from
Interval Drilled			penoved Tol
Drilling Method(s)			- + 5011
Borehole Dia. (in.)			3: 1 1 1 1 1
Temporary Casing Installed? (y/n)			- pilel Tremie
Depth temporary casing installed		5	PUL South
Casing type/dia. (in.)			Casing Statell
Method of installing			
CASING PULLING			
Method employed	4 2 3 7	10	- Carlotte Company
Casing retrieved (feet)	Grant Punil Grant	10	A CONTRACTOR OF THE CONTRACTOR
Casing type/dia. (in.)	7" 416		n and a second and
The state of the s	2 PVC		
CASE PERFORATING		~	Beston
Equipment used		14	of well
Number of perforations/foot			
Size of perforations			
Interval perforated			
GROUTING			-
Interval grouted (FBLS)	1-14		Not
# of batches prepared	1		brilled
For each batch record:			
Quantity of water used (gal.)	18		
Quantity of cement used (lbs.)	2 beg 5		
Cement type Quantity of bentonite used (lbs.)			
Quantity of calcium chloride used (lbs.)	10 pernels		- 4
Volume of grout prepared (gal.)			<del> </del>   (4
Volume of grout used (gal.)	14 gal.		<del> </del>  2
(Sun)	1 14 gal.		
COMMENTS: Death To Waster	- 12.03	* Skatch in all	lavent decomprissioning decirity
Pouch but bottom plugo hoad casing with grout. Priled casing. Tremie grouted published grout.		interval overdrille	levant decommissioning data, including: ed, interval grouted, casing left in hole,
		well stickup, etc.	,
Added soil above grout.	J		
Preplazio, At- M	().		

#### WELL DECOMMISSIONING RECORD SENERA ARMY DE POT Site Name: m Well ID: Site Location: 116012-1 SEAD Driller: Drilling Company: North Stu G-60/09 12 Inspector: 13/10 Date: DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth 2.91 (feet) Stickup **OVERDRILLING** Interval Drilled Drilling Method(s) Borehole Dia. (in.) Palel Temporary Casing Installed? (y/n) Depth temporary casing installed NC Casing type/dia. (in.) Method of installing CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated Botton of well GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) NOT Quantity of cement used (lbs.) DRILLED Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) COMMENTS: \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Department Representative

WELL DECOMMISSIONING	RECORD					
Site Name: Seneca Army Depot Site Location: MW12-18 SEAN 12		Well ID: MW12-18				
			-It Breeds			
Drilling Company: Geologic North	Star					
		Date: 9/				
DECOMMISSIONING	CDATA		13/10			
(Fill in all that ap			VELL SCHEMATIC*			
(i iii iii aii tilat ap	piy)	Depth (feet)	Sticked 17			
OVERDRILLING		(leet)	2,6' > from Toc			
Interval Drilled			TOTA			
Drilling Method(s)						
Borehole Dia. (in.)						
Temporary Casing Installed? (y/n)						
Depth temporary casing installed		5				
Casing type/dia. (in.)						
Method of installing			Removed			
			1 16 11 11			
CASING PULLING			PNC Grant			
Method employed	Grost, pall Grout	_ 10	backfull			
Casing retrieved (feet)	17'					
Casing type/dia. (in.)	PUC 2"					
CASE PERFORATING						
Equipment used		15				
Number of perforations/foot			well			
Size of perforations			T / TA			
Interval perforated						
GROUTING		20				
Interval grouted (FBLS)	1-17'					
# of batches prepared	1					
For each batch record:						
Quantity of water used (gal.)	18		NET			
Quantity of cement used (lbs.)	2 6ad 5		DRILLEN			
Cement type	Type I portland					
Quantity of bentonite used (lbs.)	10 pounds					
Quantity of calcium chloride used (lbs.)						
Volume of grout prepared (gal.) Volume of grout used (gal.)						
volume of grout used (gal.)	- I gal					
COMMENTS: Neath To water 1	403 from TOG		•			
	40 ) from TOC	* Sketch in all relevinterval overdrilled	ant decommissioning data, including: interval grouted, casing left in hole,			
Pulled casivia. Trendie acquited	, , ,	well stickup, etc.	grouted, casing left in noie,			
Added soil above growta	Janes Males	•				
TOWN A	<u> </u>					

WELL DECOMMISSIONING F	RECORD			
Site Name: Sene ca Army Jepot		Well ID: MW/2 - 19		
Site Location: $SEAD/Z$			with Breeds	
Drilling Company: Geologic North Star			Scott Dillman	
Diffing Company. 17 25 18 4 12 70 27	11-7 1144	Date: 9	114/10	
	DATA			
DECOMMISSIONING		WELL SCHEMATIC*		
(Fill in all that app	iy)	Depth (feet)	27' 11 1/57	
<u>OVERDRILLING</u>		(1661)	The To To To	
Interval Drilled			501	
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)			polled front	
Depth temporary casing installed		5	<b>—</b> ' _	
Casing type/dia. (in.)			esc P	
Method of installing	-2		WELL !	
ivietiod of instanting			— W	
CASING PULLING				
Method employed	Grout Pull brout	10		
Casing retrieved (feet)	13.3 ++			
Casing type/dia. (in.)	Z'PVC			
CASE PERFORATING		1		
Equipment used		1 )		
Number of perforations/foot				
Size of perforations				
Interval perforated				
GROUTING	A			
Interval grouted (FBLS)	1-10,4 6+		<u> </u>	
# of batches prepared			*	
For each batch record:	- 12			
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	2 begs			
Cement type	Typel		-	
Quantity of bentonite used (lbs.)	10 juvids			
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)			<del> </del>	
Volume of grout used (gal.)	110		<del> </del>	
volume of grout used (gai.)	11 god			
COMMENTS: Neath to water =	7,56 From TOL	* Sketch in all re	elevant decommissioning data, including:	
Knocked and fly off. Loaded casing full of			ed, interval grouted, casing left in hole,	
gout. fulled casing, trouted remaining		well stickup, etc.		
Alder to				

beologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	•			
Site Name: Seneca Army Depot	Well ID: 14 W 12-20			
Site Location: 5EAN 12	Driller: 5 60 H Mreeds			
Drilling Company: Geologic North Star	Inspector: Feeth Dillman			
Ziming company. D eyes ye	Date: 9 / 14 / 10			
DECOMMISSIONING DATA	WELL SCHEMATIC*			
(Fill in all that apply)				
(1 III III dia cida appro)	Depth (feet) 2.7 Pp to			
OVERDRILLING	2 permois TD			
Interval Drilled	5614			
Drilling Method(s)				
Borehole Dia. (in.)	Grant			
Temporary Casing Installed? (y/n)				
Depth temporary casing installed	5 pulled			
Casing type/dia. (in.)				
Method of installing	610			
CASING PULLING	well			
Method employed Grant Poll Grant	10 -			
Casing retrieved (feet)				
Casing type/dia. (in.)				
CASE PERFORATING	15 - Bottom			
Equipment used	of of			
Number of perforations/foot	- Weil			
Size of perforations				
Interval perforated				
GROUTING	<del>-</del>			
Interval grouted (FBLS) $i - /4, 2'$				
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)				
Quantity of cement used (lbs.) 2 5 as 5				
Cement type				
Quantity of bentonite used (lbs.)				
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)				
Volume of grout used (gal.)				
COMMENTS: Depth to water = 7.22 from TOC, Knocked end capaff. Leaded casing with grout. Fullel casing a corouted remaining boring - Added soil on top.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			

Oldogic North Star
Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Sencia Army Depot	Well ID: MU12-21
Site Location: $SEAD 12$	Driller: Scott Breeds
Drilling Company: Gaologic North Sta	
Diffing Company. G-5 10 1 1 7 7 7	Date: 9/14/10
DECOM A ACCIONANCE DATA	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)	Denth
(Fill III all that appry)	(feet) 2,8   14
<u>OVERDRILLING</u>	O sticked toute
Interval Drilled	7 501
Drilling Method(s)	
Borehole Dia. (in.)	Grant
Temporary Casing Installed? (y/n)	5 - Pulled by
Depth temporary casing installed	
Casing type/dia. (in.)	D/7C
Method of installing	well
CASING PULLING	
Method employed	Poll Grant 0
Casing retrieved (feet)	
	De llore
	- Well
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	- Not
Interval perforated	Dolled
GROUTING	
Interval grouted (FBLS)	(24)
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	45
Cement type Type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	gal
COMMENTS: Depth to water = 3ft from	* Sketch in all relevant decommissioning data, including:
Knocked off end cap. Loaded casin	interval overdrilled, interval grouted, casing left in hole,
	remaining well stickup, etc.
harolde Add all ad top.	

Geologic North Star

WELL DECOMMISSIONING RECOR	D .
Site Name: Seneca Army Depot	Well ID: M 12-22
Site Name: Seneca Army Sepot Site Location: SEADIZ	Driller: Scott Biseds
Dilling Company ( R. )	
Drilling Company: GRologic North Star	Date: 9/14/10
	WELL SCHEMATIC*
DECOMMISSIONING DATA	Davids
(Fill in all that apply)	71 6 1 1 6 8
OVERDRILLING	(feet) 2.8 Tours
Interval Drilled	501
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 J 6000
Casing type/dia. (in.)	pulled et Grav
Method of installing	
	well Lasing
CASING PULLING	
	t. P.11. Grant
	PNC
Casing type dia. (iii.)	Bettone
CASE PERFORATING	
Equipment used	15 dell
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	13 ft. \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
# of batches prepared	I NOT
For each batch record:	DRILLE DRILLE
Quantity of water used (gal.)	
·   -	5495
Cement type Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
	Baala
(6)	
Knocked off end cap. Filled casing wi filled casing. Filled remaining he	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY DEPOT	Well ID: MW/2-23
Site Location: $S = A \Delta / 2$	Driller: Scott Breeds
	Inspector: Sept Dillman
Drilling Company: G-eslogic North Star	Date: "1/4//0
DECOMMISSIONING DATA	Depth Removed 15.8
(Fill in all that apply)	
OVERDRILLING	(feet) 2.5 Toc To
OVERDRILLING	50:1
Interval Drilled Drilling Method(s)	
Borehole Dia. (in.)	<del> </del>
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	( crost
Casing type/dia. (in.)	
Method of installing	- puled
Interior of insuring	well -
CASING PULLING	10 = (05) (4)
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
	Bottom
CASE PERFORATING	15 - ToFwell
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	,067
Interval grouted (FBLS)	DRILLED
# of batches prepared For each batch record:	DETACES
Quantity of water used (gal.)	
Quantity of water used (gar.)  Quantity of cement used (lbs.)  Z bass	
Cement type  Tupe	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: beefly to water 8.8 ft form TOC.	* Sketch in all relevant decommissioning data, including:
Koocked off end cap. Tremied grout into casing.	interval overdrilled, interval grouted, casing left in hole,
Pulled Casing. Added were grout to borehole	well stickup, etc.
Added soil to top.	
Geologic North star	
Drilling Contractor  ✓	Department Representative

WELL DECOMMISSIONING RECORD	,
Site Name: Sercea Army Aspot	Well ID: MW/2-124
	Driller: Scott Breeds
Site Location: SEAD 12	Inspector: SEOTH Dillman
Drilling Company: 16-lologie North Star	
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth Remotel
	(feet) 2.6 kp To to
OVERDRILLING	5011
Interval Drilled	——————————————————————————————————————
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	5 - Not Growt
Depth temporary casing installed	pulled + Growt
Casing type/dia. (in.)	
Method of installing	- PVC
CASING PULLING	_ well
Method employed broat full broat	1 1 1
Casing retrieved (feet)	
Casing type/dia. (in.)	BoTTIME
Cashing type and (iii)	/ of
CASE PERFORATING	I Well
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
	Not
GROUTING	DRILLED DRILLED
Interval grouted (FBLS)	- Dettect
# of batches prepared	/ /
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2 5495	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.) Volume of grout used (gal.)	<u> </u>
Volume of grout used (gal.)	
COMMENTS: Death to water 10,27 from TOG	* Sketch in all relevant decommissioning data, including:
	interval overdrilled, interval grouted, casing left in hole,
Fulled cusing, brouted remaining bors.	well stickup, etc.
with scots little soil of top.	

Geologic North Star

Site Name: Seneca Army Depot  Site Location: SEAD 12  Drilling Company: Geologic North Star	Driller: 5.  Inspector:  Date: 1/V  Depth	UV12-25 cett Breeds 5cott Dillman 15/10 VELL SCHEMATIC*
Site Location: SEAA 12	Driller: 5.  Inspector:  Date: 1/V  Depth	Scott Dillman 15/10 VELL SCHEMATIC*
Site Location: SEAA 12	Inspector:  Date: 1/V  Depth	Scott Dillman 15/10 VELL SCHEMATIC*
Drilling Company: 6-2 logic North Star	Date: 'î // V Depth	VELL SCHEMATIC*
	V Depth	VELL SCHEMATIC*
	Depth	
DECOMMISSIONING DATA	•	5/ //
(Fill in all that apply)		541ckup, 13,7
	(feet)	Removed > Too TO
OVERDRILLING		- Soil
Interval Drilled		
Drilling Method(s)		<del>             </del>
Borehole Dia. (in.)		- Growt
Temporary Casing Installed? (y/n)	5	1 1 4
Depth temporary casing installed		- pulcola
Casing type/dia. (in.) Method of installing		
Method of histaring		DOC 1
CASING PULLING	10	well
Method employed Growt, Poll, Growt		
Casing retrieved (feet) 13.7 f +		- Bottone
Casing type/dia. (in.)		of well
		well well
CASE PERFORATING	15	$\rightarrow$ 1/1
Equipment used	15	$\rightarrow$ $V$
Number of perforations/foot		<u> </u>
Size of perforations		<del>-</del>    /
Interval perforated		-   / NOT .
CROUTING		Drilled
GROUTING Interval grouted (FBLS)		
Interval grouted (FBLS) # of batches prepared		
For each batch record:		
Quantity of water used (gal.)		
Quantity of cement used (lbs.)  2 5 = 35		/
Cement type		_
Quantity of bentonite used (lbs.)		- $1/1$
Quantity of calcium chloride used (lbs.)		$\rightarrow$
Volume of grout prepared (gal.)		-
Volume of grout used (gal.)		
COMMENTS: Jest to water = 964 from Toc. Knocked out and cap. Loaded casing with grout, fulled casing. Gruntel remaining bosehold	interval overdri	relevant decommissioning data, including: illed, interval grouted, casing left in hole, c.

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD	
4 A 4	Well ID: MU-12-26
Site Name: Senera Army Depot	
Site Location: SEAN 12	/ 0.31/
Drilling Company: Geologic North Star	Inspector: Scatt Dillman
- · · · · · · · · · · · · · · · · · · ·	Date: 9/15/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth (feet) 2.6 ft   1/3,55
(	St icitup
OVERDRILLING	1 removed
Interval Drilled	
Drilling Method(s)	_ \ \ \ \ \ \ \
Borehole Dia. (in.)	pulled 6 Grant
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	well
Method of installing	
G + GD IG DUIL I INC	
Method employed Grant Pull Brant	
Method employed  Casing retrieved (feet)  Casing retrieved (feet)	
Casing type/dia. (in.)	Betton
Casing type/dia. (iii.)	- J of well
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
·	
GROUTING	Not
Interval grouted (FBLS)	
# of batches prepared	- Orillal
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type  Overtity of bentonite used (lbs.)	
Quality of bentonite used (1887)	
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)	
Volume of grout used (gal.)  Volume of grout used (gal.)	
Volume of grout used (gail.)	
COMMENTS: Depth to water = 9.55 ft. from Too	* Sketch in all relevant decommissioning data, including:
Knocked off end cap. Loaded casing with gra	interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
Pulled casing broated remaining barehole:	wen snokup, etc.
spelded soit at top.	

beologic North star

Drilling Contractor

WELL DECOMMISSIONING RECORD	
Si y San Anna Mant	Well ID: MW12-27
Site Name: Seneca Arma Depot	Driller: 5 cott Breeds
Site Location: 5EAD 12	Inspector: Scott Dillman
Drilling Company: Geologic North Star	Date: 9/14/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 3.1' 1 12.8'
	(Teel) Top To
OVERDRILLING	
Interval Drilled	Soil
Drilling Method(s)	
Borehole Dia. (in.)	Grout
Temporary Casing Installed? (y/n)	5 pulled 1 form
Depth temporary casing installed	100
Casing type/dia. (in.)	- \ \Jel\
Method of installing	
CASING PULLING	
Method employed Grat Pullbrant	
Casing retrieved (feet)	Botton
Casing type/dia. (in.)	well
Casing typordia. (iii.)	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Depth to water 9.6 from TOC Knocked off end cap. Loaded casing with growt. Fulled casing. Growted remaining hole:	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

bedogic North Star Drilling Contractor

WELL DECOMMISSIONING R	ECORD	·			
6'4 N	0 1	W 11 ID	44 . 1.17	7.0	
Site Name: Seneca Army Depot		***	Well ID: MW12-29		
Site Location: SEAN 12	/ 1		cott Breed		
Drilling Company: Geologic North	Stur		Scatt Dill	man	
		Date: 9	14/10		
DECOMMISSIONING E			WELL SCHEM	ATIC*	
(Fill in all that apply	)	Depth	21.	hiderp 16.8	
		(feet)	5 7	to to	
OVERDRILLING		. 0	Rev	noved TOC to	
Interval Drilled				\$ 50.1	
Drilling Method(s)					
Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)		5	- Pulo	& Grout	
Depth temporary casing installed Casing type/dia. (in.)			- 1/3	- H H	
Method of installing	<del>  </del>		pre		
livieulou of instaining			- 0011		
CASING PULLING					
Method employed	Great Pull Great	10			
Casing retrieved (feet)	16.8 ft				
Casing type/dia. (in.)	2 PVC			The state of the s	
Q · Q · P · · · · · · · · · · · · · · ·	- 1 V Care				
CASE PERFORATING				Bottone	
Equipment used		15		100	
Number of perforations/foot				/ well	
Size of perforations			***************************************		
Interval perforated					
GROUTING					
Interval grouted (FBLS)	1-17 0 [	-	***************************************		
# of batches prepared	1-13.864				
For each batch record:				NOT.	
Quantity of water used (gal.)	18			Drilled Brilled	
Quantity of cement used (lbs.)	2 8495			61.11	
Cement type	Toyle				
Quantity of bentonite used (lbs.)	7/10				
Quantity of calcium chloride used (lbs.)					
Volume of grout prepared (gal.)					
Volume of grout used (gal.)	14				
COMMENTS: Depth to water 10	> Frm. TOC	* Sketch in all rele	evant decommissioni	ing data, including:	
Knokked ant end cap. Tremied casing fill-farent.		interval overdrille	d, interval grouted, c		
	inging borchele with	well stickup, etc.			
grout. Topped off hole with soi	4*				

WELL DECOMMISSIONING I	RECORD	·	•
Site Name: Seneca Army S	POT	Well ID:	1012-30
Site Location: 5EAD 12	0		cott Breeds
Drilling Company: Geologic Nort	In star		ast Dillman
3 7 7			4/10
DECOMMISSIONING	DATA		/ELL SCHEMATIC*
(Fill in all that app	1	Depth	ı
7,1	~ <i>,</i>	(feet)	stickys 16.8
OVERDRILLING		i D	reveyed TO
Interval Drilled			
Drilling Method(s)			
Borehole Dia. (in.)			-
Temporary Casing Installed? (y/n)		<u></u>	- Priled
Depth temporary casing installed		5	well - Grout
Casing type/dia. (in.)			- Lugira 1
Method of installing	L		
CASING PULLING			
Method employed	Grout All, Grout	10	<del> </del>
Casing retrieved (feet)	16.8 Feet		
Casing type/dia. (in.)	2" (1)		
		Ship.	
CASE PERFORATING		_	Bottom
Equipment used		15	Tot !
Number of perforations/foot			well
Size of perforations			
Interval perforated			
GROUTING		Minute in the second se	
Interval grouted (FBLS)	1-19		Not
# of batches prepared			- DRILLED
For each batch record: Quantity of water used (gal.)	18		$ V_{\perp}$
Quantity of water used (gal.)  Quantity of cement used (lbs.)	25095		<b>→</b>  /
Cement type	Type (		$\rightarrow$ $1/$
Quantity of bentonite used (lbs.)	19/10		
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)			
Volume of grout used (gal.)	14		
COMMENTS: Depth to water 9	,8 from TOL		vant decommissioning data, including:
Knock off end cap. Tremied as		interval overdrilled well stickup, etc.	I, interval grouted, casing left in hole,
Pulled casing. Transed remai	ning borehole with	wen stickup, etc.	
Growt. Added Soil to offer for	eT.		

