

October 5, 2011

Mr. John Nohrstedt  
U.S. Army Corps of Engineers  
Engineering and Support Center, Huntsville  
Attn: CEHNC-FS-IS  
4820 University Square  
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**SUBJECT: Draft Final Well Decommissioning Report, Seneca Army Depot Activity, Romulus, Seneca County, 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**

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Dear Mr. Nohrstedt:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft 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 Delivery 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

cc: S. Absolom, SEDA  
K. Hoddinott, USACHPPM  
R. Battaglia, USACE, NY  
T. Battaglia, USACE, NY

October 5, 2011

Mr. John Hill  
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**SUBJECT: Draft Final Well Decommissioning Report, Seneca Army Depot Activity, Romulus, Seneca County, New York; AFCEE Contract FA8903-04-D-8675, Task Order 31, CRDL-001C**

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Dear Mr. Nohrstedt:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft 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. Also included is a copy of the Army's Response to Comments on the Draft Well Decommissioning Report that were received from the EPA on June 28, 2011.

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: S. Absolom, SEDA  
K. Hoddinott, USACHPPM  
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October 5, 2011

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Troy, NY 12180

**SUBJECT: Draft 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 Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Draft 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). Also included is a copy of the Army's Response to Comments on the Draft Well Decommissioning Report that were received from the EPA on June 28, 2011.

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. Heaney, TechLaw  
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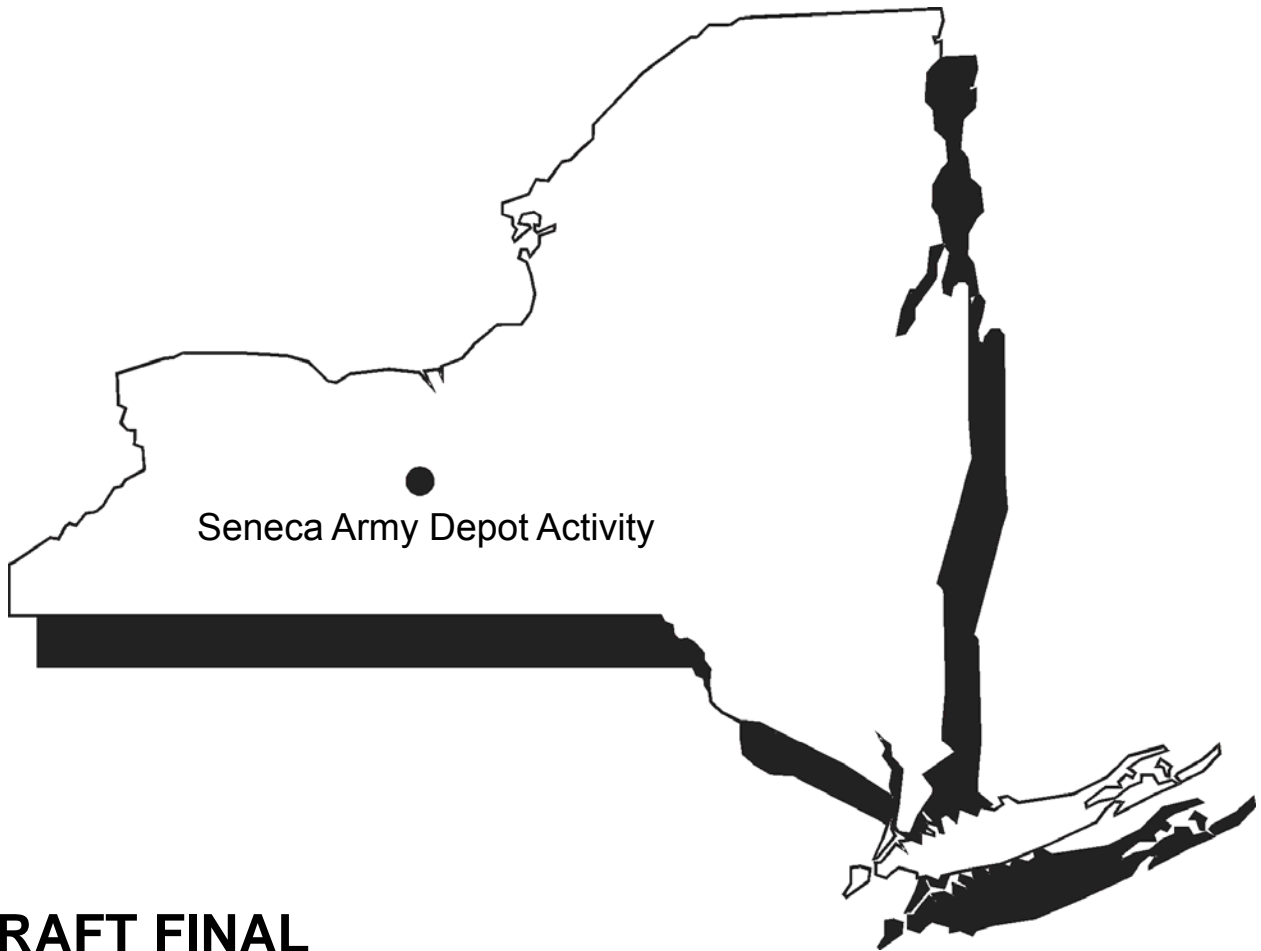


US Army, Engineering & Support Center  
Huntsville, AL

01691



Seneca Army Depot Activity  
Romulus, NY



## **DRAFT FINAL**

## **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**

OCTOBER 2011

**DRAFT 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  
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**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**

**October 2011**

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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 man-made 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<sup>1</sup> 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

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<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 MW25-5d, 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 a 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 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 wells 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, MW59-5, 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. 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-02, MW12A-03, MW12B-01 through MW12B-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 MW67-1 through 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.