Drilling Contractor

WELL DECOMMISSIONING RE	ECORD	·	,
Site Name: Senega Army Dep.	> "f	Well ID:	MW12-31
Site Location: SEAN 12			with Breeds
Drilling Company: Geologic North	1 star	Inspector:	560Tt Dillman
Drining Company. 6-2010 11 10 01 10	C) 1-4	Date: 9	114/10
DECOMP (ICCIONIDIO D	1.T.1		
DECOMMISSIONING D		1	WELL SCHEMATIC*
(Fill in all that apply)		Depth (feet)	stickers 13
OVERDRILLING		(1001)	removed Top to
Interval Drilled			- Soil
Drilling Method(s)			
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)	CARLES CONTROL OF CONT	Com.	pulled forout
Depth temporary casing installed	**************************************		J PNC / 1
Casing type/dia. (in.)			
Method of installing			well !
CASING PULLING			
Method employed	Grant, Rell, Grant	10	
Casing retrieved (feet)			
Casing terrieved (feet) Casing type/dia. (in.)	13 ft 2"PVC		
Casing type/dia. (iii.)	2 /00		
CASE PERFORATING		1	
Equipment used		15	
Number of perforations/foot			<del></del>
Size of perforations			
Interval perforated			
GROUTING			
Interval grouted (FBLS)	Ø-10ff		<del> </del>
# of batches prepared	W IVET		<del> </del>
For each batch record:			<del> </del>
Quantity of water used (gal.)	18		
Quantity of cement used (lbs.)	ZGags		
Cement type	Tuest		
Quantity of bentonite used (lbs.)	19/10		
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)			
Volume of grout used (gal.)	10 gallens		
	7		
COMMENTS: Depth to water = 8.5	from TOC		levant decommissioning data, including:
Knoked off end plug. Loaded carney with Grout.			ed, interval grouted, casing left in hole,
	maining boring	well stickup, etc.	
Added soil on top.	) )		

Geologic North Star

WELL DECOMMISSIONING RECO	RD					•	
Site Name: Seneca Army bepot		Well	ID: ^	1601	2-32		
Site Location: SEAA 12		Drille	er: 5 a	w H	Breeds		
	La-	Inspe		Scutt	Dillin	an	
		Date:	7	4/10			
DECOMMISSIONING DATA			, <u>, , , , , , , , , , , , , , , , , , </u>	VELL S	CHEMATION	_*	
(Fill in all that apply)		Deptl			~ /		12 1
		(feet)			2.1		1201
OVERDRILLING		*			stick-1	2	TO TO
Interval Drilled							501
Drilling Method(s)							
Borehole Dia. (in.)					_	1	
Temporary Casing Installed? (y/n) Depth temporary casing installed			5		pulal		-Grant
Casing type/dia. (in.)					-	1	
Method of installing					100	11	
The tion of mistaning					well		444
CASING PULLING			10				
	out Pull, Grout	40,500	, _				
	13.1 ft					4	P
Casing type/dia. (in.)	2' PUC						
CASE DEDEOD ATING							
CASE PERFORATING Equipment used			15		·		
Number of perforations/foot				-			
Size of perforations					-		
Interval perforated				7			
GROUTING							
Interval grouted (FBLS)	-10.4						
# of batches prepared							
For each batch record:	18						
Quantity of water used (gal.) Quantity of cement used (lbs.)	- 649						
	710						
Quantity of bentonite used (lbs.)	10 rounds						
Quantity of calcium chloride used (lbs.)							
Volume of grout prepared (gal.)							
Volume of grout used (gal.)	11 801						
	J	1					
COMMENTS: peptin to water = 7.76	Ft. Fram TUC				mmissioning da		
	ssing with	l .	l overdrille ckup, etc.	ea, interval	grouted, casing	iest in ho	oie,
	na Kivey		1,				
Sovehole Torred off with so							

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY DEPOT	Well ID: MW12-35
Site Location: SEAD 12	Driller: Scott Breeds
Drilling Company: Geologic North Star	Inspector: Scott Dillman
J	Date: 9/13//0
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Denth /
OVERDRILLING Interval Drilled Drilling Method(s)	Depth (feet)  Stick up  2.3  Removed  Removed  FOIL  Removed  SOIL
Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing	10 GROUT
CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)	ZO BENDWITZ
CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated	30 Sand
GROUTING - GROUT IN PLACE Interval grouted (FBLS) # of batches prepared  For each botch record.	HO Bettom of Well
For each batch record:  Quantity of water used (gal.)  Quantity of cement used (lbs.)  Cement type  Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)  Volume of grout prepared (gal.)  Volume of grout used (gal.)	DRILLED
COMMENTS: Depth to water 13.4 ft. from TOC Tremise growted casing to ~3.4. Dig out offer casing and stickup. Backfill offer hole with soil.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Sereca Army Depot	Well ID: MWIZ-38
Site Location: $5 \in A \cap 12$	Driller: 5 cott Breeds
Drilling Company: Geologic North Star	Inspector: Scott Dillman
J J	Date: 9/14/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth
(Tim in an end apply)	
OVERDRILLING	(feet) o Flush 10.3
Interval Drilled	Filled
Drilling Method(s)	box too
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	- Pulled 1 + To.
Depth temporary casing installed	- Syrtue
Casing type/dia. (in.)	- PVC     177 me
Method of installing	— uell
CASING PULLING	
Method employed Great full	Isrut 10
Casing retrieved (feet)	Buttone
Casing type/dia. (in.)	C OF Well
CASE PERFORATING	<u> </u>
Equipment used	
Number of perforations/foot	- Javet
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	5
# of batches prepared	1/1
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2 5003	
Cement type  Overtity of hontanity used (lbs.)	
Qualitity of bentonite used (los.)	- $ $ $ $ $ $
Quantity of calcium chloride used (lbs.)	- $       -$
Volume of grout prepared (gal.) Volume of grout used (gal.)	-
Volume of grout used (gal.)	
COMMENTS: De offe to water 4.64 from Too	* Sketch in all relevant decommissioning data, including:
	interval overdrilled, interval grouted, casing left in hole,
bush filling derebble with great to new	Ser face, well stickup, etc.
	ox lid back on.

WELL DECOMMISSIONIN	NG RECORD		•	
Site Name: Seneca Army	No pot	Well ID: N	LW12-39	
Site Location: SEAD	2_		off Breeds	
Drilling Company: 6-ealogic Nor	the star	Inspector: 5	Feeth Villma,	^
		Date: 9//4	1/10	
DECOMMISSION	JING DATA	W	ELL SCHEMATIC*	
(Fill in all tha		Depth	FLUSH +	. Toc. to
OVERDRILLING Interval Drilled		(feet)	MOUNT	TO, 2'
Drilling Method(s)	`			Box too
Borehole Dia. (in.)				Grunt
Temporary Casing Installed? (y/n)		7		1/40
Depth temporary casing installed			Polled	500 face
Casing type/dia. (in.) Method of installing			well.	
liveurou of mounting			cusing	
CASING PULLING		1 0		
Method employed	6 rust Poll 6 sot	10		
Casing retrieved (feet)	10,2		4	Botton
Casing type/dia. (in.)	Z" PUC			of well
CASE PERFORATING			/	
Equipment used		15		
Number of perforations/foot				7
Size of perforations				NOT
Interval perforated				/ /
GROUTING				ARILLE
Interval grouted (FBLS)	0-10-2	***************************************		
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)	18		<u> </u>	
Quantity of cement used (lbs.) Cement type	2			/
Quantity of bentonite used (lbs.)	74pe 1			/
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)				/ ]
Volume of grout used (gal.)	10 gal			
	2.8 Ft from TOC ed Casing with grout		ant decommissioning data, in interval grouted, casing left	
I heplace flugh mount cover				

Department Representative

WELL DECOMMISSIONING R	EECORD			•
Site Name: Seneca 4rmy 1	eact	Well ID:	MW12-40	0
Site Location: SEAD 12	7	Driller:	Scott Breed	
Drilling Company: Geologic North	L Star	Inspector:	Scott Dilla	
			1/14/10	
DECOMMISSIONING	DATA		WELL SCHEMATI	O#
(Fill in all that apply		Depth		24
(1 m m an that apply	y)	(feet)	stickup 3	1 Top Puc
OVERDRILLING		10	removed	A TOTO
Interval Drilled				1 50il
Drilling Method(s)				
Borehole Dia. (in.)				Grout
Temporary Casing Installed? (y/n)			110	1 4
Depth temporary casing installed		5	30110	
Casing type/dia. (in.)			ONC	
Method of installing		-	= puc well	
CASING PULLING				
Method employed	1.1011	10		11 11
Casing retrieved (feet)	Grant, Pull Grant			Bottom
Casing type/dia. (in.)	13.4 FT Z" MC			1 0F Wall
Casing typerdia. (iii.)	2 /1/			
CASE PERFORATING				[/]
Equipment used		15		
Number of perforations/foot				
Size of perforations				1/
Interval perforated				
				NOT
GROUTING				Do. Hed
Interval grouted (FBLS)	1-10.4			1 2000
# of batches prepared				1
For each batch record:				$\mathbf{Y}_{A}$
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	2_			
Cement type	Type I Par Hand			
Quantity of bentonite used (lbs.)	10			
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)				1/1
Volume of grout used (gal.)	10 ga			
COMMENTS: Death to water 10	0-8 ff. Fran Toc ]			
1 2 201	asing with grout.		levant decommissioning da ed, interval grouted, casing	
0 11 0	1 /4 2	well stickup, etc.		ien in noie,
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	with soils			
sorehole with growt. Topped off	W112 2011			

beologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD			
Site Name: Seneca Army Depot	Well ID: MW13-1		
Site Location: 5EAD 13	Driller: Scott Breed 3		
Drilling Company: 6-Edggic North Star	Inspector: Scott Dillwan		
Drilling Company. G-Edia Gt C 1007-100 ) 1 20	Date: 9/15/10		
DECOMMISSIONING DATA	WELL SCHEMATIC*		
(Fill in all that apply)	Depth (foot) a 2 / 1 14.9		
OVEDDBILLING	(feet) 2 24 5 TOC TO TO		
OVERDRILLING	30:1		
Interval Drilled	70:1		
Drilling Method(s)			
Borehole Dia. (in.) Temporary Casing Installed? (y/n)			
Depth temporary casing installed	5 - 1 1 1		
Casing type/dia. (in.)	PUC 7 Gaut		
Method of installing			
Interior of histaring	= colled		
CASING PULLING	1 11 11		
Method employed Grant full Grant	10 -		
Casing retrieved (feet)			
Casing type/dia. (in.)			
Cuting type and (int)	Betton		
CASE PERFORATING	1 0 4		
Equipment used	15 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
Number of perforations/foot			
Size of perforations			
Interval perforated	$\neg$ $V$		
GROUTING	20 ]		
Interval grouted (FBLS)			
# of batches prepared			
For each batch record:	- Not		
Quantity of water used (gal.)	Dolled		
Quantity of cement used (lbs.) 2 Bo-95			
Cement type Type I Partian			
Quantity of bentonite used (lbs.)			
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)	<u> </u>		
Volume of grout used (gal.)			
COMPARTMENT A ALL LONG AT A TAKEN			
COMMENTS: Depth to water = 7.5 ATW from Tox	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,		
Knocked out end plug. Loaded casing with grout.	well stickup, etc.		
Pulled casing. Grouted remaining borehole.			

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RE	CORD			
Site Name: Seneca Army Dep	ot		MW13-2	_
Site Location: SEAD 13		Driller: 5 a	oH Breeds	
Drilling Company: Geologic North	Star		est Dillman	
		Date: 9/	15/10	
DECOMMISSIONING DA	ATA		VELL SCHEMATIC*	
(Fill in all that apply)		Denth	Removed	
(2 11 11 111 111 111 111 111 111 111 111		(feet)	2.4 18.4	
OVERDRILLING		. 0	STICKUP TOC TO	ID
Interval Drilled			5011	
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		E		
Depth temporary casing installed				
Casing type/dia. (in.)				
Method of installing			46100	, 1
			Pulled	
CASING PULLING		10	-	
Method employed	Great Pull Great		- PUC (asing)	
Casing retrieved (feet)	18,4		- lina	
Casing type/dia. (in.)	2" PVC		- (an')	
CASE PERFORATING				
Equipment used		15	To the same of the	
Number of perforations/foot			The second second	
Size of perforations			BOTT	dig
Interval perforated			1 16	
Interval perforated		70	Wel	1
GROUTING		20	$\neg$ $1/1$	
Interval grouted (FBLS)	1-16ft			
# of batches prepared	À			
For each batch record:				
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	2 8095	1	N61	
Cement type	Type 1		Arill	el)
Quantity of bentonite used (lbs.)	10			U
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)			$\rightarrow$	
Volume of grout used (gal.)	16 gal			
COMMENTS. 2. H. i water - ATT	535 B = 30			
COMMENTS: Depth to water = DTW	5.25 Amtoc		levant decommissioning data, including: ed, interval grouted, casing left in hole,	
	well with groute	well stickup, etc.	a, mervar grouted, easing left in nois,	
	naining berelile	,		
Add Sol on top.	-1			

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	·		
Site Name: Stneca Army Depot	Well ID:	MW13-3	
Site Location: 5EAD 13		ott Breeds	A. D. C. C. C. C. C. C. C. C. C. C. C. C. C.
Drilling Company: Geologic North Stur	Inspector: 5		
Drilling company. G. G. 18276	Date: 9//	15/10	
DECOMB REGIONATION DATA		UELL COUEMATICS	±
DECOMMISSIONING DATA	Depth v	VELL SCHEMATIC	•
(Fill in all that apply)	(feet)	2.9	1 1 26.4
OVERDRILLING	(1001)	Theleup	26.4 Top-to
Interval Drilled			
Drilling Method(s)		<del>-</del>	H7?"
Borehole Dia. (in.)			A PERSONAL DAVIS
Temporary Casing Installed? (y/n)			rar Pranses
Depth temporary casing installed	5		A STANDARD OF THE STANDARD OF
Casing type/dia. (in.)			Growt
Method of installing			1 -1 - 61001
Treetied of mislaming		Pulled pull well	The state of the s
CASING PULLING	17	211	Para Para Para Para Para Para Para Para
Method employed Grout Pull Grant	10	puc	Table State
Casing retrieved (feet) 23.5 ft.	ACCOUNT OF THE PROPERTY OF THE	well	111111111111111111111111111111111111111
Casing type/dia. (in.)			
Custing type and (init)			
CASE PERFORATING	1 000	+	
Equipment used	()		And the second
Number of perforations/foot			
Size of perforations		<del>                                      </del>	
Interval perforated			
Theorem perforated		+-1 /	
GROUTING	20		
Interval grouted (FBLS)			
# of batches prepared			T 17 17 17 17 17 17 17 17 17 17 17 17 17
For each batch record:			
Quantity of water used (gal.)	0		Bothm
Quantity of cement used (lbs.) 2 545	25		1 of well
Cement type Type I sor than I	***************************************	Street, of Columbia	$VA^{\nu}$
Quantity of bentonite used (lbs.)			$V_A$
Quantity of calcium chloride used (lbs.)			NUT
Volume of grout prepared (gal.)			Acillad
Volume of grout used (gal.)			1/10/11/12
			<i>,</i>
COMMENTS: Well blaved. Stickers broken - No water level	* Sketch in all rele	evant decommissioning data	, including:
Knocked off end cal. Loaded casing with grout	interval overdrille	d, interval grouted, casing le	
Pullal casing, Grouted remaining Sorehole,	well stickup, etc.		
Added soil of tol.			

Geologic North Star

WELL DECOMMISSIONING RE	CORD	•				
Site Name: Seneca Army Dep	ot	Well ID:	MW/3-4			
Site Location: SEAD 13						
Drilling Company: Geologic North	Stac		Scott Dillma	1		
Drining company. C Specific 70077		Date: 9	116/10			
DECOMMISSIONING DA	A T A		WELL SCHEMATIC	* <b>/</b> k		
(Fill in all that apply)	AIA	Depth	_ /	12.5		
(1 in in an anat apply)		(feet)	2.6			
OVERDRILLING		.0	stick up Rumoved	TOP TO TA		
Interval Drilled				at Soil		
Drilling Method(s)			***************************************			
Borehole Dia. (in.)						
Temporary Casing Installed? (y/n)		_				
Depth temporary casing installed		5	DULLED	1		
Casing type/dia. (in.)			0116	Grout		
Method of installing			POLLED PUC POLLED	4		
CASING PULLING						
Method employed	Grout, Pull, Grait	10		Bottom		
Casing retrieved (feet)	12,5 ft			04		
Casing type/dia. (in.)	2" PVC		***************************************	well		
CASE PERFORATING			-			
Equipment used		15				
Number of perforations/foot		degramment representative control of the control of	With the Control of t			
Size of perforations						
Interval perforated			-			
Interval perforated		<b>7</b> .				
GROUTING		20	***************************************			
Interval grouted (FBLS)	1-9.9					
# of batches prepared						
For each batch record:	processor to the second section of the second secon			/		
Quantity of water used (gal.)	18	7				
Quantity of cement used (lbs.)	2-bags	25				
Cement type	Type Y Portland		***************************************	/		
Quantity of bentonite used (lbs.)	10 pounds		where the control of	NOI		
Quantity of calcium chloride used (lbs.)				DRILLED		
Volume of grout prepared (gal.)		30				
Volume of grout used (gal.)	1 9gal 1		edit Silving the silvings			
COMMENTS: Depth to water = 6	O ft from TOC	* Chatab in all!	ariant danamerical 1			
Knocked out end cap. Loaded ca		interval overdrille	evant decommissioning data ed, interval grouted, casing le	thin hole.		
	ining borehole.	well stickup, etc.	5 ·, ·, ·	,		
Added soil in top.						

Geologic North Star

Drilling Contractor

## WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: Scott Breeds SEA D Driller: Site Location: Drilling Company: Inspector: Date: 116/10 **DECOMMISSIONING DATA** WELL SCHEMATIC\* (Fill in all that apply) Depth 2.6 (feet) stick up Rumoved OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Grout Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Number of perforations/foot BOTTOM Size of perforations 08 Interval perforated Well 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) COMMENTS: Depth to water = 8.52 ft from TOC \* Sketch in all relevant decommissioning data, including: with grout. interval overdrilled, interval grouted, casing left in hole. well stickup, etc.

Geologic North Star

**Drilling Contractor** 

WELL DECOMMISSIONING	RECORD			•	
Site Name: Seneca Army Depot		Well ID: MW 13-6			
Site Location: SEAD 13		The Control of the Co			
Drilling Company: Geologic North	1 Star	The same of the sa	Scott Dill		
		Date: 9	2	77.007 (	
DECOMMISSIONING	DATA		WELL SCHEM	ATIC*	
(Fill in all that app	-	Depth	_	1 -7	
	• •	(feet)	2.		
OVERDRILLING		_ 0	5HG Rum	KUS TOP TO TO	
Interval Drilled	WWW.MARCH.Co.			4- Soil	
Drilling Method(s)					
Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)		5			
Depth temporary casing installed Casing type/dia. (in.)			PUL	+	
Method of installing	A CONTROL CONTROL MANAGEMENT AND AND AND AND AND AND AND AND AND AND		- PUC	Grout	
ivictiod of histaring	- I		- WEL	1	
CASING PULLING					
Method employed	Grout, Pull, Grout	10		Botom	
Casing retrieved (feet)	11.3 ff			Bottom	
Casing type/dia. (in.)	Z"PVC			/ well	
	t				
CASE PERFORATING					
Equipment used		15			
Number of perforations/foot	William Control of the Control of th				
Size of perforations					
Interval perforated				<i>f</i>	
GROUTING		20			
Interval grouted (FBLS)	1-96+				
# of batches prepared	1-14-				
For each batch record:			**********		
Quantity of water used (gal.)	18		-		
Quantity of cement used (lbs.)	2-bags	25			
Cement type	Type I Purtland		streamine territori		
Quantity of bentonite used (lbs.)	10 pounds			NOT	
Quantity of calcium chloride used (lbs.)				DRILLED	
Volume of grout prepared (gal.)				W. Succes	
Volume of grout used (gal.)	9 901	30			
COMPARATES A	2 2 2				
COMMENTS: Depth to water =	7.3 ft from TOC	* Sketch in all re	levant decommissionir	ng data, including:	
	casing with grout.	interval overdrill well stickup, etc.	ed, interval grouted, ca	asing left in hole,	
Added soil on top.	aining porehole.	men snekup, etc.	-		
Added soil on top.					

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depat	Well ID: MW13-7
Site Location: SEAD 13	Driller: 5 cott Breeds
Drilling Company: Geologic North Star	Inspector: Seatt Dillman
J	Date: 9 /15/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth
(x m m see see see see	(feet) 2.8 (0.6)
<u>OVERDRILLING</u>	STICKURE TO TO
Interval Drilled	1 + 501
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	polled & Gout
Depth temporary casing installed	5 NG 151
Casing type/dia. (in.)	- well
Method of installing	
	Well
CASING PULLING	7.8 Botton
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	15 -
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	- Not
Interval grouted (FBLS)	DRILLES
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	/
Volume of grout used (gal.)	
7	
COMMENTS: Depth to water = 7.55 from ]	internal accordabled internal agented againg left in hole
Knocked off and cap. Loaded Casing with grout	interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
Pulled casing. Growted remaining borefule.	

Geologic North Star-Drilling Contractor

WELL DECOMMISSIONING R	ECORD		•
Site Name:		Well ID:	MW13-9
Site Location:		Driller:	
Drilling Company:		Inspector:	
Diming company.		Date:	
DECOMMISSIONING D	OATA		WELL SCHEMATIC*
(Fill in all that apply	)	Depth	1.11
		(feet)	1.4 16.2
OVERDRILLING			sticked Toc to
Interval Drilled			561
Drilling Method(s)			
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)		6	
Depth temporary casing installed			Grut
Casing type/dia. (in.)			- pulled
Method of installing			70100
			PIC
CASING PULLING		1	- well
Method employed	Grat P.M. Grout	10	we 1
Casing retrieved (feet)	16.2 F+		
Casing type/dia. (in.)	PVC 2"		
CASE PERFORATING			
Equipment used		15	Bottom
Number of perforations/foot			- of
Size of perforations			well
Interval perforated			
•			
GROUTING	promote and the second	20	
Interval grouted (FBLS)	1-14.84		
# of batches prepared			
For each batch record:	politicista		
Quantity of water used (gal.)	18		
Quantity of cement used (lbs.)	2 545		
Cement type	Type		
Quantity of bentonite used (lbs.)	10		
Quantity of calcium chloride used (lbs.)			
Volume of grout prepared (gal.)			
Volume of grout used (gal.)	15 gal		
		_	The second secon
	6 ft, fame TOC		levant decommissioning data, including:
Knocked off and plug. Loade	d casing with		ed, interval grouted, casing left in hole,
grout. Pulled Colsing. Grow	ted rest of	well stickup, etc.	
porchole. Add soil on +	η, Δ.,		

beslegic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	•
Site Name: Seveca Army Depot	Well ID: MW/3-/0
Site Location: 5EAD 13	Driller: 500 H Broad 5
Drilling Company: Gratogic North Star	Inspector:
Drining Company. (546/03) to the received	Date:
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth ,
(1 in an that appry)	(feet) /8 -   /6, 2
OVERDRILLING	O Sticken TOC TO TO
Interval Drilled	9-361
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	Grant
Casing type/dia. (in.)	-
Method of installing	$ \frac{1}{2}$
CARING DITLING	puller
CASING PULLING Method employed Growthal broat	
Casing retrieved (feet)	- 800
Casing type/dia. (in.)	- Well
Cusing type dua. (iii)	
CASE PERFORATING	
Equipment used	15 Bottom
Number of perforations/foot	
Size of perforations	
Interval perforated	
CROUTING	
GROUTING Interval grouted (FBLS)	Not
# of batches prepared	
For each batch record:	Dr. New
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Depth to water - 6 & ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked end can effo well caring came with rods.	interval overdrilled, interval grouted, casing left in hole,
Trenil granted hole. Addy soil on too	well stickup, etc.

8Hites

Drilling Contractor

WELL DECOMMISSIONING	RECORD			
Site Name: Seneca Army Dep	pat	Well ID: /	MW13-11	4
Site Location: SEAD 13		Driller: 5	cott Bree.	13
Drilling Company: Geologic Nor	th star	Inspector:	Scott Dillma	. ^
		Date: 9/	15/10	
DECOMMISSIONING	DATA		WELL SCHEMAT	TC*
(Fill in all that app		Depth		
(= === === === == = = = = = = = = = = =	**	(feet)	Sticke 1.8 f	P 16.6
OVERDRILLING		0	- 1.8 f	red TOGTO
Interval Drilled				15011
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		-		
Depth temporary casing installed			0.36	Grout
Casing type/dia. (in.)			Pre	
Method of installing			vell	71 71
CASING BUILLING		10	Colled	
CASING PULLING Method employed	Grout Pull Grout	10		
1			Total Indiana	The state of the s
Casing retrieved (feet) Casing type/dia. (in.)	16.6 ft 2" NC			THE STATE OF THE S
Casing type/dia. (iii.)	LLNC			
CASE PERFORATING		1		
Equipment used		15		1/0-14
Number of perforations/foot				Botton
Size of perforations				Well
Interval perforated				Y A
	l			
GROUTING				
Interval grouted (FBLS)	1-14.8			
# of batches prepared				
For each batch record:			-	
Quantity of water used (gal.)	18			NOT
Quantity of cement used (lbs.)	26695			DRILLED
Cement type	Type JI			Danser
Quantity of bentonite used (lbs.)	10 gounds			
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.) Volume of grout used (gal.)	15			
Volume of grout used (gail.)	15 gal.	J		
COMMENTS: Death to water = 5.1	1ft from TOC	* Charab in all	lovent decomposite in the	late including
Knocked out end cano a Loaded			levant decommissioning d ed, interval grouted, casin	
grout. Pulled Casing, Gro	, , , , , , , , , , , , , , , , , , , ,	well stickup, etc.	or outed, oddin	g ,,
Sorehole. Added soil on top		7		

Crealogic North Star Drilling Contractor

Site Name: Seneca Army Depot Well ID: MW 13-12	
Site Name: Seneca Army Depot   Well ID: MW 13-12	
Site Location: SEAD 13 Driller: Scott Breeds	
Drilling Company: G-eologic North Star Inspector: Scott Dillman	
Date: 9/16/10	
DECOMMISSIONING DATA WELL SCHEMATIC*	
(Fill in all that apply)  Depth	q1
(feet)	
OVERDRILLING Top"	TO TA
Interval Drilled Sc	ģŧ.
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)  Depth temporary casing installed	
popular temperary status	+
Casing type/dia. (iii.)	ا لمار
Method of installing WELL	
CASING PULLING	
Method employed	toing
Cooling metalaged (fact)	
Casing type/dia. (in.)	ıį
CASE PERFORATING	
Equipment used 15	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING 20 —	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2-5aq5 25	
Cement type Type Y Particul	
Quantity of bentonite used (lbs.)	1
Quantity of calcium chloride used (lbs.)	LLED
Volume of grout prepared (gal.)	
Volume of grout used (gal.) 9 gal. 30	
COMMENTS: A sail to the first t	
COMMENTS: Depth to water = 6.05 ft from ToC *Sketch in all relevant decommissioning data, including:	
Knocked out end cap. Leaded casing with grout. interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	
Added soil in top.	

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING R	ECORD			•
Site Name: Seneca Army De	aot .	Well ID:	MW 24-	1
Site Location: SEAD - 24	7	Driller: J	or men	ze/
Drilling Company: G-Cologic North	Star		Scott Dill	
, , , , , , , , , , , , , , , , , , , ,		Date: 9	2 4	77007
DECOMMISSIONING I	DATA		WELL SCHEM	ATIC*
(Fill in all that apply		Depth		5 12,1
		(feet)		, , , ,
OVERDRILLING		0	stig Rum	Ken TOP TO TO
Interval Drilled	WASHINGTON AND AND AND AND AND AND AND AND AND AN			Soil
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n) Depth temporary casing installed		5		
Casing type/dia. (in.)				
Method of installing			- PUC	Grout
mount of maching			PULL PUC WEL	1
CASING PULLING				
Method employed	Grout Pull, Growt	10		Botton
Casing retrieved (feet)	12:1 FT			Postar
Casing type/dia. (in.)	2"PVC		-	/ Well
				well
CASE PERFORATING		15	**********	
Equipment used		15	Militari Annagana	
Number of perforations/foot				
Size of perforations Interval perforated				
interval perforated				1
GROUTING		20		
Interval grouted (FBLS)	1-9.6 /			
# of batches prepared				
For each batch record:			***************************************	,
Quantity of water used (gal.)	18		aget till agstadensame	
Quantity of cement used (lbs.)	26095	25		l' }
Cement type	Type Y Portland			
Quantity of bentonite used (lbs.)	16 pounds			NOT
Quantity of calcium chloride used (lbs.)				DRILLED
Volume of grout prepared (gal.) Volume of grout used (gal.)	9001	30		
Yourne or grout used (gail)	1 9gal			
COMMENTS: Depth to water =	5,52-ft from TOC	* Charth !"	-1	
Knocked out end cap. Loaded o			elevant decommissionii led, interval grouted, ca	
Pulled casing. Growted remo		well stickup, etc.	•	IOM AII HOID,
Added soil in top.				

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW 24-2
Site Location: SEAD Z4	Driller: Joe Menzel
Drilling Company: Geologic North Star	Inspector: Scott Dillman
J. S. S. S. S. S. S. S. S. S. S. S. S. S.	Date: 9/22/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 2 1/8 4
(2 III III III III III III III	(feet)
OVERDRILLING	O SHOKUP TOP TO TO
Interval Drilled	50:19
Drilling Method(s)	convete
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 DULLED !
Casing type/dia. (in.)	PUC 7 Growt
Method of installing	5 PULLED Growt
CASING PULLING	
Method employed Grout, Poil, Grait	
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	15
Number of perforations/foot	
Size of perforations	BoTTone
Interval perforated	I of
	20 - / well
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)  Quantity of cement used (lbs.)	25 - /
Cement type  Type I fortlend	
Quantity of bentonite used (lbs.)	/ Not
Quantity of calcium chloride used (lbs.)  Volume of grout prepared (gal.)	DRILLED
Volume of grout used (gol )	30 - 1/
volume of grout used (gai.)	
COMMENTS: Depth to water = 8.25 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Granted remaining borehole.	well stickup, etc.
Added soil on top.	

Geologic North Star

## WELL DECOMMISSIONING RECORD Well ID: Seneca Site Name: Driller: Site Location: SEA D Inspector: Scott Drilling Company: Geologic Date: 10 **DECOMMISSIONING DATA** WELL SCHEMATIC\* Depth (Fill in all that apply) (feet) stick of OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used BoTTUN Number of perforations/foot of Size of perforations Well Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type NOT Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) Death to water \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

Drilling Contractor

MW25-4D

WELL DECOMMESSIONING DECO	DD		1.1.4	V
WELL DECOMMISSIONING RECO	KD			•
Site Name: SEAD -25		Well ID:	MW25-41	>
Site Location: He Thathy aren-		Driller:		
Drilling Company:		THE RESERVE OF THE PERSON NAMED IN	ucharte	
Drining Company.		Date:	2 CO 2 M 2 PO	
DEGOLO MUCCIONING DATA		Dute.	WELL SCHEMATION	C*
DECOMMISSIONING DATA (Fill in all that apply)		Depth	WELL SCHEMATI	-501
(Fill in all that apply)		(feet)		1 1
<u>OVERDRILLING</u>		(1000)		IXI I
Interval Drilled				
Drilling Method(s)				$\Lambda$ . $\Lambda$
Borehole Dia. (in.)				X
Temporary Casing Installed? (y/n)		5		
Depth temporary casing installed			-	
Casing type/dia. (in.)				
Method of installing				
CACINIC DUILLING		10		
CASING PULLING		10		
Method employed Casing retrieved (feet)		***************************************	_	$\times$
Casing type/dia. (in.)				( )
Casing type dia. (iii.)				
CASE PERFORATING		15		$M \geq 2$
Equipment used		( )		
Number of perforations/foot				
Size of perforations				1
Interval perforated				$M \setminus I$
		20		
GROUTING	25.4			
Interval grouted (FBLS)	23./			1 1 1
# of batches prepared For each batch record:				X  /
Quantity of water used (gal.)	Seal	75		
Quantity of water used (gair)  Quantity of cement used (lbs.)	16/16	25		
Cement type	antical fel			25.3
	0165			23.3
Quantity of calcium chloride used (lbs.)				
Volume of grout prepared (gal.)				
Volume of grout used (gal.)	29gallon	***************************************	-	
	-			
COMMENTS:	Talana		relevant decommissioning da	-
pull bolluds, perhante end cup,	Temmo gert	well stickup, et	illed, interval grouted, casing tc.	ien in noie,
pull potecké casy. Top off gial	- wodawa	р, «		

Drilling Contractor

Department Representative

Gout in place.