### **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**

AOC Location	Well ID	Northing	Easting	Monitoring Well Type	Well Depth from Ground Surface (ft bgs)	Date Abandoned	Selected Decommissioning Method (1)	Casing Pulled	Bollards Removed	Number of Bollards	Top of Grout (ft bgs) (2)	Bottom of Grout (ft bgs)	Length of Grout (ft)	Quantity of Grout Used (gallons)	Field Geologist	Comments
SEAD-03 Ash Landfill	MW-28	995073.237	739765.473	Overburden/Bedrock	8.6	09/21/10	GPG	10.5	YES	3	1	8.3	7.3	8	SD	
SEAD-03 Ash Landfill	MW-30	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-31	994473.894	739869.345	Overburden/Bedrock	9.4	09/20/10	GPG	10.4	YES	3	1	10.4	9.4	10	SD	
SEAD-03 Ash Landfill	MW-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-34	993641.89	739975.8	Overburden/Bedrock	16.2	09/20/10	GPG	18.1	YES	3	1	16.2	15.2	17	SD	
SEAD-03 Ash Landfill	MW-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
SEAD-03 Ash Landfill	MW-36	994467.85	739577.77	Overburden/Bedrock	14.71	01/26/11	GPG	16.6	YES	3	0	15.8	15.8	NA	SD	
SEAD-03 Ash Landfill	MW-37	996634.22	739365.591	Overburden	11.7	09/21/10	GPG	13.75	YES	3	1	13.75	12.75	13	SD	
SEAD-03 Ash Landfill	MW-38D	995521.008	739695.393	Bedrock	29.7	09/21/10	GPG	33.4	YES	3	0	29.7	29.7	30	BMc	
SEAD-03 Ash Landfill	MW-41D	995948.132	741843.734	Bedrock	44.5	09/17/10	GIP	4.6	YES	3	2	44.7	42.7	20	SD	
SEAD-03 Ash Landfill	MW-42D	994341.349	741606.6	Bedrock	45	09/16/10	GIP	4.2	YES	3	2	45	43	20	SD	
SEAD-03 Ash Landfill	MW-43	995184.817	740805.392	Overburden/Bedrock	5.5	09/16/10	GPG	7.6	YES	3	1	4.8	3.8	5	SD	
SEAD-03 Ash Landfill	MW-45	995429.677	740320.317	Overburden	9	09/20/10	GPG	8.4			0	5.4	5.4	3	BMc	
SEAD-03 Ash Landfill	MW-47	995088.598	739188.829	Overburden/Bedrock	5.5	01/26/11	GPG	8.5	YES	3	0	6	6	NA	SD	
SEAD-03 Ash Landfill	MW-49D	995171.215	740321.557	Bedrock	35.5	09/20/10	GIP		YES	3	0	35	35	8	BMc	
SEAD-03 Ash Landfill	MW-50D	995165.986	740317.179	Bedrock	57.8	09/20/10	GIP		YES	3	0	57.8	57.8	20	BMc	
SEAD-03 Ash Landfill	MW-51D	995083.605	739188.678	Bedrock	33.3	01/25/11	GIP	2.5	YES	3	0	35.5	35.5	NA	SD	
SEAD-03 Ash Landfill	MW-52D	995078.253	739189.03	Bedrock	56.7	01/25/11	GIP	3	YES	3	0	58.7	58.7	NA	SD	
SEAD-03 Ash Landfill	MW-53	994820.784	739844.61	Overburden/Bedrock	8	09/20/10	GPG	10.4	YES	3	0	8.4	8.4	6	BMc	
SEAD-03 Ash Landfill	MW-54D	994826.338	739840.663	Bedrock	32.6	09/20/10	GIP	2.6	YES	3	0	32.4	32.4	32	BMc	
SEAD-03 Ash Landfill	MW-55D	994820.83	739837.662	Bedrock	55.9	09/20/10	GIP		YES	3	0	55.8	55.8	50	BMc	
SEAD-03 Ash Landfill	MW-57D	994768.367	739436.205	Bedrock	33	01/26/11	GIP	1.9	YES	3	0	33.2	33.2	NA	SD	
SEAD-03 Ash Landfill	MW-59	994259.667	740825.707	Overburden/Bedrock	8.5	09/16/10	GPG	9.7	YES	3	1	7.8	6.8	7	SD	
SEAD-03 Ash Landfill	MWT-11	994615.116	739791.2916		15	09/20/10	GPG	10	YES	3	0	10.3	10.3	11	SD	Five feet of screen grouted in place and left in hole.
SEAD-03 Ash Landfill	PT-11	994399.871	740785.36	Overburden		09/20/10	GPG/GIP	10			1	15.4	14.4	15	SD	Five feet of screen grouted in place and left in hole.
SEAD-03 Ash Landfill	PT-15	994183.74	739974.54	Overburden/Bedrock	15.4	09/20/10	GPG/GIP	14.6			1	16	15	16	SD	
SEAD-03 Ash Landfill	PT-21A	994924.11	740214.13		15	09/20/10	GPG	20.4	YES	3	0	18.4	18.4	10	BMc	
SEAD-03 Ash Landfill	PT-23	995250.93	739850.04	Overburden/Bedrock	9.7	09/20/10	GPG	10.5	YES	3	1	7.7	6.7	7	SD	
SEAD-03 Ash Landfill	PT-25	994377.25	739840.14	Overburden/Bedrock	9.5	09/20/10	GPG	12.1			1	9.3	8.3	8	SD	
SEAD-4	MW4-1	999187.45	733603.32	Overburden	10.5	09/17/10	GPG	12.9			1	10.7	9.7	10	SD	
SEAD-4	MW4-2	987818.31	744938.98	Overburden	4	09/21/10	GPG	5			0	3	3	10	BMc	
SEAD-4	MW4-3	987226.64	745020.76	Overburden	9	09/21/10	GPG	11.4			1	9.2	8.2	9	SD	
SEAD-4	MW4-4	987026.91	744172	Overburden	10											Decommissioned during SEAD-4 Remedial Action
SEAD-4	MW4-5	999012.97	733407.82	Overburden	6	09/17/10	GPG	8.4			1	5.9	4.9	6	SD	
SEAD-4	MW4-6	987261.57	744333.8	Overburden	9.9											Decommissioned during SEAD-4 Remedial Action
SEAD-4	MW4-7	987525.87	744761.6	Overburden	6.4	09/17/10	GPG	8.5			1	6.4	5.4	6	SD	
SEAD-4	MW4-8	986990.62	744352.19	Overburden	10											Decommissioned during SEAD-4 Remedial Action
SEAD-4	MW4-9	986867.47	745166.94	Overburden	6.2	09/21/10	GPG	6.2			1	6.2	5.2	6	SD	
SEAD-4	MW4-10	986620.39	745454.9	Overburden	8.1											Decommissioned during SEAD-4 Remedial Action
SEAD-4	MW4-11	986944.99	745680.33	Overburden	9	09/21/10	GPG	11.5			1	8.5	7.5	8	SD	
SEAD-4	MW4-12	987174.73	745493.52	Overburden	11	09/17/10	GPG	13.6			1	11.2	10.2	NA	SD	
SEAD-4	MW4-13	988053.51	745097.44	Overburden	6.8	09/23/10	GPG	9			1	6.4	5.4	6	SD	
SEAD-5	MW5-1	998728.88	750506.5	Overburden	11.9				YES	3						Decommissioned during SEAD-5 Remedial Action
SEAD-5	MW5-2	998755.38	750226.06	Overburden	10	09/24/10	GPG	12	YES	3	1	9.4	8.4	9	SD	
SEAD-5	MW5-3	998884.31	750255.94	Overburden	8.5				YES	3						Removed during SEAD-59 Time-Critical Removal Action
SEAD-11	MW11-1	987710.92	744223.74	Overburden	14.2	01/25/11	GPG	16.6			0	13.8	13.8	NA	SD	
SEAD-11	MW11-2	987947.64	743550.97	Overburden	8.5	09/21/10	GPG	12.3	YES	3	0	8.5	8.5	NA	BMc	
SEAD-11	MW11-3	987404.04	743517.47	Overburden	9	09/21/10	GPG	7.4			1	7.4	6.4	7	SD	
SEAD-11	MW11-4	987664.42	743443.95	Overburden	10.5	09/21/10	GPG	13			0	10	10	NA	BMc	
SEAD-11	MW11-5	987780.7	743542.5	Overburden	11	09/21/10	GPG	11	YES	3	0	10.5	10.5	10	BMc	
SEAD-11	MW11-6	987550.5	743444.4	Overburden	8.5	09/21/10	GPG	10.35			1	8	7	7	SD	
SEAD-11	MW11-7	987462.8	743485.7	Overburden	6	09/21/10	GPG	7.6			1	5.4	4.4	5	SD	
SEAD-12	MW12-01	1015591.7	745456.8	Overburden	9	09/15/10	GPG	11.4	YES	3	1	9	8	9	SD	
SEAD-12	MW12-02	1013710.3	745536.3	Overburden	6	09/15/10	GPG	8.6	YES	3	1	6	5	8	SD	
SEAD-12	MW12-03	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.
SEAD-12	MW12-04	1016353.4	744983.6	Overburden	12.2	09/15/10	GPG	14.4	YES	3	1	11.9	10.9	12	SD	
SEAD-12	MW12-05	1016284.4	743429		18.4	09/15/10	GPG/GIP	17.1	YES	3	1	18.1	17.1	18	SD	Portion of screen left in place filled with grout.
SEAD-12	MW12-06	1016120.641	742086.6072		11.8	01/25/11	GPG	11.6	YES	3	0	11.6	11.6	NA	SD	
SEAD-12	MW12-07	1015394.579	744855.8807	Overburden	13.6				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-08	1015208.876	745182.9424	Overburden	12				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits

**Table 1-1  
Groundwater Wells Decommissioned  
Seneca Army Depot Activity**

AOC Location	Well ID	Northing	Easting	Monitoring Well Type	Well Depth from Ground Surface (ft bgs)	Date Abandoned	Selected Decommissioning Method (1)	Casing Pulled	Bollards Removed	Number of Bollards	Top of Grout (ft bgs) (2)	Bottom of Grout (ft bgs)	Length of Grout (ft)	Quantity of Grout Used (gallons)	Field Geologist	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	
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	MW12-11	1015123.089	744975.8444	Overburden/Bedrock	13.1				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-12	1015162.954	744888.0145	Overburden/Bedrock	13				YES	3						Removed during SEAD-12 Removal Action at Radiological Disposal Pits
SEAD-12	MW12-13	1015212.377	744875.6862	Overburden/Bedrock	13				YES	3						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	12.7	YES	3	1	11.1	10.1	11	SD	
SEAD-12	MW12-25	1012127.712	742084.164	Overburden	10.3	09/15/10	GPG	13.7	YES	3	1	10.8	9.8	11	SD	
SEAD-12	MW12-26	1012155.909	742161.7122	Overburden	10.1	09/15/10	GPG	13.5	YES	3	1	11	10	11	SD	
SEAD-12	MW12-27	1012826.292	743875.0482	Overburden	10	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	3	1	10.4	9.4	10	SD	
SEAD-12	MW12A-02	1015117.1	744926.75	Overburden	12	09/14/10	GPG	13	YES	3	1	12	11	NA	SD	
SEAD-12	MW12A-03	1015521.4	744532.25	Overburden	15.1	09/14/10	GPG	16.4	YES	3	1	14.9	13.9	NA	SD	
SEAD-12	MW12B-01	1015934.4	743739.69	Overburden	17.8	09/13/10	GPG	19.2	YES	3	1	18	17	18	SD	
SEAD-12	MW12B-02	1015920.1	743522.88	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	
SEAD-13	MW13-8															Well could not be found
SEAD-13	MW13-9	998663.96	750366.52			09/15/10	GPG	16.2			1	14.8	13.8	15	SD	
SEAD-13	MW13-10	998964.4333	750023.7785	Overburden	15.0	09/15/10	GPG	16.2			1	14.2	13.2	14	SD	
SEAD-13	MW13-11	998857.0719	750060.1322	Overburden	15.0	09/15/10	GPG	16.6			1	14.8	13.8	15	SD	
SEAD-13	MW13-12	999298	750894.75	Overburden	11.3	09/16/10	GPG	10.9			1	9.9	8.9	9	SD	
SEAD-13	MW13-13	999309.5	750986.44	overburden	15.0											Well could not be found
SEAD-13	MW13-14	999298	705525.17	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						Decommissioned 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	0	25	25	25	BMc	



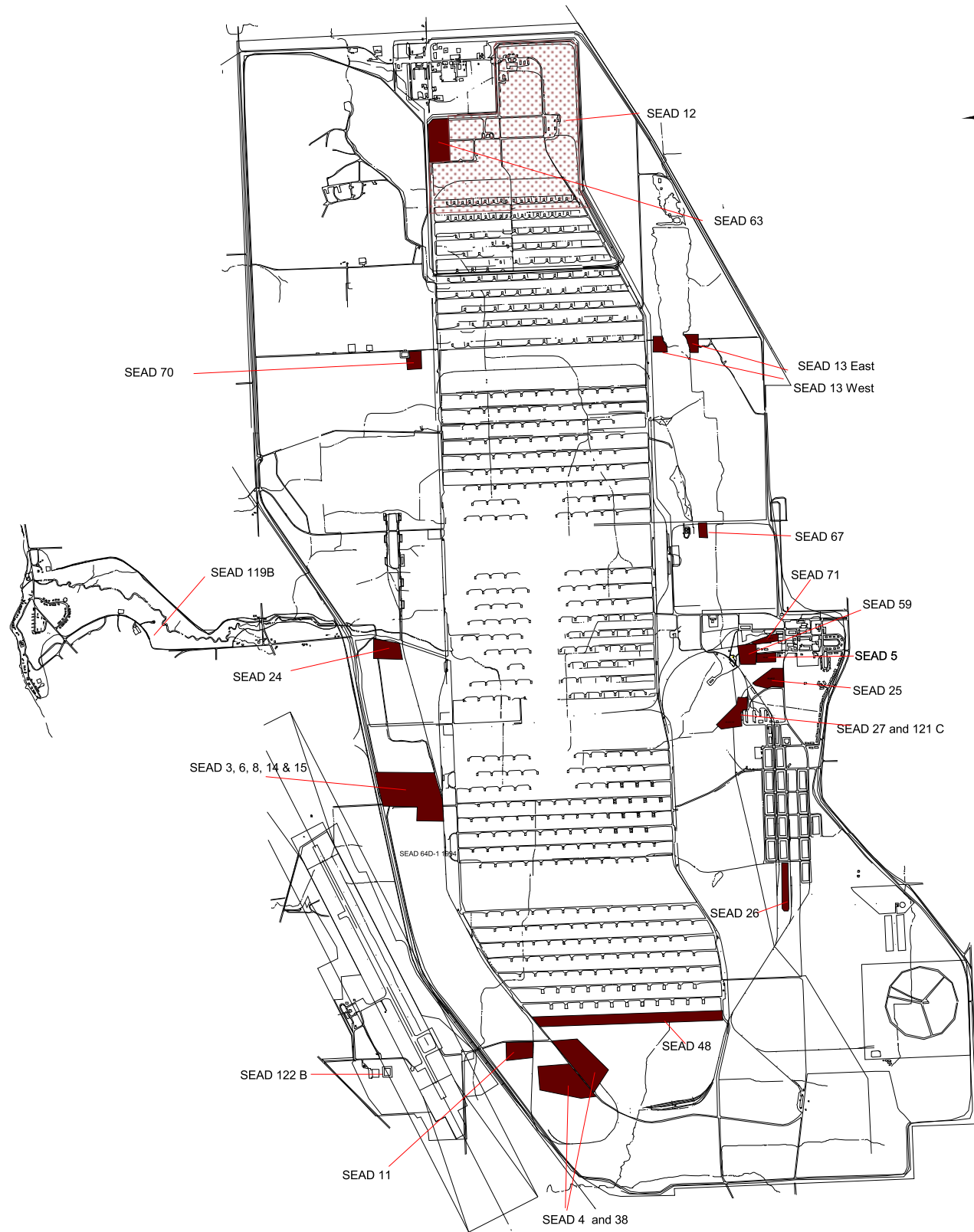
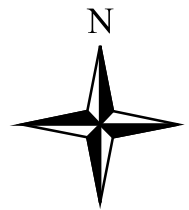
**Table 1-1  
Groundwater Wells Decommissioned  
Seneca Army Depot Activity**