7D: 25.3 Gal 23.1

mw25-4D

Drilling Company:  DECOMMISSIONING DATA  (Fill in all that apply)	Driller: Inspector: Date: Depth (feet)	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	Date: Depth (feet)	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	Date: Depth (feet)	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	Depth (feet)	
(Fill in all that apply)  OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	5 10	
OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	5	
Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	10	
Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	10	
Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	10	
Temporary Casing Installed? (y/n)  Depth temporary casing installed  Casing type/dia. (in.)  Method of installing  CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations	10	
Depth temporary casing installed  Casing type/dia. (in.)  Method of installing  CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations	10	
Casing type/dia. (in.)  Method of installing  CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations	10	
Method of installing  CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations		
CASING PULLING  Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations		
Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations		
Method employed  Casing retrieved (feet)  Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations		
Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	15	
Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations	15	
CASE PERFORATING Equipment used Number of perforations/foot Size of perforations	15	
Equipment used  Number of perforations/foot  Size of perforations	15	$\exists   \downarrow \rangle$
Equipment used  Number of perforations/foot  Size of perforations	()	
Size of perforations		
Size of perforations		
Interval perforated		
an out it is to	20	- M 1
GROUTING	-	\ \ \ \
Interval grouted (FBLS)		
# of batches prepared For each batch record:		- 1
Quantity of water used (gal.)		
Quantity of water used (gar.)  Quantity of cement used (lbs.)	25	
Cement type		/ / /
Quantity of bentonite used (lbs.)		k1
Quantity of calcium chloride used (lbs.)		
Volume of grout prepared (gal.)	21	
Volume of grout used (gal.) 30 30 (wh)	20	7
, and the same of		
COMMENTS:	* Sketch in all	relevant decommissioning data, including

Drilling Contractor

Department Representative

Grat In place

well ID:  Well ID:  Driller:  Inspector:  Inspector:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Decompany:  Depth  (Fill in all that apply)  Depth  (feet)  Depth  (feet)  Decompany:  Depth  (feet)  Depth  (feet)  Decompany:  Depth  (feet)  Depth	TO STONE DECORD		MW.	15-11
the Name:  See Location:  The Locat Age.  Inspector:  Inspector:  Inspector:  WELL SCHEMATIC*  Depth (feet)  Depth	VELL DECOMMISSIONING RECORD		10000	
the Name:  See Location:  The Locat Age.  Inspector:  Inspector:  Inspector:  WELL SCHEMATIC*  Depth (feet)  Depth	12.2.45	Well II	o: MW.	-11
ite Location: Fire Teach Me. NS  DECOMMISSIONING DATA (Fill in all that apply)  DECOMMISSIONING DATA (Fill in all that apply)  DECOMMISSIONING DATA (Fill in all that apply)  Depth (feet)  Depth (fee				
Date:  DECOMMISSIONING DATA (Fill in all that apply)  Depth (feet)  Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.)  CASING PULLING Method employed Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval perforated  GROUTING Quantity of water used (gal.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)	ite Location: Fire twint Aver		101.10111	***
DECOMMISSIONING DATA (Fill in all that apply)  DECEMBRILLING Interval Drilled Drilling Method(s) Sorehole Dia. (in.) Depth temporary casing installed Casing type/dia. (in.) Depth temporary casing installed Casing type/dia. (in.) Depth temporary casing installed Casing retrieved (feet) Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations Interval preforated  GROUTING Interval perforated  GROUTING Unantity of water used (gal.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)	rilling Company: Geologic NS			
DECOMMISSIONING DATA (Fill in all that apply)  DEFIDILLING Interval Drilled Drilling Method(s) Sorehole Dia. (in.) Depth temporary casing installed Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method of installing  CASING PULLING Method of installing  CASING PULLING Method or installing  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforate  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of ement used (lbs.) Cement type Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)		Date.	WELL SCI	HEMATIC*
(Fill in all that apply)  (Fill in all that apply)  (Fill in all that apply)  (Fill in all that apply)  (Fill in all that apply)  (feet)  (fee	DECOMMISSIONING DATA	Denth		
nterval Drilled Prilling Method(s) Sorehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method omployed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of cement used (lbs.) Quantity of cement used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout used (gal.) Quantity of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:	(Fill in all that apply)	1 -		1 30 1.010
nterval Drilled Prilling Method(s) Sorehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method omployed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of cement used (lbs.) Quantity of cement used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout used (gal.) Quantity of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:	OVERDRI I ING			——/ <del> </del> ——
Prilling Method(s) Sorehole Dia. (in.) Perphorary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing retrieved (feet) Casing trevel/dia. (in.)  CASE PERFORATING Equipment used Number of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of water used (lbs.) Quantity of cement used (lbs.) Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:  CASE PERFORATING Equipment used  Bellow's (lbs.)  Comment used  Com				1/1/1
Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of calcium chloride used (lbs.) Coment type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout used (gal.) Volume of grout used (gal.)  Volume of grout used (gal.)  COMMENTS:  COM				/ / / /
Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of ach batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of grout prepared (gal.) Volume of grout prepared (gal.) Volume of grout used (gal.)  Volume of grout used (gal.)  Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  COMMENTS	Borehole Dia. (in.)		. —	1 / 1
Depth temporary casing installed Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of carent used (lbs.) Quantity of carent used (lbs.) Quantity of calcium chloride used (lbs.) Quantity of grout prepared (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Temporary Casing Installed? (y/n)	-1 1 $2$	_	
Casing type/dia. (in.) Method of installing  CASING PULLING Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of water used (lbs.) Cement type Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  Volume of grout used (gal.)  COMMENTS:	Denth temporary casing installed	_		1/7/
Method of installing  CASING PULLING  Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Comment of grout prepared (gal.) Volume of grout used (gal.)  Comment is sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Casing type/dia. (in.)	·		1/1/5/1
Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:  COM	Method of installing			/ / /
Method employed Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of cement used (lbs.) Quantity of calcium chloride used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:  Comment is a comment of the policy	CAGING DUI LING			
Casing retrieved (feet) Casing type/dia. (in.)  CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of cement used (lbs.) Quantity of cement used (lbs.) Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) Volume of grout used (gal.)  COMMENTS:  Comments				1/1\
Casing type/dia. (in.)  CASE PERFORATING  Equipment used  Number of perforations/foot  Size of perforations  Interval perforated  GROUTING  Interval grouted (FBLS)  # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of water used (lbs.)  Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Comment of grout prepared (gal.)  Comment of grout prepared (gal.)  Comment of grout prepared (gal.)  Comment of grout used (gal.)  Comment of grout prepared (gal.)  Comment of grout prepared (gal.)  Comment of grout prepared (gal.)  Comment of grout prepared (gal.)  Comment of grout used (gal.)  Comment of grout used (gal.)  Comment of grout prepared (gal.)  Comment of grout used (g	Method employed  7.3H			/   \
CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Comment Comment (gal.)  COMMENTS:  Comment (gal.)  Comment (ga	Casing type/dia (in)			
Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  COMMENTS:  Renae Bolous, Renae en cup with performer interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Casing type dia. (iii.)		, —	
Equipment used Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Tende Bollows Renow on With Deforter  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	CASE PERFORATING		6 —	
Number of perforations/foot Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Comment type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Versal Balands, Renal and Carlot With Particular interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Equipment used			
Size of perforations Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  COMMENTS:  Comment type  Comment type  Quantity of calcium chloride used (lbs.)  Volume of grout used (gal.)  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Number of perforations/foot			
Interval perforated  GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  Volume of grout used (gal.)  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			_	+ + 7.31
Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			9 —	
Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			<i>)</i> —	
# of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  Revale Balands: Revale of Cap with personner  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.		-		
For each batch record:  Quantity of water used (gal.)  Quantity of cement used (lbs.)  Cement type  Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)  Volume of grout prepared (gal.)  Volume of grout used (gal.)  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Interval glotted (FBES)	<u> </u>		
Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	# of batches prepared			
Quantity of cement used (lbs.)  Cement type  Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)  Volume of grout prepared (gal.)  Volume of grout used (gal.)  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	For each batch record:			
Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  *Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Ouantity of water used (gail)		-	
Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Quantity of cement used (lbs.)	*6/		
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.)  COMMENTS:  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Cement type	W.		
Volume of grout prepared (gal.)  Volume of grout used (gal.)  COMMENTS:  Renae Bollows, Renae col cap with performer interval overdrilled, interval grouted, casing left in hole, well stickup, etc.  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	It mailing of ochronico about ()			
Volume of grout used (gal.)  COMMENTS:  Reval Bollows, Reval col cap with personner interval overdrilled, interval grouted, casing left in hole, well stickup, etc.  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Quantity of calcium chloride used (lbs.)			
COMMENTS:  Rence Ballows, Rence cel cap with percenter interval overdrilled, interval grouted, casing left in hole, well stickup, etc.  * Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Volume of grout prepared (gal.)	<del></del>		
Renae Balands, Renae end cup with Denarder interval overdrilled, interval grouted, casing left in hole, well stickup, etc.	Volume of grout used (gal.)		(more and an analysis)	
Renae Balands, Renae end cup with Denarder interval overdrilled, interval grouted, casing left in hole, well stickup, etc.		* \$k	etch in all relevant deco	ommissioning data, including:
Tremme Good Remore projetive cosm Epic well stickup, etc.		inter	val overdrilled, interva-	I grouted, casing left in hole,
Rockill C. L. Backill	Course Character ()	- Depleted	stickup, etc.	
Top of growt Down	Rockill Backlin			
	TOP OH QUAL DOLLAND	1		

Drilling Contractor

Costy polled

Department Representative

TD: 7.3 Gal = 5.5 next to 120

Selieca	Army Depot Acti	vicy	MW25-1	2 D
WELL DECOMMISSIONING RECO	RD	•	MMM 73 1	
Site Name: SEAD · 25		Well ID:	MW-12D	
Site Location: Fire Trainy Aven		Driller:		
Drilling Company: Gedon's		Inspector:	mealist	
Diming company.		Date:		
DECOMMISSIONING DATA		7	WELL SCHEMATI	íC*
(Fill in all that apply)		Depth		1 1501.8
,,,,,		(feet)		30 1.0
<u>OVERDRILLING</u>				
Interval Drilled				
Drilling Method(s)				\\ \.\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		5		
Depth temporary casing installed				
Casing type/dia. (in.)				
Method of installing				
CASING PULLING		16		
Method employed		16		
Casing retrieved (feet)				IXI \
Casing type/dia. (in.)				
CASE PERFORATING		18		1 >23.3
Equipment used		15		
Number of perforations/foot				
Size of perforations				
Interval perforated				
GROUTING		20		
Interval grouted (FBLS)	23.3			
# of batches prepared	1			
For each batch record:				V 1 I I
Quantity of water used (gal.)	Bal	25		
	28(65	23		7-
1 2,	onflood #1			25.1
Quantity of bentonite used (lbs.)	1005			
Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.)				
Volume of grout used (gal.)	10 gallors			
Volume of grout about (gail.)	- Jeruss		-	
COMMENTS:		<b>-</b>	elevant decommissioning	
CANAST LOGICAS POR MISE CAST	ip, lemme	•	led, interval grouted, casin	ng left in hole,
aport. Remore pushedue cons. ?	concere pad.	well stickup, etc		

Drilling Contractor

Department Representative

Groot in place

TD: 25.1 God 23.3 MW 25-12D

MU125-14D

WELL DECOMMISSIONING RECORD	7/1000
Site Name: SEAD 25	Well ID: WW 25-140
Site Location: Fire trainf wer	Driller:
Drilling Company: Geologie NS	Inspector: WCA-16C
Drining Company.	Date:
DEGOLO MAGNONINIC DATA	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)	Depth 244
(1-111 iii ati tilat appry)	(feet)
OVERDRILLING	(local)
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
OAGE BEDEOD ATING	$A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow A \rightarrow$
CASE PERFORATING	15 - X 70
Equipment used	$-\frac{1}{2}$
Number of perforations/foot	
Size of perforations Interval perforated	
interval perforated	
GROUTING	120 - 111
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	25 - 24.8
Cement type Droffel #1	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.) 25ge (as	
COMMENTS:	* Sketch in all relevant decommissioning data, including:
Renow Bollows, Themme Grout, Renove Distente Casity, 700 off grout, Buckful	
District Casty, 100 off growt, Buckful	

Drilling Contractor

Department Representative

Grout in place

TD: 24.6 Gad: 22.8 Mw 25-14D

WELL DECOMMISSIONING RECORD	,
Site Name: SEAD · 25	Well ID: <b>MW 25-16D</b>
Site Location: Fie Truing ever	Driller:
Drilling Company: Geolog NS	Inspector:
21g company.	Date:
DECOMMISSIONING DATA	
(Fill in all that apply)	WELL SCHEMATIC* Depth
(Fill ill all that apply)	Depth (feet)
<u>OVERDRILLING</u>	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING BUILLING	$  \rangle \rightarrow                                   $
CASING PULLING Method employed	10 - 1
Casing retrieved (feet)	
Casing tetrioved (teet) Casing type/dia. (in.)	
Cusing Operation (int)	-
CASE PERFORATING	
Equipment used	15
Number of perforations/foot	
Size of perforations	
Interval perforated	
	20 - 1
GROUTING	
Interval grouted (FBLS)	
# of batches prepared For each batch record:	
Quantity of water used (gal.)	
Quantity of water used (gair)  Quantity of cement used (lbs.)  [38 lbs]	25 - 1
Cement type Pentlad #1	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.) 25 galew	
COMMENTS:  Persone Bollones, Personite end cup:  Tempre Grout, Remore projective casing.  Top offmont, Cit costs below Grade Tupoft	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

25-WW25-16D

## WELL DECOMMISSIONING RECORD 26-Well ID: Site Name: Seneca Driller: Site Location: SEA D Inspector: Drilling Company: Date: WELL SCHEMATIC\* **DECOMMISSIONING DATA** (Fill in all that apply) Depth (feet) stick up Removed OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Grout Casing type/dia. (in.) PVC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLEL Volume of grout prepared (gal.) 30 Volume of grout used (gal.) COMMENTS: Depth to water ft from TOC \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

## WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: SEA D Driller: Menze Site Location: Drilling Company: North Inspector: Geologic Date: **DECOMMISSIONING DATA** WELL SCHEMATIC\* (Fill in all that apply) Depth 2.4 ft (feet) TOP TO TA stick up **OVERDRILLING** Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING Betton 15 Equipment used of Number of perforations/foot Wel/ Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING	RECORD		•
Site Name: Seneca Army A	enot	Well ID:	MW 26-3
Site Location: SEAD 26	T	Driller:	De Menzel
Drilling Company: Geologic Nort	h Star		Scott Dillman
		Date: 9	
DECOMMISSIONING	S DATA		WELL SCHEMATIC*
(Fill in all that app		Depth	WELL SCHEMATIC
(1 III III III III III III III	,,,,,	(feet)	2,5#
OVERDRILLING		.0	Aumored Top TO TD
Interval Drilled			4 Soil
Drilling Method(s)			
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			
Depth temporary casing installed		_5_	PULLED
Casing type/dia. (in.)			PUC P Grout
Method of installing			PULLED Growt
CASING DUILLING			
CASING PULLING Method employed	2 + 0.17	10	
Casing retrieved (feet)	Grout, Pull, Growt		
Casing type/dia. (in.)	7" PVC		4
casing typoraia. (iii.)	_= 146		- 1 1 2 4
CASE PERFORATING			- Bettan
Equipment used		15	
Number of perforations/foot		***************************************	- / well
Size of perforations			<b>—</b>   /
Interval perforated			
		20	
GROUTING	-		
Interval grouted (FBLS)	1-14		
# of batches prepared			
For each batch record:			_
Quantity of water used (gal.)  Quantity of cement used (lbs.)	18	25	
Cement type	2-6ag5		_
Quantity of bentonite used (lbs.)	Type Y Portland		- Not
Quantity of calcium chloride used (lbs.)	11) 6001/18 S		
Volume of grout prepared (gal.)			DRILLED
Volume of grout used (gal.)	14 901	30	<del> </del>  /
			<del></del>
COMMENTS: Depth to water =	12.90 ft from TOC	* Sketch in all re	elevant decommissioning data, including:
	casing with grout.	interval overdrille	ed, interval grouted, casing left in hole,
Pulled casing. Growted ren	naining borehole.	well stickup, etc.	
Added soil on top.			