AOC Location	Well ID	Northing	Easting	Monitoring Well Type	Well Depth from Ground Surface (ft bgs)	Date Abandoned	Selected Decommissioning Method (1)	Casing Pulled	Bollards Removed	Number of Bollards	Top of Grout (ft bgs) (2)	Bottom of Grout (ft bgs)	Length of Grout (ft)	Quantity of Grout Used (gallons)	Field 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				YES	3						Decommissioned 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	09/24/10	GPG	17.2			1	14.9	13.9	18	SD	
SEAD-27	MW-2	997149.31	749926.33		15	09/24/10	GPG	17.4			1	14.8	13.8	18	SD	
SEAD-48	MW48-1	988650 (approx)	745950 (approx)	Overburden	8	09/21/10	GPG	9.9			1	7.5	6.5	7	SD	
SEAD-48	MW48-2	988615 (approx)	744685 (approx)	Overburden	7.6	09/23/10	GPG	10			1	8	7	8	SD	
SEAD-48	MW48-3	988680 (approx)	746770 (approx)	Overburden	8	09/21/10	GPG	10			1	7.3	6.3	7	SD	
SEAD-48	MW48-4	988695 (approx)	747355 (approx)	Overburden	8	09/21/10	GPG	11	YES	3	0.2	7.3	7.1	NA	BMc	
SEAD-48	MW48-5	988725 (approx)	748030 (approx)	Overburden	13	09/21/10	GPG	15	YES	3	0.5	13	12.5	NA	BMc	
SEAD-48	MW48-6	988750 (approx)	748850 (approx)	Overburden	8	09/21/10	GPG	11	YES	3	0	8	7.8	NA	BMc	
SEAD-48	MW48-7	989365 (approx)	747045 (approx)	Overburden	9.5	09/22/10	GPG/GIP	11.4			1	9.3	8.3	9	SD	Screen filled with grout separated from riser when casing pulled.
SEAD-48	MW48-8	988020 (approx)	747695 (approx)	Overburden	6	09/22/10	GPG	8			1	6	5	5	SD	
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				YES	3						Removed during SEAD-59 Time-Critical Removal Action
SEAD-59	MW59-4	998815.27	749980.43		15	09/23/10	GPG	8.6	YES	3	1	7.1	6.1	8	SD	
SEAD-59	MW59-5				15				YES	3						No Record could be found.
SEAD-59	MW59-6	998663.96	750366.52		15				YES	3						Decommissioned 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	
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			Broken pad found; dug down 4 feet no well encountered, Backgrouted 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:  
1 - GIP = Grout in Place. GPG = Grout, pull, grout. GPG/GIP = Grout, pull, a portion of well broke off during pull and was left in hole, grouted in place.  
2 - ft  
NA = Not available.

**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



**LEGEND**



Location of SEAD-12 where wells were decommissioned.



Locations where monitoring wells were decommissioned.