Geologic North Star

WELL DECOMMISSIONING R	ECORD	And a property of the control of the			
Site Name: Seneca Army De	act	Well ID:	MW 26 -	4	
Site Location: SEAD 26		Driller:	Ch : = 1	rane	0 2
Drilling Company: G-eclogic North	Star	-	Scott Dill	The second second second second second	
		Date: 9	1 - 1	77007	
DECOMMISSIONING I	DATA		WELL SCHEM	ATIC*	
(Fill in all that apply	·)	Depth		7 Pt	13ft
		(feet)	4		
OVERDRILLING	processor and an artist and an artist and an artist and an artist and an artist and artist artist and artist artist and artist artist and artist artist and artist artist and artist artist artist artist and artist art	-0	SHI Rum	eved	TOP TO TA
Interval Drilled				H	Soil
Drilling Method(s) Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)		The second secon			
Depth temporary casing installed		5		ED	
Casing type/dia. (in.)			PULL PULL		Grout
Method of installing			PUL	1 /	Great
			WE	١   ١	
CASING PULLING	g-trinitrian resonant				
Method employed	Grout, Pull, Grost				
Casing retrieved (feet)	13 Fr	,	,		
Casing type/dia. (in.)	2" PVC				Pottery
CASE PERFORATING					well
Equipment used		15			Well
Number of perforations/foot				- V	
Size of perforations					/
Interval perforated					
		20			
GROUTING					
Interval grouted (FBLS) # of batches prepared	1-116+				
For each batch record:					
Quantity of water used (gal.)	18				
Quantity of cement used (lbs.)	2-6095	25			
Cement type	Type Pertland		-	- 1/	
Quantity of bentonite used (lbs.)	10 pounds				NOT
Quantity of calcium chloride used (lbs.)					DRILLED
Volume of grout prepared (gal.)		30			401/2000
Volume of grout used (gal.)	1 90-1	30			
COMMENTS: Depth to water =	9 5 CLR TOOL			,	
	9.5 ft from TOC asing with grout.	* Sketch in all re-	elevant decommissionionionionionionionionionionionionioni	ng data, includ	ding:
Priled casing. Growted remo		well stickup, etc.		maing ien in he	нс,
Added soil in top.	]				

Geologic North Star

## WELL DECOMMISSIONING RECORD Seneca Site Name: Well ID: SEA D Site Location: Driller: Menzo. Drilling Company: Geologic Scott Dillman Inspector: Date: 123/10 DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth (feet) OVERDRILLING TOP TO TO Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (v/n) Depth temporary casing installed Casing type/dia. (in.) Grout PUC Method of installing WELL CASING PULLING Method employed 10 Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING Equipment used 15 Number of perforations/foot Buttan Size of perforations Interval perforated Well 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 COMMENTS: Depth to water ft from TOC \* Sketch in all relevant decommissioning data, including: out end cap. Loade. interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

**Drilling Contractor** 

## WELL DECOMMISSIONING RECORD Seneca Site Name: Well ID: Site Location: SEA Driller: Drilling Company: Dillman Inspector: Date: 10 DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth 1.8 F (feet) OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed PULLED Grout Casing type/dia. (in.) PUC Method of installing WELL **CASING PULLING** 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Number of perforations/foot BoTTany Size of perforations of Interval perforated Well 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLEL Volume of grout prepared (gal.) Volume of grout used (gal.) 30 \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING	RECORD		•			
Site Name: Seneca Army De	> A O T	Well ID:	MW 26-7			
Site Location: SEAD 26		Driller:				
Drilling Company: G-Cologic North	1 Star		Scott Dillman			
Trining company. C GERATE WOTTER STREET		Date: 9	, ,			
DECOMMISSIONING	DATA	Date. 7	<del></del>			
DECOMMISSIONING DATA (Fill in all that apply)		Depth	WELL SCHEMATIC*			
(i iii iii aii tiiat appi	3)	(feet)	39H, 20H			
OVERDRILLING		(1001)	SHICK UP TO TO TO TO			
Interval Drilled			- Soil			
Drilling Method(s)			H-7-7°"			
Borehole Dia. (in.)			<u> </u>			
Temporary Casing Installed? (y/n)			The state of the s			
Depth temporary casing installed		_5	DOULED !			
Casing type/dia. (in.)	***************************************		PUC - Grout			
Method of installing		on the state of th	PULLED Growt			
CASING DUI I DIG			WE -			
CASING PULLING Method employed	2 2 2 1	10				
Casing retrieved (feet)	Grout, Pull, Grost					
Casing type/dia. (in.)	2" PVC					
Casing typerdia. (iii.)	2146					
CASE PERFORATING						
Equipment used		15				
Number of perforations/foot						
Size of perforations						
Interval perforated			Doffm			
GROUTING	·	20	- F			
Interval grouted (FBLS)	1-18 ft		- / well			
# of batches prepared			-1			
For each batch record:	territoria de la constitución de		<b>-</b>    /			
Quantity of water used (gal.)	18					
Quantity of cement used (lbs.)	26095	25	- /			
Cement type	Type Y Portland					
Quantity of bentonite used (lbs.)	10 pounds		Not			
Quantity of calcium chloride used (lbs.)			DRILLED			
Volume of grout prepared (gal.)		3.0	Juliane			
Volume of grout used (gal.)	17gal	30				
COMMENTS: Death to water =	P10 = =		-			
	ft from TOC	* Sketch in all rel	evant decommissioning data, including:			
Riled casing. browted rem	asing with grout.	well stickup, etc.	ed, interval grouted, casing left in hole,			
Added soil on too.	Janey sorengie.					

Geologic North Star
Drilling Contractor

WELL DECOMMISSIONING F	RECORD			
Site Name: Seneca Army De	≥Ao†	Well ID:	MW26-8	
Site Location: SEAD 24		Driller:	Steire Lavanne	
Drilling Company: G-Cologic North	Star		Scott Dillman	lavoris source
J		Date: 9	,	-
DECOMMISSIONING	DATA	Date.	1-/1-	
(Fill in all that appl		Donath	WELL SCHEMATIC*	-
(1 III III all that appl	<i>y)</i>	Depth (feet)	11/2 1/3	5 A
OVERDRILLING		(leet)	Stick up Top To	57 <u>1</u>
Interval Drilled			Rumoved 4- Soil	
Drilling Method(s)			— H—F 361	•
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)				
Depth temporary casing installed		5	O. W. LED	
Casing type/dia. (in.)		-	PUC - Grou	+
Method of installing			PULL Grow	-
		,	WELL	
CASING PULLING			Territory and the second	
Method employed	Grout, Pull, Growt	10		
Casing retrieved (feet)	13.5 Pt			
Casing type/dia. (in.)	2"PVC		The state of the s	
CASE PERFORATING			Bath	jan
Equipment used		15	of.	
Number of perforations/foot			- / We	11
Size of perforations	***************************************		<b></b>    /	9
Interval perforated				
	the state of the s	7.0	<del>-</del>    /	
GROUTING		20		
Interval grouted (FBLS)	1-13,5ft		<u> </u>	
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)	18	3 ~		
Quantity of cement used (lbs.)	2 5ag 5	25		
Cement type	Type I Portland			
Quantity of bentonite used (lbs.)	10 pounds		Not	
Quantity of calcium chloride used (lbs.)			DRILL	ED
Volume of grout prepared (gal.) Volume of grout used (gal.)		30		
volune of grout used (gal.)	12 gal	_30_		
COMMENTS: Depth to water =	10 OF GLB ===			
Knocked out end cap. Loaded a	11.0 ft from TOC	* Sketch in all rel	levant decommissioning data, including:	
Pulled casing. browted rem	aining borehole.	well stickup, etc.	ed, interval grouted, casing left in hole,	
Added soil on top.	- JENGIE			
				1

Geologic North Star
Drilling Contractor

## WELL DECOMMISSIONING RECORD Site Name: Seneca Well ID: MW 26-12 Driller: Steve Larance Site Location: SEA D Drilling Company: Geologic Inspector: Scott Dillman Date: **DECOMMISSIONING DATA** WELL SCHEMATIC\* (Fill in all that apply) Depth (feet) stick of TOP TO TA OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) PULLED Depth temporary casing installed Growt Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING Method employed 10 Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used well Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) bags Cement type Type Y Purtle Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 COMMENTS: Depth to water = ft from TOC \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING	RECORD		•			
Site Name: Seneca Army A	e not	Well ID:	MW 26-11			
Site Location: SEAD Z6		Driller:				
	h Stac		Joe Menzel			
Drilling Company: Geologic North Star		Inspector: Scott Dillman Date: 9/23/10				
DECOMMISSIONING	CDATA	Date.	7/23/10			
(Fill in all that ap		Donal	WELL SCHEMATIC*			
(1 III iii aii tilat ap	Pi3)	Depth (feet)	1.34, 16.46			
OVERDRILLING		(leet)	SHICK UP TO TO TO			
Interval Drilled						
Drilling Method(s)	***************************************		Soil ?			
Borehole Dia. (in.)			Concress			
Temporary Casing Installed? (y/n)						
Depth temporary casing installed		5	PULLED			
Casing type/dia. (in.)			PUC - Growt			
Method of installing			- PUC Grow			
CACDIC DVD I DVC			- WELL I			
CASING PULLING						
Method employed	Grout, Pull, Grost	10				
Casing retrieved (feet)	16.4 ft					
Casing type/dia. (in.)	2"PVC					
CASE PERFORATING						
Equipment used		15				
Number of perforations/foot			Bollow			
Size of perforations			1 05			
Interval perforated			- // We/			
GROUTING		20				
Interval grouted (FBLS)	1-15.1					
# of batches prepared	1 13 1		$\rightarrow$ $1/$			
For each batch record:						
Quantity of water used (gal.)	18					
Quantity of cement used (lbs.)	2-6ag5	25				
Cement type	Type Y Portland		<del> </del>			
Quantity of bentonite used (lbs.)	10 pounds		Not			
Quantity of calcium chloride used (lbs.)						
Volume of grout prepared (gal.)		_	DRILLED			
Volume of grout used (gal.)	15901	30				
COMMENTS: A (1	15-113					
COMMENTS: Depth to water =	13.43 Ft from TOC	* Sketch in all re	levant decommissioning data, including:			
	casing with grout.	interval overdrille	ed, interval grouted, casing left in hole,			
Pulled casing. Growted ren Added soil in top.	raining borehole.	well stickup, etc.				
Added soil in top.						

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING	G RECORD			•	
Site Name: Seneca Army	Ne not	Well ID:	MW 27-1		
Site Name: Seneca Army Depot Site Location: SEAD 27		Driller: Joe Menzel			
Drilling Company: Geologic North Star		Inspector: Scott Dillman			
Drining Company. C-Collegic Worfer 5 124		Date: 9/23/10			
DECOMMISSIONIN	IG DATA	24.0.	WELL SCHEMA	TIC*	
(Fill in all that apply)		Depth		3ff 17.2	
(	77	(feet)	2.	Comme	
OVERDRILLING		0	stick Remov	TOP TO TO	
Interval Drilled				4 5011	
Drilling Method(s)				Fgravel	
Borehole Dia. (in.)					
Temporary Casing Installed? (y/n)					
Depth temporary casing installed		5	puller	Δ       Δ	
Casing type/dia. (in.)			- PULLED	Grout	
Method of installing			WELL	. 12	
CACING DIE LING			- WE		
CASING PULLING Method employed	[	10		Fergining Common	
	Grout, Pull, Grait	10	-		
Casing retrieved (feet) Casing type/dia. (in.)	2"PVC		,	Andreas Andrea	
Casing type/dia. (iii.)	2 14	,			
CASE PERFORATING					
Equipment used		15		A CONTROL OF THE PARTY OF THE P	
Number of perforations/foot			• Alternatures	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
Size of perforations				Botton	
Interval perforated				of.	
		2 0		Well	
GROUTING		20			
Interval grouted (FBLS)	1-14.9 ft		CAMPAGNA AND AND AND AND AND AND AND AND AND A	1/	
# of batches prepared				VI	
For each batch record:					
Quantity of water used (gal.)	18	3 ~			
Quantity of cement used (lbs.)	2-6ag5	25			
Cement type	Type I Portland				
Quantity of bentonite used (lbs.)	10 pounds			NOT	
Quantity of calcium chloride used (lbs.)				DRILLED	
Volume of grout prepared (gal.) Volume of grout used (gal.)	1.6	20			
votaine of grout used (gal.)	18gal	30			
COMMENTS: Depth to water	- ( 17 ( )				
		* Sketch in all re	elevant decommissioning	data, including:	
Knocked out end cap. Loaded casing with grout. Rilled casing. Growted remaining borehole.		interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			
Added soil on top.	maining vorence.				

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING R	ECORD			•
Site Name: Seneca Army De	ΛΛΤ̈́	Well ID:	MW 27-2	7
Site Location: SEAD 27	por	Driller:	Joe Men	701
Drilling Company: Geologic North	Stac		Scott Dilln	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWIND TWO IS NAMED IN COLUMN TWO IS NAMED IN COLUMN TWO IS NAMED IN
		Date: 9	2	rari
DECOMMISSIONING I	ገልፕል	Dute. /		7104
(Fill in all that apply		Depth	WELL SCHEMA	- / /
(x iii iii unuu uppi)	· )	(feet)	2,6	# 11.7
OVERDRILLING		(1001)	stick Rumov	YOU TO TO TO
Interval Drilled			Ramos	- Soil
Drilling Method(s)				1-4 3011
Borehole Dia. (in.)		decision and the second		11 1.
Temporary Casing Installed? (y/n)				
Depth temporary casing installed		5	A. VILE	
Casing type/dia. (in.)		***************************************	PULLE	Grout
Method of installing			PVC	10700
			WELL	·    ~
CASING PULLING				(1 1)
Method employed	Grout, Pull, Grait	10		
Casing retrieved (feet)	17.4 6+			
Casing type/dia. (in.)	2" PVC			
CASE PERFORATING				
Equipment used		15		
Number of perforations/foot			all in the second	Bottan
Size of perforations				1/100
Interval perforated				1 well
GROUTING		20		
Interval grouted (FBLS)	1-14854			
# of batches prepared	7.00			
For each batch record:				
Quantity of water used (gal.)	18			<i>Y</i> 1
Quantity of cement used (lbs.)	2-bags	25		1 /
Cement type	Type I Partland		Trace Control	
Quantity of bentonite used (lbs.)	10 pounds			NOT
Quantity of calcium chloride used (lbs.)	113/13/13/			1/1
Volume of grout prepared (gal.)				DRILLED
Volume of grout used (gal.)	Baal	30		
	J			4
COMMENTS: Depth to water =	6.25 Ft from TOC	* Sketch in all rel	levant decommissioning	data including
Knocked out end cap. Loaded c	asino with grout.	interval overdrille	ed, interval grouted, casin	ng left in hole,
Pulled casing. browted remo	cining borehole.	well stickup, etc.		
Added soil in top.	-			

Geologic North Star

WELL DECOMMISSIONING F	RECORD			•
Site Name: Seneca Army De	PAOT	Well ID:	MW48-1	
Site Location: SEAD 48	•	Driller:		David Lion
Drilling Company: Geologic North	Star	-	Scott Dillm	
	7100	Date: 9	121/10	W. T.
DECOM MISSIONING	DATA		1 - 1/1	(1.0 - 10.
DECOMMISSIONING (Fill in all that appl			WELL SCHEMAT	
(Fill ill all that appl	у)	Depth (feet)	2.4	110.2 Jule
OVERDRILLING		(leet)	stick u Ramove	TOP TO TA
Interval Drilled			Ramere	0
Drilling Method(s)			-	So'll
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)				
Depth temporary casing installed	MATERIAL CONTROL CONTR	5	- 161	
Casing type/dia. (in.)			PULLEA	A   . +
Method of installing			PUCT	Grout
			WELL	
CASING PULLING			-	Potton
Method employed	Grout, Pull, Grait	10	-	108
Casing retrieved (feet)	9.9 CL			/ Well:
Casing type/dia. (in.)	Z"PVC	Transition of the Control of the Con	***************************************	
()				
CASE PERFORATING				
Equipment used		15		7
Number of perforations/foot				
Size of perforations				/
Interval perforated				
•	Employment of the second of th		-	
GROUTING		20	1	
Interval grouted (FBLS)	1-7.5 /4			
# of batches prepared				
For each batch record:	The second secon			
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	2 6a95	25	***************************************	
Cement type	Type Y Portland	************	-	1/6
Quantity of bentonite used (lbs.)	10 pounds			AIOT
Quantity of calcium chloride used (lbs.)	112,730;543	·		1001
Volume of grout prepared (gal.)				DRILLED
Volume of grout used (gal.)	Tgal	30		
	132			
COMMENTS: Depth to water =	7.28 ft from TOC	* Sketch in all!	avant documentariani	
Knocked out end cap. Loaded	asing with a rout	interval overdrille	evant decommissioning da ed, interval grouted, casing	ata, including:
Pulled casing. Growted rem	aining borola le	well stickup, etc.	a, and the broaten, cashing	, was at note,
Added soil on top.				
	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER, THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER,	Control of the Contro		

Geologic North Star

Drilling Contractor

#### WELL DECOMMISSIONING RECORD Seneca Site Name: Well ID: Site Location: SEA D Steve Larance Driller: Drilling Company: Inspector: Ben McAilister Date: DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth (feet) stick up **OVERDRILLING** TOP TO TO Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING Method employed 10 Casing retrieved (feet) Well Casing type/dia. (in.) CASE PERFORATING Equipment used 15 Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) pounds NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 COMMENTS: Depth to water = 5.0 \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, browted remaining boreh well stickup, etc.

Geologic North Star

WELL DECOMMISSIONING RI	ECORD		•
Site Name: Seneca Army De	oot	Well ID:	MW48-3
Site Location: SEAD - 48			David Lion
Drilling Company: Geologic North	Star		Scott Dillman
J	<u> </u>	Date: 9	121/10
DECOM A ACCIONING D	ATA	1	
DECOMMISSIONING D			WELL SCHEMATIC*
(Fill in all that apply)		Depth	2.7' , 10
OVERDRILLING		(feet)	stick up Top TO TO
Interval Drilled		-0	
Drilling Method(s)			- Soil
Borehole Dia. (in.)		d-section (	
Temporary Casing Installed? (y/n)		- Anna Carlo	
Depth temporary casing installed		5	
Casing type/dia. (in.)			PULLED
Method of installing			PUC - Grout
Interior of histaring			PULLED Growt
CASING PULLING			
Method employed	V + 011/1 1	10	-
Casing retrieved (feet)	Grant, Pull, Grait		
Casing type/dia. (in.)	7" 216		<b></b> ' 1/1
Casing typortia. (iii.)	2146		<u> </u>
CASE PERFORATING			
Equipment used		15	
Number of perforations/foot		1	
Size of perforations			<b>→</b>   /
Interval perforated			<u> </u>
The political and the politica			<del> </del>   /
GROUTING		20	<b>→</b>  /
Interval grouted (FBLS)	1-73		<b></b>   / /
# of batches prepared			-
For each batch record:			
Quantity of water used (gal.)	18		- 1/
Quantity of cement used (lbs.)	2-6aq5	25	_
Cement type	Type Y Portland		<b>-</b>
Quantity of bentonite used (lbs.)	Type I for Hand		
Quantity of calcium chloride used (lbs.)	18 pounds		Not
Volume of grout prepared (gal.)			DRILLED
Volume of grout used (gal.)	-7	30	- $1$ $1$
	1991		_
COMMENTS: Depth to water = 7	.85 ft from TOC	* Skatch in all!	
Knocked out end cap. Loaded ca	sing with arout	interval overdrille	evant decommissioning data, including: d, interval grouted, casing left in hole,
Pulled casing. Growted rema	in the borola le	well stickup, etc.	-, a. Broated, vasing ten in note,
Added soil in top.	7		·