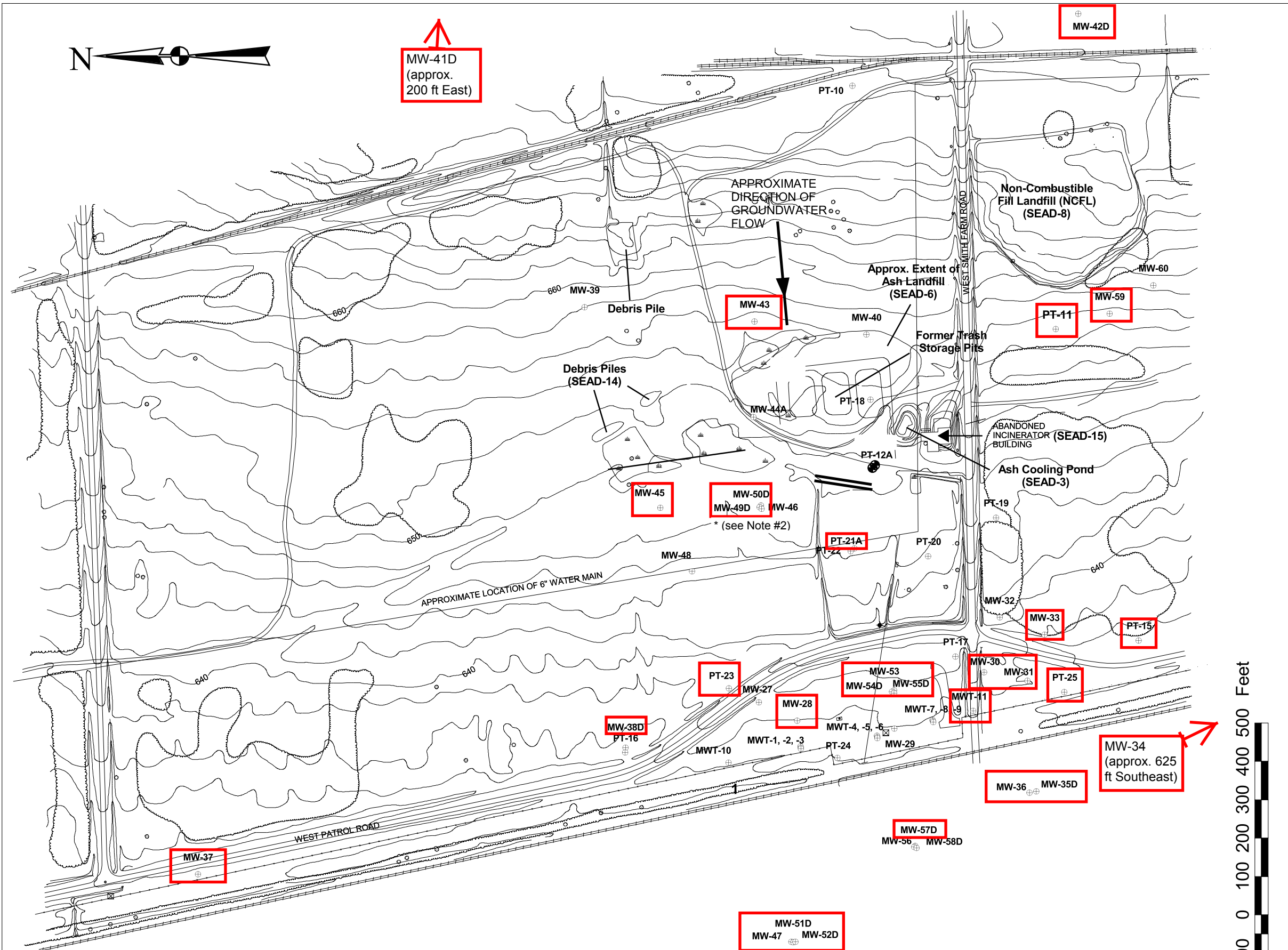


**PARSONS**

SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

**FIGURE 1**  
Location of SWMUs

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### LEGEND

- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND & DESIGNATION
- OUTLINE OF FORMER TRASH PITS (IDENTIFIED FROM AERIAL PHOTO)
- APPROXIMATE EXTENT OF DEBRIS PILE
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- PT-22 MONITORING WELL AND DESIGNATION
- MW-37 RAILROAD
- 6" WATER MAIN
- - - - - APPROX EXTENT OF IRM SOIL TREATMENT
- 1,000 GROUNDWATER ISOCONTOUR (ug/L)
- 75 TOTAL CHLORINATED ETHENES (ug/L) FROM SAMPLES COLLECTED IN JANUARY 2000
- 10U NO CHLORINATED ETHENES DETECTED

NOTE:  
THE CONCENTRATIONS SHOWN ON THIS FIGURE ARE FOR WELLS SCREENED IN THE TILLED/WEATHERED SHALE AQUIFER.

Note #2 : MW-46 was not decommissioned.

Well decommissioned between Sept 2010 and Jan 2011.

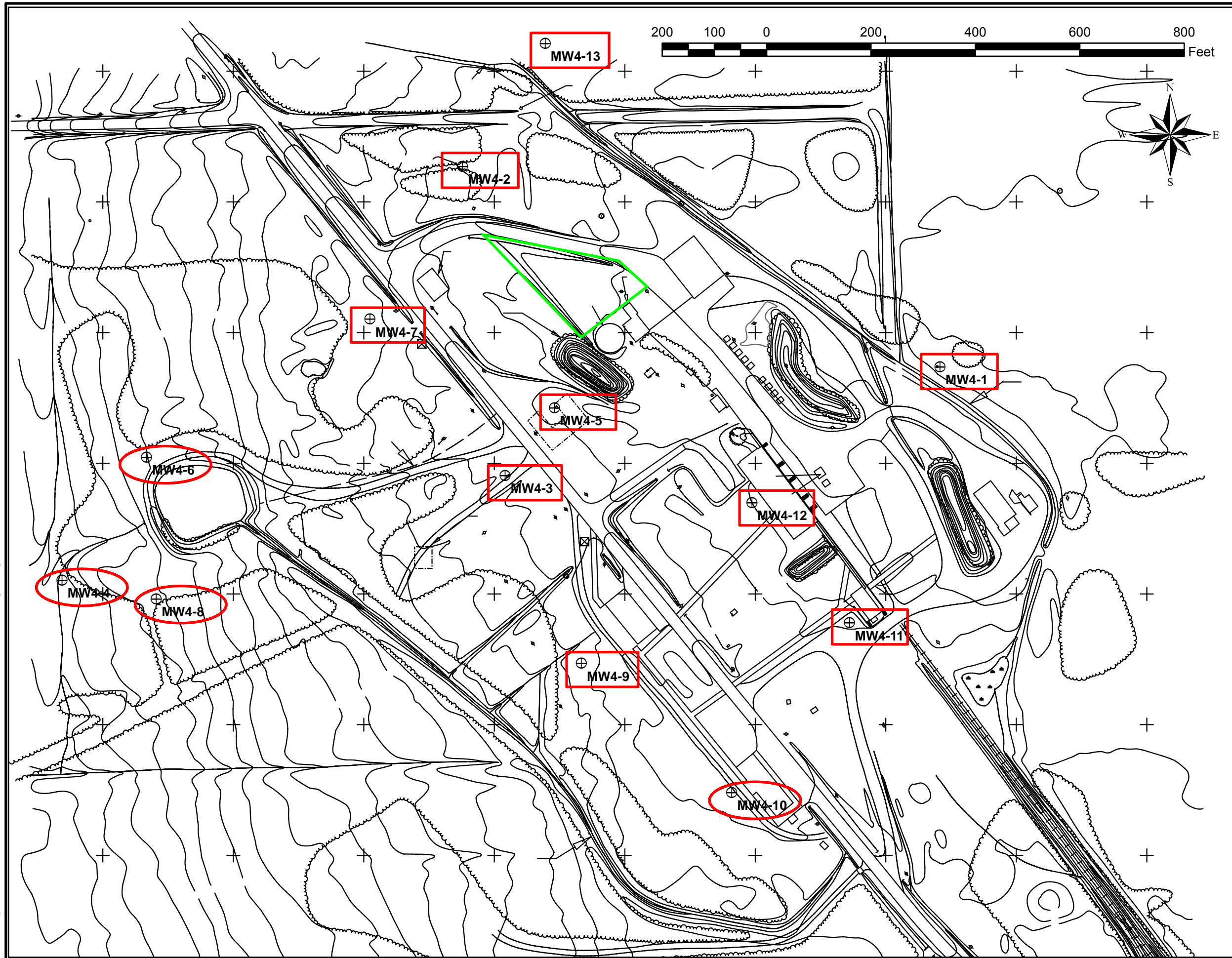


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SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 2  
Wells Decommissioned  
Ash Landfill Operable Unit





Legend:

- ⊕ Monitoring Well
- Well decommissioned in Sept 2010.
- Well decommissioned previously.
- ▭ Approximate Boundary of SEAD-38.

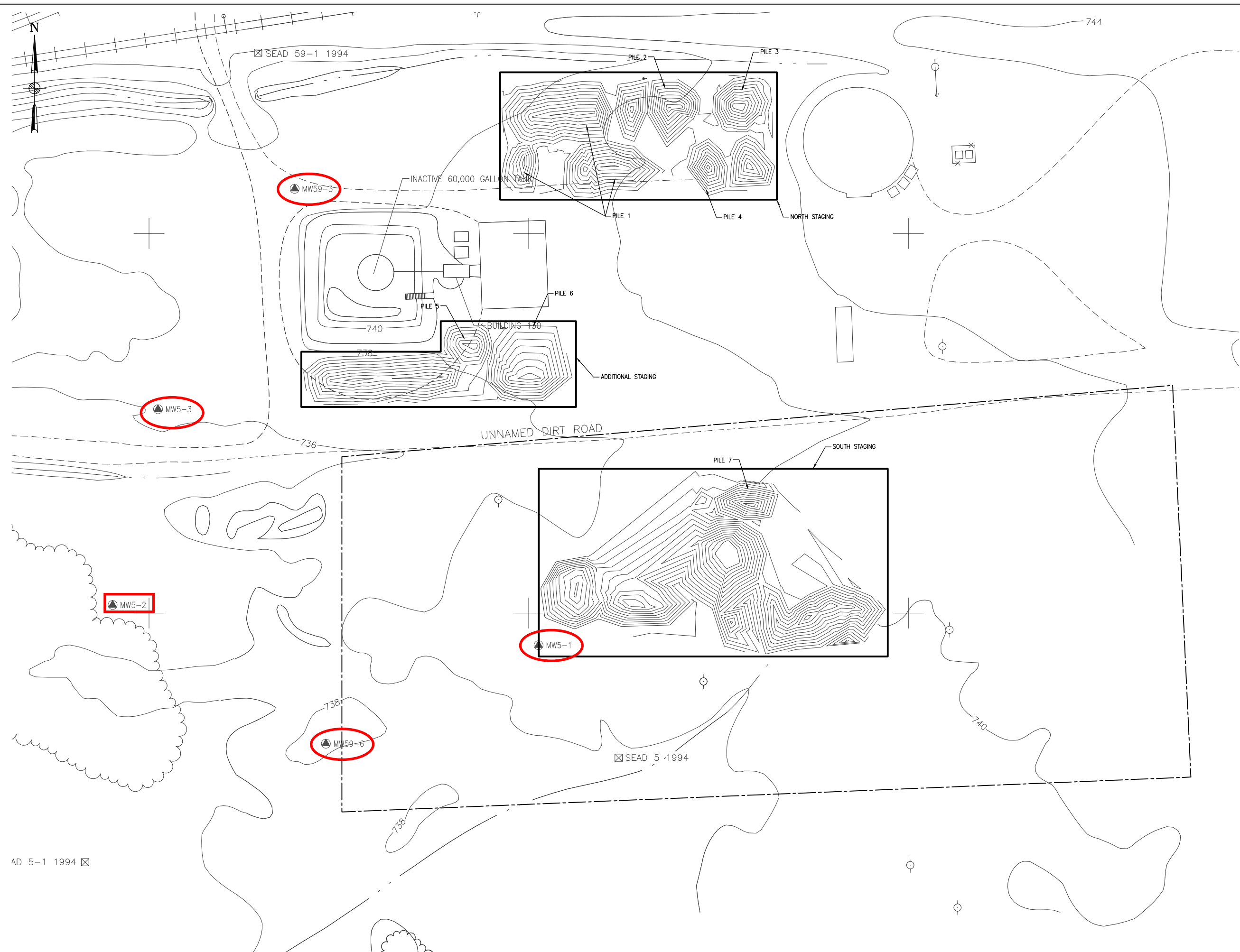


**PARSONS**

SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 3  
Wells Decommissioned  
SEAD-4 & SEAD-38

FEBRUARY 2011



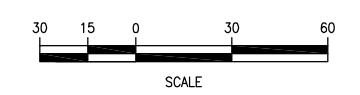
**LEGEND**

	MINOR WATERWAY
	MAJOR WATERWAY
	FENCE
	UNPAVED ROAD
	BRUSH LINE
	RAILROAD
	ROAD SIGN
	DECIDUOUS TREE
	GUIDE POST
	FIRE HYDRANT
	MANHOLE
	MAILBOX/RR SIGNAL
	POLE
	UTILITY BOX
	OVERHEAD UTILITY POLE
	SURVEY MARKER
	MW5-1 GROUNDWATER MONITORING WELL
	EXISTING MAJOR ELEVATION CONTOUR
	EXISTING MINOR ELEVATION CONTOUR
	SEAD-5 BOUNDARY

- NOTES:**
1. LOCATIONS OF SOIL STOCKPILES EXCAVATED FROM SEAD-59 AND SEAD-71 ARE BASED ON PRE-CONSTRUCTION GPS SURVEY.
  2. BOUNDARY OF SEAD-5 IS BASED ON THE FORMER SEWER SLUDGE WASTE PILES LAND PARCEL BOUNDARY.

Well decommissioned between Sept 2010 and Jan 2011.

Well decommissioned previously.



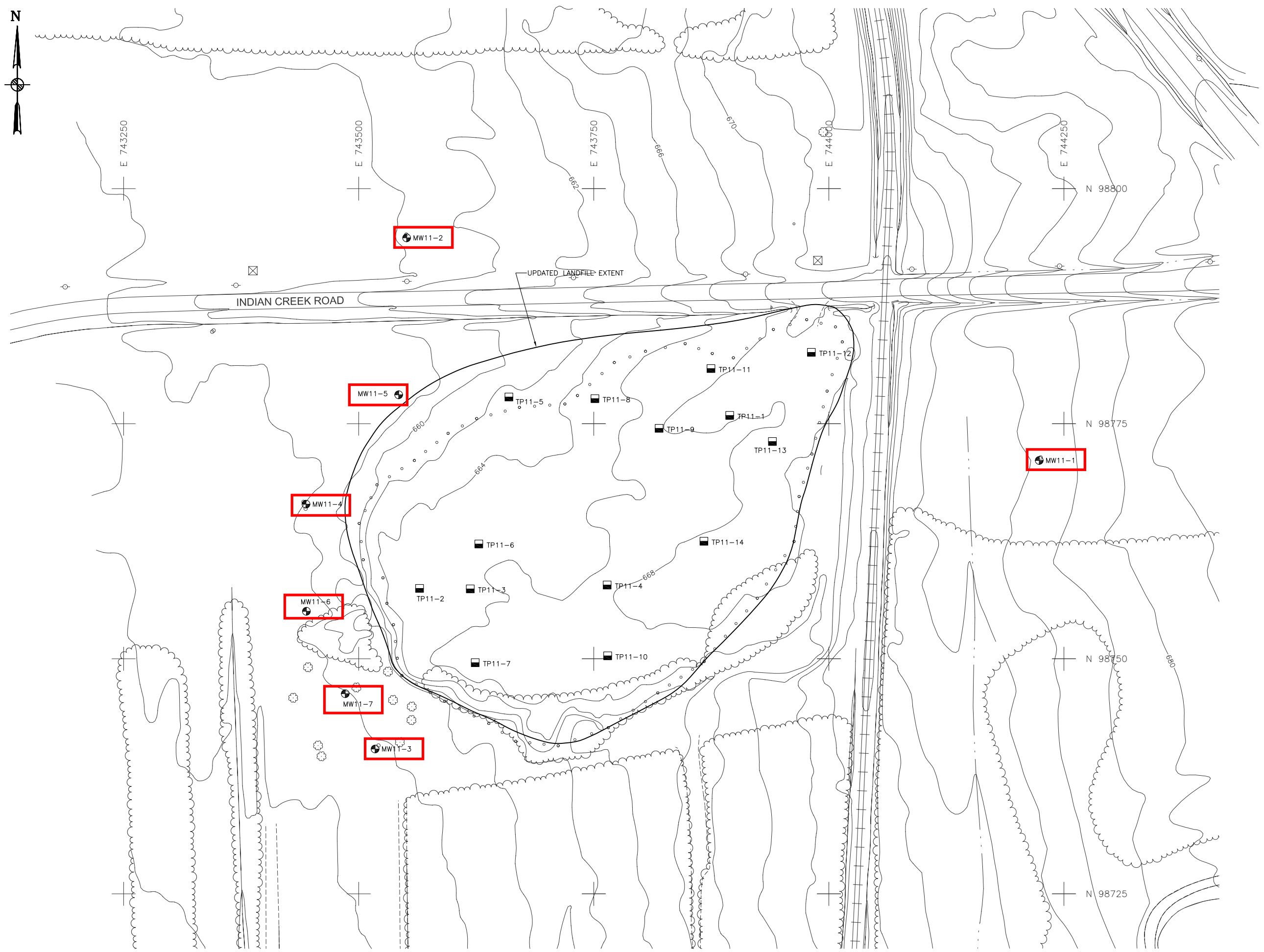
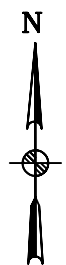
**PARSONS**  
100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:  
**SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report**