Geologic North Star

WELL DECOMMISSIONING	RECORD			•
Site Name: \$540 - 48	P114.44	Well ID:	MW48-4	
Site Location: Pitchblevel & Joven	0	Driller:	11100 70 1	
Drilling Company: Below NS		Inspector:		
state of the state		Date:		
DECOMMISSIONING	DATA	Date.	IVDI I OCUMNIA	TV O.t.
(Fill in all that app		Donth	WELL SCHEMA	TIC*
(1 III III ali tilat app	ny)	Depth (feet)		1 / 30 - 5
OVERDRILLING		(leet)		
Interval Drilled			-	
Drilling Method(s)				
Borehole Dia. (in.)				/  \
Temporary Casing Installed? (y/n)				K ( ) )
Depth temporary casing installed		2		
Casing type/dia. (in.)			-	
Method of installing				
C				
CASING PULLING		1		
Method employed	Pull	4	-	
Casing retrieved (feet)	11 56			
Casing type/dia. (in.)	2"puc			
				<b>*</b>
CASE PERFORATING		/		1/ / 5/
Equipment used		6		
Number of perforations/foot				
Size of perforations				
Interval perforated				
ODOLUTE IO		8		
GROUTING			<b>District Constitution</b>	
Interval grouted (FBLS)	7.31			
# of batches prepared				
For each batch record:	Deal			
Quantity of water used (gal.) Quantity of cement used (lbs.)	1054	10		
Cement type	1.00 (85			
Quantity of bentonite used (lbs.)	101/20			Y   /
Quantity of behichme used (lbs.)  Quantity of calcium chloride used (lbs.)	10/05			- A Part
Volume of grout prepared (gal.)				102/
Volume of grout prepared (gal.)	,	12		
COMMENTS:		* Classic in all	alamant dans a constitution	Associated B
part end cap, tremuse,	Pull		elevant decommissioning led, interval grouted, casi	
protecties code TOD aff	with and	well stickup, etc	-	
backfield, No water		7		

Drilling Contractor

Department Representative

Costy pulled
3 bollowers & concerepad with protection core

MW 48-5

#### Table 2-4 Well Decommissioning Record Well Abandonment Plan Seneca Army Depot Activity

WELL DECOMMISSIONING	RECORD		
Site Name: SEAP 48		Well ID:	uw 48-5
	ovose.	Driller:	
	ovoge.	-	
Drilling Company:		Inspector:	
		Date:	
DECOMMISSIONING		1	WELL SCHEMATIC*
(Fill in all that ap	ply)	Depth	
<u>OVERDRILLING</u>		(feet)	/ su = 4
Interval Drilled		,	· <b>-</b>
Drilling Method(s)			-
Borehole Dia. (in.)			<u> </u>
Temporary Casing Installed? (y/n)		7	<del>-</del>    /
Depth temporary casing installed			
Casing type/dia. (in.)			
Method of installing			
•	here e		
CASING PULLING			
Method employed	Pull		
Casing retrieved (feet)	1264		
Casing type/dia. (in.)	2000		
			$  /  \rangle  $
CASE PERFORATING		9	_    /   /  -
Equipment used			
Number of perforations/foot	·		_
Size of perforations			<u> </u>
Interval perforated	L	,	$\rightarrow$ $\downarrow$ $\downarrow$ $\downarrow$
<u>GROUTING</u>		1 12	<del>-</del>
Interval grouted (FBLS)	1354		
# of batches prepared	136		
For each batch record:			- $ / $ $ $
Quantity of water used (gal.)	18	1	<del>-</del>
Quantity of cement used (lbs.)	188.	15	
Cement type	powful #		
Quantity of bentonite used (lbs.)	10 lbs		
Quantity of calcium chloride used (lbs.)			Y I,/ I
Volume of grout prepared (gal.)		18	
Volume of grout used (gal.)		]	
		1	15.5
COMMENTS:			elevant decommissioning data, including:
. IT SKID	semme grait	interval overdrill well stickup, etc.	led, interval grouted, casing left in hole,
pull casing top off gri	101 Packey		
V 1			

Pull Casks
3Bollands
1 probedue cover & pad

Department Representative

EP PD

WELL DECOMMISSIONING R	RECORD			
Site Name: SEAD 48		Well ID:	MW-48-6	
	01/860	Driller:	11100 700	
Drilling Company: Gents & US	01002	Inspector:		
Drining company.				
DECOMB MAGNONING	D.1. (E.1.)	Date:		
DECOMMISSIONING		1	WELL SCHEMATIC*	() (
(Fill in all that apply	y)	Depth	1 /	20 race
<u>OVERDRILLING</u>		(feet)		
Interval Drilled				
Drilling Method(s)			- 1/	$1 \setminus 1$
Borehole Dia. (in.)				l.
Temporary Casing Installed? (y/n)			<del></del>	
Depth temporary casing installed		2		
Casing type/dia. (in.)				d / 1
Method of installing				/
CAODIO NILLA DIO				1 / 1
CASING PULLING	0.17	/1	_ 1	
Method employed Casing retrieved (feet)	PULL			
Casing type/dia. (in.)	1 // Ores		\ \\	
Casing type/dia. (iii.)	Z. Jac		V	1 / 60
CASE PERFORATING			1	1 > 181
Equipment used		1 6		1/4
Number of perforations/foot			<b>-</b>    /	1 / 1
Size of perforations			$\dashv$	
Interval perforated	***************************************		1	
		0		
<u>GROUTING</u>				/
Interval grouted (FBLS)	84			/
# of batches prepared				
For each batch record:	14			
Quantity of water used (gal.) Quantity of cement used (lbs.)	1/2	1 12		1184
Cement type	100.		Parish and the second s	-1
Quantity of bentonite used (lbs.)	porquecus			
Quantity of calcium chloride used (lbs.)	10165			
Volume of grout prepared (gal.)				
Volume of grout used (gal.)				
				1
COMMENTS:		* Sketch in all rel	levant decommissioning data, includ	ling
Derfurate end cop- temm		interval overdrille	ed, interval grouted, casing left in ho	ole,
pull pre cosy. Top off g		well stickup, etc.		
"COVEL" & BONGIES , RACKA	VI WIN SUN			

Drilling Contractor

Department Representative

Costry pulled 11ft Recovered 3 bollads & 1 probedue costs & pad.

D= (1.0)
Grab:
W= 544

WELL DECOMMISSIONING REC	CORD		
			148-7
Site Name: Seneca Army Dep. Site Location: SEAD-48	ot		MW48-7
Site Location: SEAD -48		Driller:	de Menze
Drilling Company: Geologic North	Star	Inspector:	Scott Dillman
	· 2000年中中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中	Date: 9	122/10
DECOMMISSIONING DA	TA		WELL SCHEMATIC*
(Fill in all that apply)		Depth	2.1 11.4
(2		(feet)	
OVERDRILLING		-0	Mumored
Interval Drilled			- Soil
Drilling Method(s)	112		
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)		_	
Depth temporary casing installed		_5	PULLED
Casing type/dia. (in.)			016 500
Method of installing			11. 2
			CARING
CASING PULLING		10	
Method employed	Grout, Pull, Growt	10	SCREEN BOTTOM
Casing retrieved (feet)	6.78t		1 0 0 0 Em 1 /1
Casing type/dia. (in.)	2" PVC		- OFF
			2 - 50
CASE PERFORATING		15	Graphale /
Equipment used			. — ' ' / ]
Number of perforations/foot			<del> </del> 1/1
Size of perforations			— / I
Interval perforated			-
GROUTING		20	<b>─</b>
Interval grouted (FBLS)	1-9.314		· / /
# of batches prepared			
For each batch record:			
Quantity of water used (gal.)	18		
Quantity of cement used (lbs.)	2-6095	25	
Cement type	Type Y Portland		
Quantity of bentonite used (lbs.)	10 pounds		Not
Quantity of calcium chloride used (lbs.)			DRILLED
Volume of grout prepared (gal.)			
Volume of grout used (gal.)	9gal.	_30	
	J		· · · · · · · · · · · · · · · · · · ·
COMMENTS: Depth to water = 7	7.71 ft from TOC	* Sketch in all r	relevant decommissioning data, including:
	sing with grout.		lled, interval grouted, casing left in hole,
Pulled casing. Growted rema		well stickup, etc	አ -
Added soil on top. Next to	BIDG ED 708.		

Geologic North Star
Drilling Contractor

WELL DECOMMISSIONING R	ECORD			
Site Name: Seneca Army De.	pot	Well ID:	MW48-8	
Site Location: SEAD-48		Driller:	see Man	WHEN PERSON AND DESCRIPTION OF THE PERSON AND PERSON AN
Drilling Company: G-eologic North	Star		Scott Dilln	
		Date: 9	1/22/10	lari
DECOMMISSIONING D	ΑΛΤΛ	Bute. 1	1 1 1	707 O.4.
(Fill in all that apply)		Depth	WELL SCHEMA	
(2 to the and apply)	,	(feet)	4	4 84
OVERDRILLING	,	0	stick Remove	70 TO TO
Interval Drilled			· receipt	Soil
Drilling Method(s)				1-7
Borehole Dia. (in.)			***************************************	/
Temporary Casing Installed? (y/n)		_		
Depth temporary casing installed		5	- PULLEL	<b>)</b>       .
Casing type/dia. (in.) Method of installing			0116	7 Forout
Interior of histatting			PUCT	. 4
CASING PULLING				
Method employed	Grout, Pull, Grait	10		
Casing retrieved (feet)	QC4			/ /
Casing type/dia. (in.)	Z"PVC		*	11
CASE PERFORATING				<b>Y</b>
Equipment used		15		
Number of perforations/foot				
Size of perforations				
Interval perforated				
GROUTING		20		
Interval grouted (FBLS)	1-1		Philippens	
# of batches prepared	- 6			
For each batch record:				
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	26095	25		
Cement type	Type Y Portland			
Quantity of bentonite used (lbs.)	18 pounds			NOT
Quantity of calcium chloride used (lbs.)			***************************************	DRILLED
Volume of grout prepared (gal.)		~ ~		DRICCED
Volume of grout used (gal.)	Sgal	_30_		
COMMENTS: Death to water = (	9			
	39 Ft from TOC	* Sketch in all rel	levant decommissioning d	ata, including:
Pulled casing. Growted rema	sing with grout.	interval overdrille well stickup, etc.	ed, interval grouted, casing	g left in hole,
Added soil on top.	ining vorehole.	onoxup, etc.		Homeway
				1

Geologic North Star

WELL DECOMMISSIONING RECORD	*,	•
Site Name: SENECH ARMY NEPOT	Well ID:	MW59-1
Site Location: 5EAA - 59		bavid Liphs
Drilling Company: Gedogic North star		Scott Nillman
Standard World	7	25/2011
DECOMMISSIONING DATA		
(Fill in all that apply)		WELL SCHEMATIC*
(Fill ill all that apply)	Depth (feet)	2 stickup Top To
OVERDRILLING	()	Removed TD
Interval Drilled		
Drilling Method(s)		- 9.3
Borehole Dia. (in.)		
Temporary Casing Installed? (y/n)		
Depth temporary casing installed	5	- Pulled Grow
Casing type/dia. (in.)		- INC Grow
Method of installing		- well
CASING PULLING		7.3
	10	2 113
Casing retrieved (feet)		_
Casing type/dia. (in.)		
CASE PERFORATING		
Equipment used		- 11
Number of perforations/foot Size of perforations		
Interval perforated		
GROUTING		7 1/1
Interval grouted (FBLS)		_ /
# of batches prepared		
For each batch record:		Not
Quantity of water used (gal.)		
Quantity of cement used (lbs.)		1 1000
Cement type Transl Part		
Quantity of bentonite used (lbs.)		
Quality of calcium chloride used (los.)		
Volume of grout prepared (gal.)		
Volume of grout used (gal.)		
Knocked out end plug. Loaded casing with grout. Pulled casing I recovered all, Topped		evant decommissioning data, including ed, interval grouted, casing left in hole,

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW 59-2
Site Name: Seneca Army Depot Site Location: SEAD 59	Driller: Steve Larance
Drilling Company: Geologic North Star	Inspector: Scott Dillman
Diffiling Company. Coolegate 1001 1 - 5 100	Date: 9/24/10
DECOMPTION TO THE PARTY	WELL SCHEMATIC*
DECOMMISSIONING DATA (Fill in all that apply)	Depth 170 13-2
(Fill ill gir mer abbid)	(feet)
OVERDRILLING	O SHIR UP TOP TOT
Interval Drilled	4 Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 Tables
Casing type/dia. (in.)	5 PULL & Growth
Method of installing	PUL
	WELD
CASING PULLING	
Method employed Grout, Poll, Grait	10
Casing retrieved (feet)	
Casing type/dia. (in.)	репа
	11.5 Batta
CASE PERFORATING	1 1 / Wel
Equipment used	15 ]
Number of perforations/foot	//
Size of perforations	
Interval perforated	
	20
GROUTING	7
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	25 -
Quantity of cement used (lbs.)	
Cement type  Type I Partlend	
Quantity of bentonite used (lbs.)	Not
Quantity of calcium chloride used (lbs.)	DRILLE
Volume of grout prepared (gal.) Volume of grout used (gal.)	30
Volume of grout used (gai.)	
COMMENTS: Death to water = 6, 96 ft from TOC	ZT
COMMENTS: Depth to water = 6. 16 ft from TOC Knocked out end cap. Loaded casing with grout.	
Priled casing. Granted remaining borehole.	well stickup, etc.
Added soil on top.	

Geologic North Star
Drilling Contractor

WELL DECOMMISSIONING R	ECORD			,	
Site Name: Seneca Army De	00±	Well ID:	MW59-4	4	
Site Location: SEAD 59	<del>701</del>	Driller:	loe men	THE RESERVE TO THE PERSON NAMED IN	
Drilling Company: G-eologic North	Star		Scott Dil		
	5 100	Date: 9	2 - 1	PROP	**************
DECOMMISSIONING I	)ATA		* /	mich	
(Fill in all that apply		Depth	WELL SCHEM	IATIC*	010
(1 III iii aii tiiat appiy		(feet)	Ι.	. 5 A	8.6 ft
OVERDRILLING		(1001)	541	ak up	TOP TO TO
Interval Drilled			1021	evea	4 Soil
Drilling Method(s)				4	7 361
Borehole Dia. (in.)	3 12 (10 miles)				1
Temporary Casing Installed? (y/n)				- 11	
Depth temporary casing installed		5	المام المام	LED	
Casing type/dia. (in.)			- 100	-	Grout
Method of installing			PUC		10700
			- WE	LC 12	Bottan
CASING PULLING					OR
Method employed	Grout, Pull, Grait	10			15011
Casing retrieved (feet)	8,6ft			1	well
Casing type/dia. (in.)	2" PVC				
CASE PERFORATING				V	
Equipment used		15			
Number of perforations/foot					/
Size of perforations					
Interval perforated				ľ	
GROUTING		20			
Interval grouted (FBLS)			-	V	1 1
# of batches prepared				4	. 1
For each batch record:			_		
Quantity of water used (gal.)	18			/	1 1
Quantity of cement used (lbs.)	26095	25	-		
Cement type	Type Y Portland	-			
Quantity of bentonite used (lbs.)	10 00000005			ľ	NOT
Quantity of calcium chloride used (lbs.)	113/1501583				
Volume of grout prepared (gal.)					DRILLED
Volume of grout used (gal.)	Real	30		Y	1
	, , , , , , , , , , , , , , , , , , , ,		( <del></del>	L	-
COMMENTS: Depth to water =	9.4 ft from TOC	* Sketch in all rel	levant decommissioni	ing data, inclu	ding:
	asing with grout.	interval overdrille	ed, interval grouted, c	asing left in h	ole,
Pulled casing. Growted rema	lining borehole.	well stickup, etc.			
Added soil in top.					1

Geologic North Star

**Drilling Contractor** 

WELL DECOMMISSIONING RECOR	D			•
Site Name: Seneca Army Depot		Well ID: /	nw 59-7	
Site Name: Seneca Acmy Depot Site Location: SEAD 59			feve Lara	mee
		THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	Scott Dillmo	
Drilling Company: Geologic North Star		Date: 9 /	124/10	<u> </u>
				C*
DECOMMISSIONING DATA		Depth	WELL SCHEMATI	1470
(Fill in all that apply)		(feet)	2.75	+ 17,1+4
OVEDDBH I INC		· O	stick of Ramove	TOPTOTO
OVERDRILLING			Mariera	4- 501
Interval Drilled				1
Drilling Method(s)  Borehole Dia. (in.)				•
Temporary Casing Installed? (y/n)				
Depth temporary casing installed		5	PULLED	
Casing type/dia. (in.)			POL	Growt
Method of installing			PUCT	112
Niction of historing			WELL	
CASING PULLING				
	t. Pull. Grait	10	anning transmiss	
Casing retrieved (feet)	54	CONTRACTOR OF THE PROPERTY OF	-	\mathrew{4}
Casing type/dia. (in.)	PVC			
Casing typoraid. (iii.)			12	1 - Bottom
CASE PERFORATING				1 of
Equipment used		15		/ Well
Number of perforations/foot				1 1
Size of perforations				
Interval perforated				
Linearing Community		7 .		
GROUTING		20		
Interval grouted (FBLS)	12ft		:	
# of batches prepared	1			
For each batch record:				/ .
Quantity of water used (gal.)	8	r3. eee		
Quantity of cement used (lbs.) 2-6	095	25		
	er Purtland			
	sunds			NOT
Quantity of calcium chloride used (lbs.)	,			DRILLED
Volume of grout prepared (gal.)			-	
Volume of grout used (gal.)	Zgal	_30		
			- Annual Control of the Control of t	<del>- полицания</del>
COMMENTS: Depth to water = 6.24	ft from TOC	* Sketch in all rele	levant decommissioning d	ata, including:
Knocked out end cap. Loaded casing		interval overdrille	ed, interval grouted, casing	g left in hole,
Pulled casing. Granted remaining	borehole.	well stickup, etc.		
Added soil in top.				

Geologic North Star

WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW 59-8
Site Location: SEAD 59	Driller: Steve Larance
Drilling Company: G-eologic North Star	Inspector: Scott Dillman
Diffiling Company. 5 5 (5)	Date: 9/24/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
DECOMMISSIONING DATA  (Fill in all that apply)	a with
(Fill iii aii mat appry)	(feet)
OVERDRILLING	O Stick up Top TO TO
Interval Drilled	4 Soil
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	5 DULLED
Casing type/dia. (in.)	5 PULLED Growt
Method of installing	WELL HE
	WE
CASING PULLING	
Method employed Front, Poll, Grait	10 ]
Casing retrieved (feet)	Botton
Casing type/dia. (in.)	ud of
CASE PERFORATING	15   Well
Equipment used	13
Number of perforations/foot	
Size of perforations	
Interval perforated	-    /
GROUTING	20 -
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of water used (gair.)  Quantity of cement used (lbs.)  26aq\$	25
Cement type Type I for Hond	
Quantity of bentonite used (lbs.)	Not
Quantity of calcium chloride used (lbs.)	DRILLES
Volume of grout prepared (gal.)	
Volume of grout used (gal.) [3 aal,	30
J	nd recommend the second
COMMENTS: Depth to water = 7.24 ft from TOC	* Sketch in all relevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout.	interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Granted remaining borehole.	well stickup, etc.
Added soil on top.	