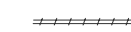
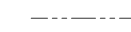
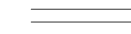
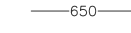



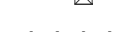

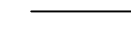



**Figure 4  
Wells Decommissioned  
SEAD-5**


AD 5-1 1994 ☒

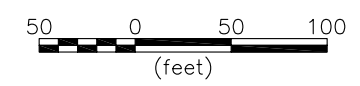
SCALE: AS SHOWN	DRWN: RR	CHKD: BBO	APPD: JA	DATE: 12/02/09	REV: -
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**LEGEND:**

-  RAILROAD TRACKS
-  PROPERTY LINE
-  ROAD
-  CONTOUR ELEVATION
-  TREELINE
-  FENCE
-  UTILITY POLE
-  SURVEY MONUMENT
-  PREVIOUS DELINEATION OF LANDFILL EXTENT
-  UPDATED LANDFILL EXTENT
-  DECIDUOUS TREE
-  MW11-6 MONITORING WELL
-  TP11-2 HISTORIC TEST PIT LOCATION

 Well decommissioned between Sept 2010 and Jan 2011.



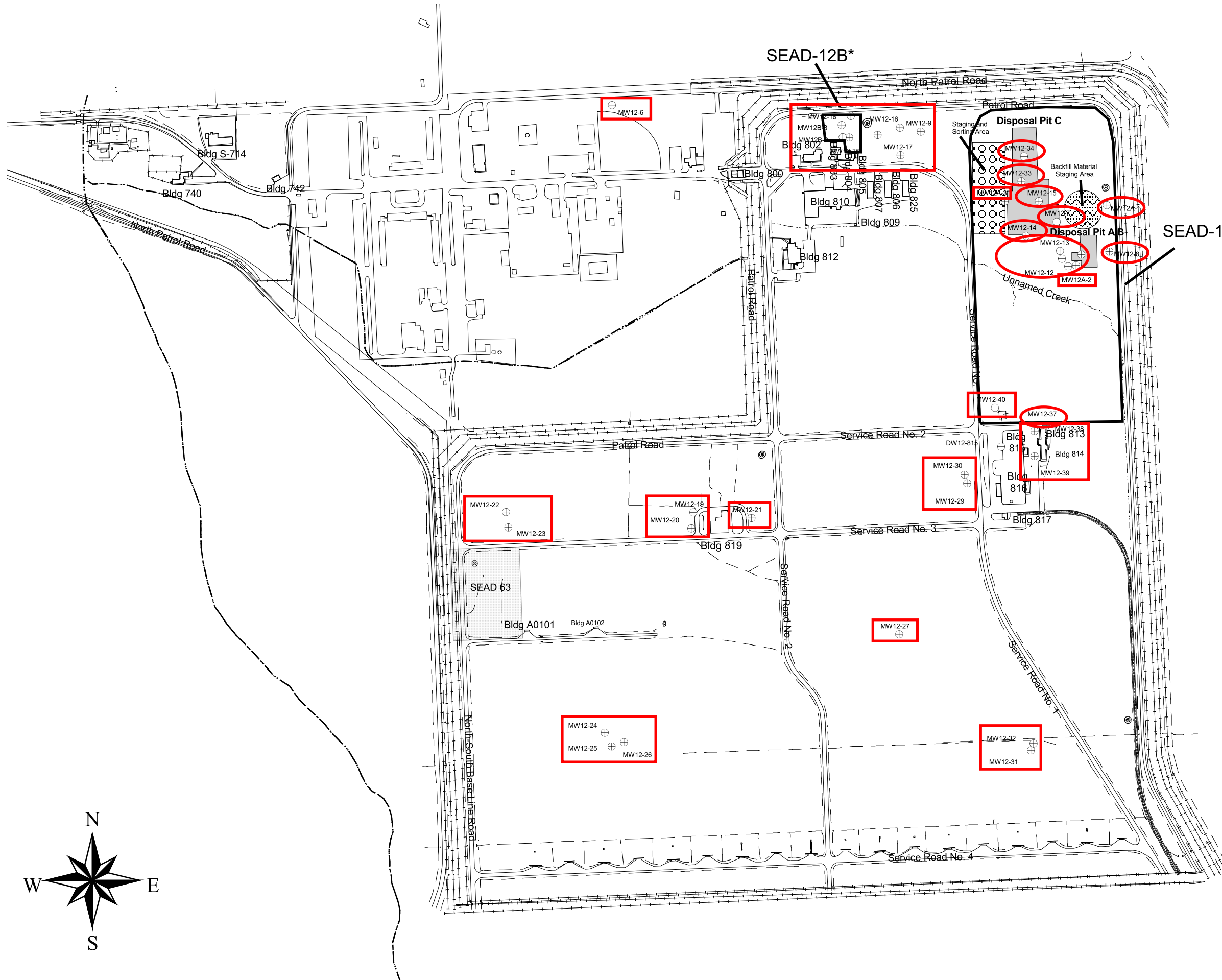
CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT**  
 Well Decommissioning Report

DEPT. ENVIRONMENTAL ENGINEERING Dwg. No. 734543-01000

Figure 5  
 Wells Decommissioned  
 SEAD-11

SCALE 1" = 100' DATE JULY 2006 REV -





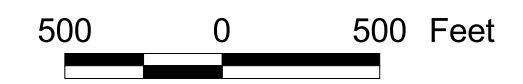
**LEGEND**

- ⊕ MW12-15 MONITORING WELL LOCATION
- DISPOSAL PIT AREA
- SEAD-63
- BUILDINGS (bldgs)
- BACKFILL MATERIAL STAGING AREA
- STAGING AND SORTING AREA
- FENCE
- ROADS
- SURFACE WATER

Wells decommissioned between Sept 2010 and Jan 2011.

Note:  
\* The SEAD-12 site boundary was expanded from the original site boundary which only consisted of two separate areas, known as SEAD-12A and SEAD-12B.

Wells decommissioned previously.