Geologic North Star

WELL DECOMMISSIONING RECORD	
Site Name: SENECA ARMY DEPOT	Well ID: MW63-1
Site Location: 5EAA 63	Driller: Scatt Breeds
Drilling Company: Geologic North Star	Inspector: Scott Allman
	Date: 9/14/10
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 10.
	(feet)
OVERDRILLING	o sticker TD
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	Grout Grout
Temporary Casing Installed? (y/n) Depth temporary casing installed	
Casing type/dia. (in.)	Pulled to
Method of installing	PUC
Interior of marring	
CASING PULLING	(0.51,00)
Method employed Grant Pull, brown	10
Casing retrieved (feet)	of well
Casing type/dia. (in.)	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	_ /NOT
Size of perforations	- DRILLED
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.) 2 500 g	
Cement type Type 9	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Depth to water = 8.4 from TOC	* Skatch in all relevant decommissioning data including
Knock off end blug. Filled casing with grout.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Filled (Purajhing hale with	well stickup, etc.
Grant. Added Soil on tot.	

#### WELL DECOMMISSIONING RECORD ARMY SENECA DEPOT Well ID: Site Name: Site Location: SEAD Driller: Breeds Drilling Company: Geologic North Star Inspector: 34 Tt Willman Date: DECOMMISSIONING DATA WELL SCHEMATIC\* (Fill in all that apply) Depth 1.9' (feet) shale-P OVERDRILLING Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) Method of installing Bollon CASING PULLING Method employed we V Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING Equipment used Number of perforations/foot Size of perforations Interval perforated GROUTING NOT Interval grouted (FBLS) DRILLED # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) Volume of grout prepared (gal.) Volume of grout used (gal.) COMMENTS: beth \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc. remaining

Geologic North Star

Drilling Contractor

WELL DECOMMISSIONING RECORD	,
Site Name: SENECA ARMY BEPOT	Well ID: MW63-3
Site Location: SEAD 63	Driller: Sct Breeds
Drilling Company: Geologic North Star	Inspector: 5 cott Dillman
Standard Contract of the Contr	Date: 9/14/10
DECOMMISSIONING DATA	
(Fill in all that apply)	WELL SCHEMATIC* Depth
(Till ill all app.g)	Depth (feet) Stickup Top to
OVERDRILLING	1.5 9.5
Interval Drilled	501
Drilling Method(s)	
Borehole Dia. (in.)	5 Pulled Leson
Temporary Casing Installed? (y/n)	1 1 1
Depth temporary casing installed Casing type/dia. (in.)	Poc
Method of installing	- WENT
interiod of instanting	- CAND
CASING PULLING	Bottom
Method employed	10 - Juell
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE DEDEOD ATING	
CASE PERFORATING Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	- Not
	Desired
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record: Quantity of water used (gal.)	
Quantity of water used (gar.)  Quantity of cement used (lbs.)  2 bog 5	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
	¬
COMMENTS: Depth To water 6.96 From 10C	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Knocked off end plug. Filed casing with Growt.	well stickup, etc.
Grout. Added soil to around level	1

Crologic North Star
Drilling Contractor

WELL DECOMMISSIONING RE	CORD		•
Site Name: Seneca Army Dep	ot	Well ID:	MW67-1
Site Location: SEAD 67			cott Breeds
Drilling Company: G-Cologic North	Star		Scott Dillman
		Date: 9	116/10
DECOMMISSIONING DA	<b>ЛТ</b> Л		,
(Fill in all that apply)	AIA.	Depth	WELL SCHEMATIC*
(1 in in an that apply)		(feet)	1.8" 1 13
OVERDRILLING		(1001)	Stick up Top TO TI
Interval Drilled			4 Soil
Drilling Method(s)			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)		_	
Depth temporary casing installed		5	D. V. LED
Casing type/dia. (in.)			DUC - Growt
Method of installing			PULLED & Grout
			WELD
CASING PULLING			
Method employed	Grout, Pull, Grait	10	
Casing retrieved (feet)	13 ft		
Casing type/dia. (in.)	2" PVC		Bottom
			- New
CASE PERFORATING		15	- weu
Equipment used	-	15	
Number of perforations/foot			
Size of perforations			
Interval perforated			/
GROUTING		20	-
Interval grouted (FBLS)	1-11 5-01		<del> </del>  /
# of batches prepared	1-11.5A		- / /
For each batch record:			
Quantity of water used (gal.)	18		
Quantity of cement used (lbs.)	2-bags	25	-
Cement type	Type I Portland	-	- //
Quantity of bentonite used (lbs.)	10 pounds		NOT
Quantity of calcium chloride used (lbs.)	JIS POGRAS		
Volume of grout prepared (gal.)			DRILLEL
Volume of grout used (gal.)	12 gal	30	<del>- </del>  /
	<u> </u>		
COMMENTS: Depth to water = 7	.18 ft from TOC	* Sketch in all rele	evant decommissioning data, including:
	sing with grout.	interval overdrille	d, interval grouted, casing left in hole,
	ning borehole.	well stickup, etc.	
Added soil in top.	J		

Geologic North Star
Drilling Contractor

#### WELL DECOMMISSIONING RECORD Well ID: Seneca Site Name: Scott Breeds Driller: SEA D Site Location: Inspector: Scott Dillman Drilling Company: G-Cologic North Date: 9/16/10 **WELL SCHEMATIC\*** DECOMMISSIONING DATA (Fill in all that apply) Depth 0.9 12.9 (feet) stick up Rumoved TOP TO TO OVERDRILLING Soil Interval Drilled Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Grout Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) Boiton CASE PERFORATING of Equipment used Well Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) ft from TOC \* Sketch in all relevant decommissioning data, including: casing with grout. interval overdrilled, interval grouted, casing left in hole, well stickup, etc. Added

Geologic North Star

#### WELL DECOMMISSIONING RECORD Well ID: Seneca Site Name: Scott Breeds Driller: SEA D Site Location: Inspector: . Drilling Company: North Date: 10 WELL SCHEMATIC\* **DECOMMISSIONING DATA** (Fill in all that apply) Depth 1.5 (feet) stick up TOP TO TO OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) PULLED Depth temporary casing installed Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING 10 Method employed Casing retrieved (feet) Casing type/dia. (in.) Botton oF CASE PERFORATING 15 well Equipment used Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Ouantity of water used (gal.) Quantity of cement used (lbs.) Cement type NOT Quantity of bentonite used (lbs.) Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) 30 Volume of grout used (gal.) COMMENTS: Depth to water \* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, Knocked out end cap. Loaded well stickup, etc.

Geologic North Star

Drilling Contractor

Added

WELL DECOMMISSIONING RECORD				
			MW 700-1	
Site Name: Seneca Army Depot			THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	
Site Location: SEAD			scott Breeds	_
Drilling Company: 6-Eologic North Star			Scott Dillman	4
		Date: 9	116/10	
DECOMMISSIONING DATA	1		WELL SCHEMATIC	* ,,2
(Fill in all that apply)		Depth	1,3	11.8
		(feet)	stick up Ramoved	TOP TO TO
OVERDRILLING		- 0	Rumoved	4- Soil
Interval Drilled			/	H-4 3011
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		5	161	
Depth temporary casing installed			- PULLER	Grout
Casing type/dia. (in.)			PUC	Grow
Method of installing			WELL	
				( 1 1)
CASING PULLING	01614	10		11 11
	Pull, Grait		_	1 Bother
Cusing for to the control of the con	10			The state of the s
Casing type/dia. (in.)	10			1 / 0 //
CASE PEDEOD ATING			-	/ Well
CASE PERFORATING Equipment used		15		1/1
Number of perforations/foot		entral and the state of the sta		
Size of perforations				$X \perp$
Interval perforated	——————————————————————————————————————			
interval periorated		7.0		
GROUTING		20		1/1
Interval grouted (FBLS)	0.5			
# of batches prepared				1/
For each batch record:				
Quantity of water used (gal.)		3/-		1 1
Quantity of cement used (lbs.) 2-6au		25		
Cement type Type	Portland			1/4
Quantity of bentonite used (lbs.)	inds		politica (Circumo	NOT
Quantity of calcium chloride used (lbs.)			***************************************	DRILLED
Volume of grout prepared (gal.)		20	-	
Volume of grout used (gal.)	ga \	30		
CONTROL A CALLERY	Ci O = -	1.		
	ft from TOC		relevant decommissioning da	-
Knocked out end cap. Loaded casing wi		well stickup, e	rilled, interval grouted, casing etc.	icit ili noic,
Piled casing. Grated remaining!	porehale.	siionap, c		
Added soil on top.				

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD	
AA DDD DD C COLLEGE	
O' Nome: Severa Army Depot	Well ID: 10-3
Site Name.	Driller: Scott Breeds
Site Location: SEAD 70 J	Inspector: Scott Dillonan
Drilling Company: Great gec North Stan	Date: 9/16/10
	WELL SCHEMATIC*
DECOMMISSIONING DATA	Depth strickup
(Fill in all that apply)	(feet)
	gent >
OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n) Depth temporary casing installed	5 7
Casing type/dia. (in.)	- No
Method of installing	- and
Niction of histaring	(6,7, 4)
CASING PULLING	- forna
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
TO TO THE MENT OF	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforated	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Well abandoned previously?	* Sketch in all relevant decommissioning data, including:
	interval overdrilled, interval grouted, casing left in hole,
orden por con acc	well stickup, etc.
	OUT,
Lind well casing , logged off hole with gre	

Becogic North Star Drilling Contractor

#### WELL DECOMMISSIONING RECORD Seneca Site Name: Well ID: Site Location: SEA D Driller: Drilling Company: Inspector: Date: 6/10 DECOMMISSIONING DATA WELL SCHEMATIC\* 10.0 (Fill in all that apply) Depth 1.4 (feet) OVERDRILLING Stick up TOP TO TA Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) 5 Depth temporary casing installed PULLED Casing type/dia. (in.) PUC Method of installing WELL CASING PULLING Method employed 10 Casing retrieved (feet) Casing type/dia. (in.) of CASE PERFORATING Well Equipment used 15 Number of perforations/foot Size of perforations Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) Cement type Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 10 COMMENTS: Depth to water ft from TOC \* Sketch in all relevant decommissioning data, including: Knocked out end cap. Loade. interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star

**Drilling Contractor** 



WELL DECOMMISSIONING RECORD	
Site Name: Seneca Army Depot	Well ID: MW 71-1
Site Location: SEAD 71	Driller: Steve Larance
Drilling Company: Geologic North Star	Inspector: Scott Dillman
7	Date: 9/24/10
DECOMMISSIONING DATA	
(Fill in all that apply)	
(	(feet) PVC 9.0 ft 9.36
OVERDRILLING	O STORY TOP TO TO
Interval Drilled	
Drilling Method(s)	(2)(6)
Borehole Dia. (in.)	with t kink Box
Temporary Casing Installed? (y/n)	- 7
Depth temporary casing installed	5 PANTED 1
Casing type/dia. (in.)	- PUC - Growt
Method of installing	- PUC Growt
	- WELL
CASING PULLING	Growted
Method employed Great, Poil, Great	- Start
Casing retrieved (feet)	93' Bottom
Casing type/dia. (in.)	ot
CASE PERFORATING	Well
Equipment used	15 - 1
Number of perforations/foot	
Size of perforations	//
Interval perforated	
GROUTING	20 = //
Interval grouted (FBLS)	
# of batches prepared	: /
For each batch record:	
Quantity of compat and (11-)	25
Type Tor Hand	
Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)	Not
Volume of grout prepared (gal.)	- DRIVED
Volume of annut word (1)	30
volume of grout used (gail.)	
COMMENTS: Depth to water = ft from TOC	* Sheet in all all
Knocked out end cap. Loaded casing with grout.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,
Pulled casing. Grated remaining borehole.	well stickup, etc.
Added soil on top. Wouldn't pull - well grouted	1
Geologic North Star in Mate.	

### Table 2-4 Well Decommissioning Record Well Abandonment Plan

Seneca Army Depot Activity

WELL DECOMMISSIONING	RECORD		•
Site Name: Seneca Army	Sepot	Well ID:	MW71-2
Site Location: SEAD 71		Driller:	steve Larance
Drilling Company: G-Cologic Nor	th Star		Scott Dillman
7			1/24/10
DECOMMISSIONIN	IG DATA		WELL SCHEMATIC*
(Fill in all that a		Depth	
( a a a		(feet)	PLUSH MOUNT 6.6FH
OVERDRILLING		.0	No stick up 1 Top TO TO
Interval Drilled			
Drilling Method(s)			gox gox
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)		_	W. FOUNT
Depth temporary casing installed		5	- Putter
Casing type/dia. (in.)			PNC > Grout
Method of installing			
			- WELL BOTTOM
CASING PULLING	garantee and the same and the s		would / of
Method employed	Grout, Pull, Grait	_10	NOT / Well
Casing retrieved (feet)	0.0		PUL
Casing type/dia. (in.)	2" PVC		GROVED 4.
CASE PERFORATING			- 10 / l
Equipment used		15	PLACE (
Number of perforations/foot			. — , , , , , , , , , , , , , , , , , ,
Size of perforations			
Interval perforated			- $        -$
<u>GROUTING</u>		20	
Interval grouted (FBLS) # of batches prepared	0-6,6ft		_
For each batch record:			
Quantity of water used (gal.)	[18]		
Quantity of water used (gar.)		25	
Cement type	2-6ag 5		
Quantity of bentonite used (lbs.)	Type Y Portland		
Quantity of calcium chloride used (lbs.)	10 600-542		Not
Volume of grout prepared (gal.)	-		DRILLED
Volume of grout used (gal.)		30	
		~~~	
COMMENTS: Depth to water	= ft from TOC	* Skatch in all	slavous documentation to the same as
Knocked out end cap. Loaded		interval overdrill	elevant decommissioning data, including: led, interval grouted, casing left in hole,
	maining borehole.	well stickup, etc.	. Branca, owning that at more,
	rb box in alace.		
Geologic North Star	Filled with grout	•	

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY NEPOT	Well ID: M W 71-3
Site Location: 5EAA - 71	Driller: David Light
Drilling Company: Geologic North star	Inspector: Scott Dillean
	Date: 1/25/2011
DECOMMISSIONING DATA	WELL SCHEMATIC*
(Fill in all that apply)	Depth 1.5 check 18
(c in in an ana app.y)	Depth 1.5 stickup (feet) Removed Top Te
OVERDRILLING	Removed TD
Interval Drilled	
Drilling Method(s)	7"
Borehole Dia. (in.)	- PNC . /
Temporary Casing Installed? (y/n)	5 Poolin
Depth temporary casing installed	5 Casing Grow
Casing type/dia. (in.)	1
Method of installing	Survey 6.1
CASING PULLING	10
Method employed Knock, goot, 1-11, goot	
Casing retrieved (feet)	
Casing type/dia. (in.)	
CASE DEDECOR ATING	
CASE PERFORATING Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	/ NOT
Interval grouted (FBLS)	
# of batches prepared	] Dr. 1/eq
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (los.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Proth to water = 7.28. It. forth Knocked out end plug: Loaded casing with great Pulled calling. Recuered all. Topsed off great to sur face.	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
GROUNDIE North Star	4

Department Representative

WELL DECOMMISSIONING RECORD		•		•
Site Name: Seneca Army Depot		Well ID:	MW71-4	
Site Location: SEAD 7/			Steve Lara	MOD
Drilling Company: Geologic North Star		Contract of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the last of the la	Scott Dillma	
3		Date:	7/24/10	
DECOMMISSIONING DATA			WELL SCHEMATION	***
(Fill in all that apply)	1	Depth	- /	n : G
		(feet)	2,21	al Lang
OVERDRILLING		.0	stick up Ramoved	TOP TO TI
Interval Drilled			1274081	4 Soil
Drilling Method(s)			- And and a second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco	1
Borehole Dia. (in.)			Grant	Pièce ob
Temporary Casing Installed? (y/n) Depth temporary casing installed		-	Filled	K casing sereous
Casing type/dia. (in.)			- PULLED	
Method of installing			PUC	Grout
			WELL	bokeoff
CASING PULLING				Broke Brit
Method employed	164	10		wedgelin
Casing retrieved (feet)			-	
Casing type/dia. (in.)	-		,	
CASE PERFORATING			-	Grout
Equipment used		15		4-01001
Number of perforations/foot				
Size of perforations	-			
Interval perforated				
GROUTING		20	12.7	Botton
Interval grouted (FBLS)	ZEI-		Total Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the	1.54
# of batches prepared				/ Well
For each batch record:			***************************************	/
Quantity of water used (gal.)  Quantity of cement used (lbs.)		3 =		
	<del>,  </del>	25		/
Open the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of	thend			
Quantity of calcium chloride used (lbs.)	ا ع			NOT
Volume of grout prepared (gal.)				DRILLED
Volume of grout used (gal.)		30		
1 13 32				
COMMENTS: Depth to water = 12,80 ftf	rom TOC	* Sketch in all	annu danama	
snocked out end cap. Loaded casing with		interval overdrille	evant decommissioning data, ed, interval grouted, casing left	including:
fulled casing. Growted remaining bore		well stickup, etc.	- Board, castill lett	· ··· IUIC,
Added soil in top. Bottom of the screen	broke off.	,	-	er dictional de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución de la constitución
-colonia Al- II Ct - walked in hole	Added	+		

through screen, Department Representative
Howe water table Drilling Contractor

WELL DECOMMISSIONING RECORD	
Site Name: SENECA ARMY DEPOT	Well ID: MJ 119-1
	Driller: David Lions
Site Location: 5EAD 119	Inspector: Seatt Village
Drilling Company: Cosologic North Stor	/ /
	Date: 1/27/2011
DECOMMISSIONING DATA (Fill in all that apply)  OVERDRILLING Interval Drilled	Depth (feet) 2.5 4 chuld 121.5
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n) Depth temporary casing installed	5 = 1
Casing type/dia. (in.)	Pulled Grand
Method of installing	- Com
CASING PULLING	L 10 700 M
Method employed Knode, craft, fell, gran	T
Casing retrieved (feet)	[ Consisted
Casing type/dia. (in.)	
CASE PERFORATING	16
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	20 =
GROUTING	20 = 719
Interval grouted (FBLS) O- (9 f+	
# of batches prepared	
For each batch record:	- 115
Quantity of water used (gal.)	- Po((a)
Quantity of cement used (lbs.)	Driles 3
Cement type	
Quantity of bentonite used (lbs.)	5
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.) Volume of grout used (gal.)	
volume of grout used (gai.)	
COMMENTS: Death to water = 3.5 est it is Knocked out and alva . Leaded casing will growt. Pulled caking. Topped aft g sail on top.	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
Oscalogic Northstor	Department Representative

Site Name: SENECH ARMY NEFOT Well ID: MW 119-2  Site Location: SEAN - 119  Driller: David Long  Inspector: Scatt Nillman  Date: 1/27/201/  DECOMMISSIONING DATA  (Fill in all that apply)  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic North Star  Depth  Company: Gedegic	
Drilling Company: Gedogic North star Inspector: Sent Dilling A  Decompany: Decompany: Decompany: Decompany: Decompany: Decompany: Decompany: Decompany: Decompany: Decompany: Depth 1.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25   Depth 2.25	
Drilling Company: Gedogic North star Inspector: Scatt Milman Date: 1/27/2011  DECOMMISSIONING DATA WELL SCHEMATIC*  (Fill in all that apply) Depth 2.25-10-10-10-10-10-10-10-10-10-10-10-10-10-	
Drilling Company: Gedogic North star Inspector: Scatt Milman Date: 1/27/2011  DECOMMISSIONING DATA WELL SCHEMATIC*  (Fill in all that apply) Depth 2.25-10-10-10-10-10-10-10-10-10-10-10-10-10-	
Date: 1/27/28/1/ DECOMMISSIONING DATA  (Fill in all that apply)  Depth  Depth  Depth  Depth  Depth  Depth	
DECOMMISSIONING DATA  (Fill in all that apply)  WELL SCHEMATIC*  Depth  Depth	
(Fill in all that apply) Depth 2.25 class	
(Till ill all dial apply)	
	TOP TO
OVERDRILLING D Removed	TD
Interval Drilled	
Drilling Method(s)	24.25
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Pouth townson sering installed	
Casing type/dia. (in.)	Grow
Method of installing	-
CASING PULLING	
CASING PULLING	
Mathedama and J. La . e at 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Casing retrieved (feet)	
Casing type/dia. (in.)	
[ (a) 3]	
CASE PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
	9
GROUTING	4
Interval grouted (FBLS) 0-19 ft	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of water used (gal.) Quantity of cement used (lbs.)  Coment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of Comment type  The Land State of C	
Conton type	
Quantity of bentonite used (lbs.)	
Quantity of Calcium Chloride used (los.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Apoth to we ter = 3.85 ft. for The Sketch in all relevant decommissioning data including	
Section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the sectio	
timal effective and	34
grants ruled cashing. Henrey all. Topped	
THE NAME WITH STREET	
Geologic North Star	
Drilling Contractor Department Representative	

WELL DECOMMISSIONING RECORD	
Site Name: SENECH ARMY NEPOT	Well ID: MW (19-3
	Driller: David Libus
Site Location: SEAD - 119 Drilling Company: Geologic North star	1 8 1/
Drilling Company: Gedogic North Star	
	Date: 1/26/2011
DECOMMISSIONING DATA (Fill in all that apply)	Depth (feet) Removed TD
	(feet) Removed Top To
OVERDRILLING	
Interval Drilled	16.1
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	Growt
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
	10 = Pulled
Casing retrieved (leet)	- 2 1
Casing type/dia. (in.)	Proc. mg
CASE PERFORATING	15 Profing
Equipment used	15 - 100
Number of perforations/foot	14.154
Size of perforations	
Interval perforated	
Inc. The postorator	
GROUTING	20 - 1
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	TOUT
Quantity of water used (gal.)	DATLE
Quantity of cement used (lbs.) Zbaus	
Cement type Type Partland	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	
COMMENTS: Apth to water = 3.41. At. four	Sketch in all relevant decommissioning data, including:
Knocked out end slua: Loaded casing with	interval overdrilled, interval grouted, casing left in hole,
grants Pulled against Recovered all casing	well stickup, etc.
Tone off want?	
Geologic North Star	
Drilling Contractor	Department Representative

WELL DECOMMISSIONING RECORD				
Site Name: Seneca Army Depot	Well ID: /	NW12/C-3		
Site Location: SEAD 121 E	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	off Breeds		
Drilling Company: G-eologic North Star		Scott Dillman		
7	Date: 9/23/10			
DECOMMISSIONING DATA		VELL SCHEMATIC*		
(Fill in all that apply)	Depth	1 2 // / /		
(2 11 11 11 11 11 11 11 11 11 11 11 11 11	(feet)	1. ) - 1 (0.) 5		
OVERDRILLING	0	Stick up Top TO TD		
Interval Drilled		- Soil		
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)	_			
Depth temporary casing installed	5	PULLED		
Casing type/dia. (in.)		- PUC - Grout		
Method of installing		- WELL ET		
CASING PULLING				
	10	Botton		
Method employed  Casing retrieved (feet)		- I boll		
Casing type/dia. (in.)		- Well		
casing typo dia. (iii.)		- / /		
CASE PERFORATING		- 1/1		
Equipment used	15	//		
Number of perforations/foot		- 1/		
Size of perforations				
Interval perforated				
	7 0			
GROUTING	20			
Interval grouted (FBLS)				
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)	25			
Quantity of cement used (lbs.) 2-6aq5	2)			
Cement type  Quantity of bentonite used (lbs.)				
Quantity of bentonite used (lbs.)  Quantity of calcium chloride used (lbs.)		Not		
Volume of grout prepared (gal.)		DRILLED		
Values of secutional (call)	30	$\rightarrow$ $\Gamma$ $\Gamma$		
volume of grout used (gai.)				
COMMENTS: Depth to water = 7.90 ft from TOC Knocked out end cap. Loaded casing with grout. Pulled casing. brouted remaining borehole. Added soil in top.	* Sketch in all relevinterval overdrilled, well stickup, etc.	vant decommissioning data, including: , interval grouted, casing left in hole,		

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING	RECORD		•
Site Name: Seneca Army A	A not	Well ID:	MW 121C=4
Site Name: Seneca Acmy Depot Site Location: SEAD 121C		Driller:	Le Menzel
	h Stac		Scott Dillman
Drilling Company: Geologic North Star		Date: 9	1 1
DECOMMISSIONING	CDATA	Date. /	
(Fill in all that ap		Depth	WELL SCHEMATIC*
(1 m m an anat ap	PU)	(feet)	1.4 /
OVERDRILLING		0	Stick up Top TO TD
Interval Drilled			4/50/1
Drilling Method(s)			Concrete
Borehole Dia. (in.)			
Temporary Casing Installed? (y/n)			
Depth temporary casing installed		5	- PULLED +
Casing type/dia. (in.)			- PUC P Grout
Method of installing			- WELL CHT
CASING PULLING			
Method employed	Grout, Pull, Grait	10	Bottone
Casing retrieved (feet)	9.64 Ft		·
Casing type/dia. (in.)	Z"PVC		J Well
		Life Calculation	-
CASE PERFORATING			—
Equipment used		15	
Number of perforations/foot			
Size of perforations		Na principal de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la co	
Interval perforated			
GROUTING		20	$\rightarrow$ $1/$ $1$
Interval grouted (FBLS)	100		
# of batches prepared	1-8,24		
For each batch record:	<u> </u>		$\rightarrow$ $\downarrow$ $\downarrow$
Quantity of water used (gal.)	18		<u> </u>
Quantity of cement used (lbs.)	2-6a95	25	<del>-</del>    /
Cement type	Type I Portland		
Quantity of bentonite used (lbs.)	10 pounds		Not
Quantity of calcium chloride used (lbs.)			DRILLED
Volume of grout prepared (gal.)			DALCCED
Volume of grout used (gal.)	8 gal	30	
COMMENTS: A	11.27/ 0:0		
COMMENTS: Depth to water =		* Sketch in all re	elevant decommissioning data, including:
Knocked out end cap. Loaded casing with grout. Rilled casing. Growted remaining borehole.		interval overdrill well stickup, etc.	ed, interval grouted, casing left in hole,
Added soil on top.	naining borehole.	men snekup, etc.	
THE SUIT ON TOPA			

Department Representative

Geologic North Star Drilling Contractor

WELL DECOMMISSIONING RECORD		
Site Name: Seneca Army Depot	Well ID: MW/2/C-5	
Site Location: SEAD ~ 121C	Driller: Joe Menzel	_
Drilling Company: Geologic North Star	Inspector: Scott Dillman	_
J	Date: 9/22/10	-
DECOMMISSIONING DATA	WELL SCHEMATIC*	_
(Fill in all that apply)	Depth 15 10	
, , , , , , , , , , , , , , , , , , , ,	(feet)	7
OVERDRILLING	O SHIR UP TOP TO TO	۵
Interval Drilled	4 50/14	٦
Drilling Method(s)	Course	Ĉ
Borehole Dia. (in.)		
Temporary Casing Installed? (y/n)		-
Depth temporary casing installed	5 PULLED	
Casing type/dia. (in.) Method of installing	- DUC 9 Grow.	
Wethod of histarning	WELL ST	-
CASING PULLING		
Method employed Grout, Poll, Growt	10 - TOOH	
Casing retrieved (feet)	11111	to the last
Casing type/dia. (in.)	- ' / of	Tables less
	- C well	-
CASE PERFORATING		Total Control
Equipment used	15 - 1/1	
Number of perforations/foot		-
Size of perforations		
Interval perforated		Des Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Constitution of the Co
	20 7	
GROUTING	20	-
Interval grouted (FBLS) $1 - 8.7\ell_{+}$	. (	Onterferense
# of batches prepared		- Company
For each batch record: Quantity of water used (gal.)		I
	25	-
		Taxable of the last
Quantity of hentonite used (lbs.)		-
Quantity of calcium chloride used (lbs.)	Not	Name of Street
Volume of grout prepared (gal.)	DRILLEL	X
Volume of grout used (gal)	30 - 1/	
1 gal		-
COMMENTS: Depth to water = NA ft from TOC	# Church in all	Manage Arterio
Knocked out end cap. Loaded casing with grout.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole,	
Pylled casing. Grated remaining borehole.	well stickup, etc.	Managaran,
Added soil on top.	·	Designation.

Geologic North Star

### WELL DECOMMISSIONING RECORD

WEEL DECOMMISSIONING RECORD				•
Site Name: Seneca Army Depot		Well ID:	MW/Z/C	-6
Site Location: SEAD 1212	AND SHARES	Driller:	Joe Menz	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER, THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER,
Drilling Company: Geologic North Star			Scott Dillm	
Jiming company. C Signific 7007 1-C 3 127		Date: 9	1 h2/10	Δ/1
DECOMMISSIONING DATA		Date.		T/7±
(Fill in all that apply)		Depth	WELL SCHEMAT	1C* 98
(Fill ill all that apply)		(feet)	1,2	the In the
OVERDRILLING		(1001)	stick of Ramove	TOP TO TO
Interval Drilled	<del></del>		100,000	4 Soils
Drilling Method(s)				Concrete
Borehole Dia. (in.)				1 Process
Temporary Casing Installed? (y/n)				
Depth temporary casing installed		5	ONLEA	
Casing type/dia. (in.)		William Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of th	PULLED PUC	Grout
Method of installing			WELL	1 2
			MELO	
CASING PULLING		: 6	***************************************	Botton
Method employed Grout, Po	11,600st	10		1 of
Casing retrieved (feet)	<u>+</u>			/ Well
Casing type/dia. (in.)				
CASE PERFORATING				
Equipment used	<del></del>	15		
Number of perforations/foot			-	
Size of perforations				
Interval perforated				/
The particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particular particu				
GROUTING		20	and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	<b>/</b> /
Interval grouted (FBLS)	3			
# of batches prepared				/
For each batch record:			***************************************	
Quantity of water used (gal.)		-	<u></u>	
Quantity of cement used (lbs.) 2-6a95		25		
Cement type Type Type Tr				
Quantity of bentonite used (lbs.)	Ps			NOT
Quantity of calcium chloride used (lbs.)				DRILLED
Volume of grout prepared (gal.)		20	32	
Volume of grout used (gal.)	X	30	economic graphs	
COMMENTS: Depth to water = 6.86? ft	0 == 0			
	from TOC	* Sketch in all r	relevant decommissioning d	ata, including:
Knocked out end cap. Loaded casing with grout. Pulled casing. Growted remaining borehole.		well stickup, etc	lled, interval grouted, casing	g ieπ in hole,
Added soil on top.	engle.		*	
THE TOTAL OF TOPA				

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WELL DECOMMISSIONING F	RECORD			•
Site Name: Seneca Army De	ent	Well ID:	MW 122B.	
Site Location: SEAD 12-2 B	7	The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa	steve Lar	
Drilling Company: Geologic North	Star		Scott Dillm	
J		Date: 9	124/10	e. / [
DECOMMISSIONING	DATA		WELL SCHEMAT	7C±
(Fill in all that appl		Depth		18.3f
(I in in an app.	,,	(feet)	1.9.	8
OVERDRILLING		0	stick a	TOP TO TO
Interval Drilled				4 Soil
Drilling Method(s)				1
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)		_		
Depth temporary casing installed		_5	PULLER	
Casing type/dia. (in.)	***************************************		- PVC	Grout
Method of installing			WELL	2 11.0
CARDIC DIE I DIC				
CASING PULLING		10	1200	54zen
Method employed	Grout, Pull, Grait	10	8 H.	
Casing retrieved (feet)	10 f+ 2" PVC	450	1 50r	28V -
Casing type/dia. (in.)	2 rvc			GROUT
CASE PERFORATING				
Equipment used		15		
Number of perforations/foot		1	-	
Size of perforations				BoTTOM
Interval perforated			16	.9 J. E
	Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Contro			1/1
GROUTING		20		/ well
Interval grouted (FBLS)	1-16.4 F.L		and the second	
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)	18			
Quantity of cement used (lbs.)	26095	25		
Cement type	Type Y Partland			
Quantity of bentonite used (lbs.)	18 pounds	O contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of	***************************************	NOT
Quantity of calcium chloride used (lbs.)		The desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the desired of the de		DRILLED
Volume of grout prepared (gal.)				DASCES
Volume of grout used (gal.)	16908	] _30		
COMMENTS: A - 1/2		-		***************************************
COMMENTS: Depth to water =	8025 H from TOC		elevant decommissioning d	ata, including:
A 11 1	asing with grout.	interval overdrille	ed, interval grouted, casing	gleft in hole,
	sining borehole.	well stickup, etc.		1.42mm
Added soil in top. Sureen be	the off in hele.	1		· 茶

### Table 2-4

### Well Decommissioning Record Well Abandonment Plan

Seneca Army Depot Activity

WELL DECOMMISSIONING RECORD				
Site Name: Seneca Army Depot	Well ID: MW 122B = 2			
Site Location: SEAD 122B	Driller: Steve Larance			
Drilling Company: Geologic North Star	Inspector: Scott Dillman			
J	Date: 9/24/10			
DECOMMISSIONING DATA	WELL SCHEMATIC*			
(Fill in all that apply)	Donah O G CI			
(1 m an app.y)	(feet)			
OVERDRILLING	O Stick up Top TOT			
Interval Drilled	Soil			
Drilling Method(s)				
Borehole Dia. (in.)				
Temporary Casing Installed? (y/n)				
Depth temporary casing installed	5 OULED .			
Casing type/dia. (in.)	5 PULLED Growt			
Method of installing	WELL 4			
	WES			
CASING PULLING				
Method employed Grout, Pul, Grait	10			
Casing retrieved (feet)				
Casing type/dia. (in.)				
CASE PERFORATING				
Equipment used	15			
Number of perforations/foot				
Size of perforations	16			
Interval perforated	DOI/W			
	- / of /			
GROUTING	20 - / Well			
Interval grouted (FBLS)				
# of batches prepared				
For each batch record:				
Quantity of water used (gal.)				
Quantity of cement used (lbs.) 2-6aq5	25			
Cement type Type Y Particul				
Quantity of bentonite used (lbs.)	Not			
Quantity of calcium chloride used (lbs.)	DRILLE			
Volume of grout prepared (gal.)				
Volume of grout used (gal.)	30			
COMMENTS: Depth to water = 7.73 ft from TOC Knocked out end cap. Loaded casing with grout. Pulled casing. Growted remaining borehole. Added soil in top.	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.			

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#### WELL DECOMMISSIONING RECORD Seneca Well ID: Site Name: Site Location: SEA D Driller: aramee Drilling Company: North Inspector: Date: DECOMMISSIONING DATA **WELL SCHEMATIC\*** (Fill in all that apply) Depth (feet) OVERDRILLING Interval Drilled Soil Drilling Method(s) Borehole Dia. (in.) Temporary Casing Installed? (y/n) Depth temporary casing installed Casing type/dia. (in.) PVC Method of installing WELL CASING PULLING Method employed 10 Casing retrieved (feet) Casing type/dia. (in.) CASE PERFORATING 15 Equipment used Batton Number of perforations/foot of Size of perforations Well Interval perforated 20 GROUTING Interval grouted (FBLS) # of batches prepared For each batch record: Quantity of water used (gal.) Quantity of cement used (lbs.) 25 Cement type upey Portle Quantity of bentonite used (lbs.) NOT Quantity of calcium chloride used (lbs.) DRILLED Volume of grout prepared (gal.) Volume of grout used (gal.) 30 COMMENTS: Depth to water At from TOC \* Sketch in all relevant decommissioning data, including: Knocked out end cap. Loaded with interval overdrilled, interval grouted, casing left in hole, well stickup, etc. remaining

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