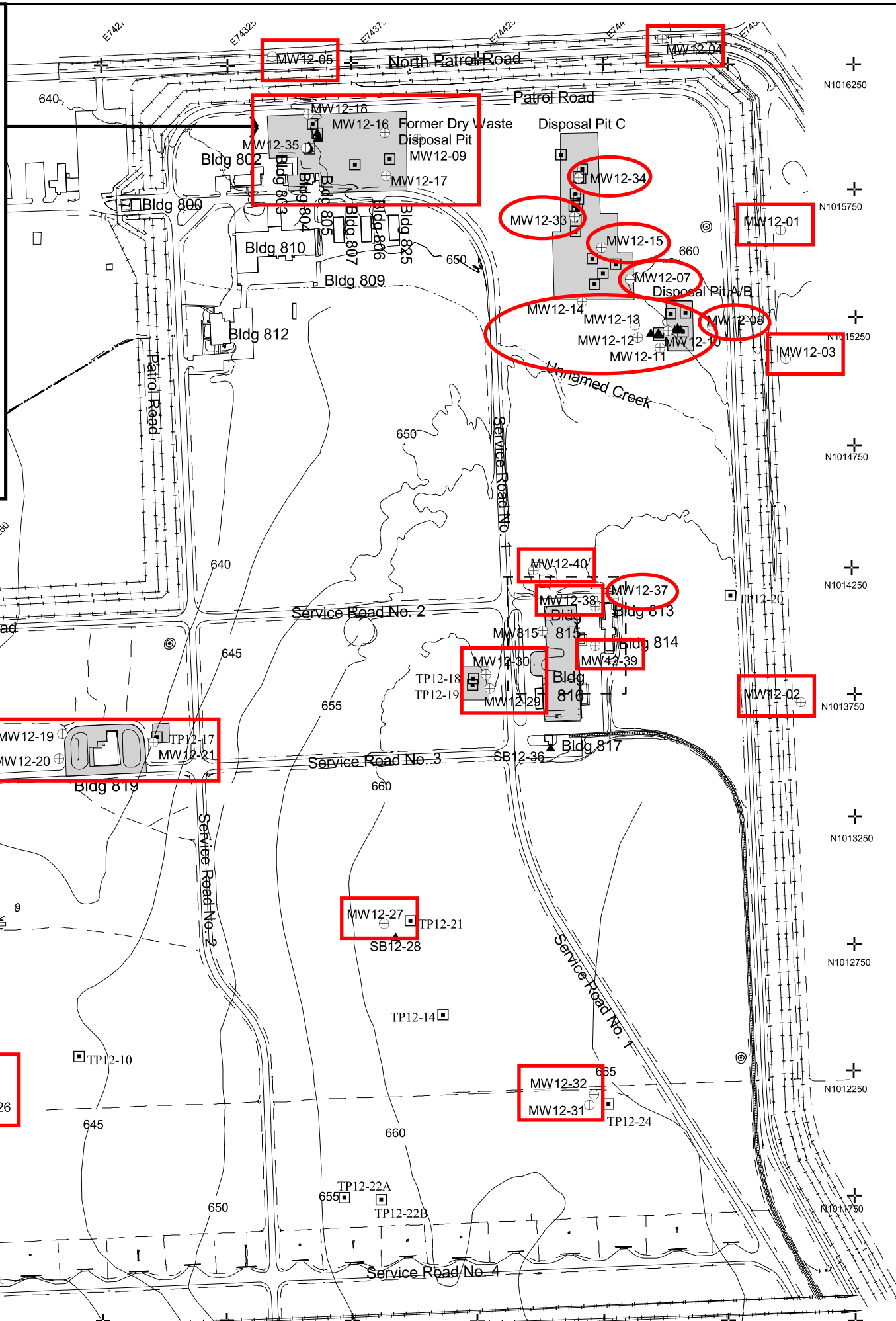
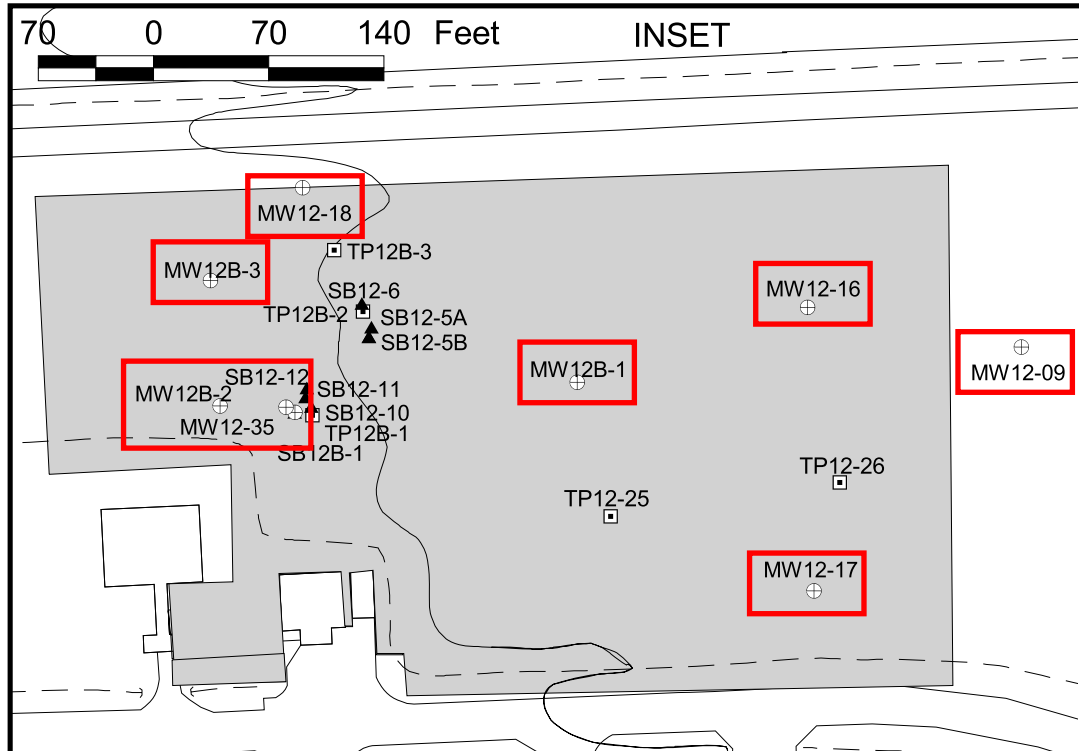


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SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 6a  
Wells Decommissioned SEAD-12





**LEGEND**

- TP12-20  
TESTPIT LOCATION
- ▲ SB12-10  
SOIL BORING LOCATION
- ⊕ MW12-15  
MONITORING WELL  
LOCATION
- POTENTIAL RELEASE  
AREA
- - - SEE FIGURE 1-8 FOR SRI  
SAMPLE LOCATIONS FROM  
TEST PIT AND STOCKPILE

NOTE: DISPOSAL PIT A/B AND C  
SAMPLING LOCATIONS ARE PROVIDED  
FIGURES 2-2 THROUGH 2-5

- Wells decommissioned between  
Sept 2010 and Jan 2011.
- Wells decommissioned  
previously.



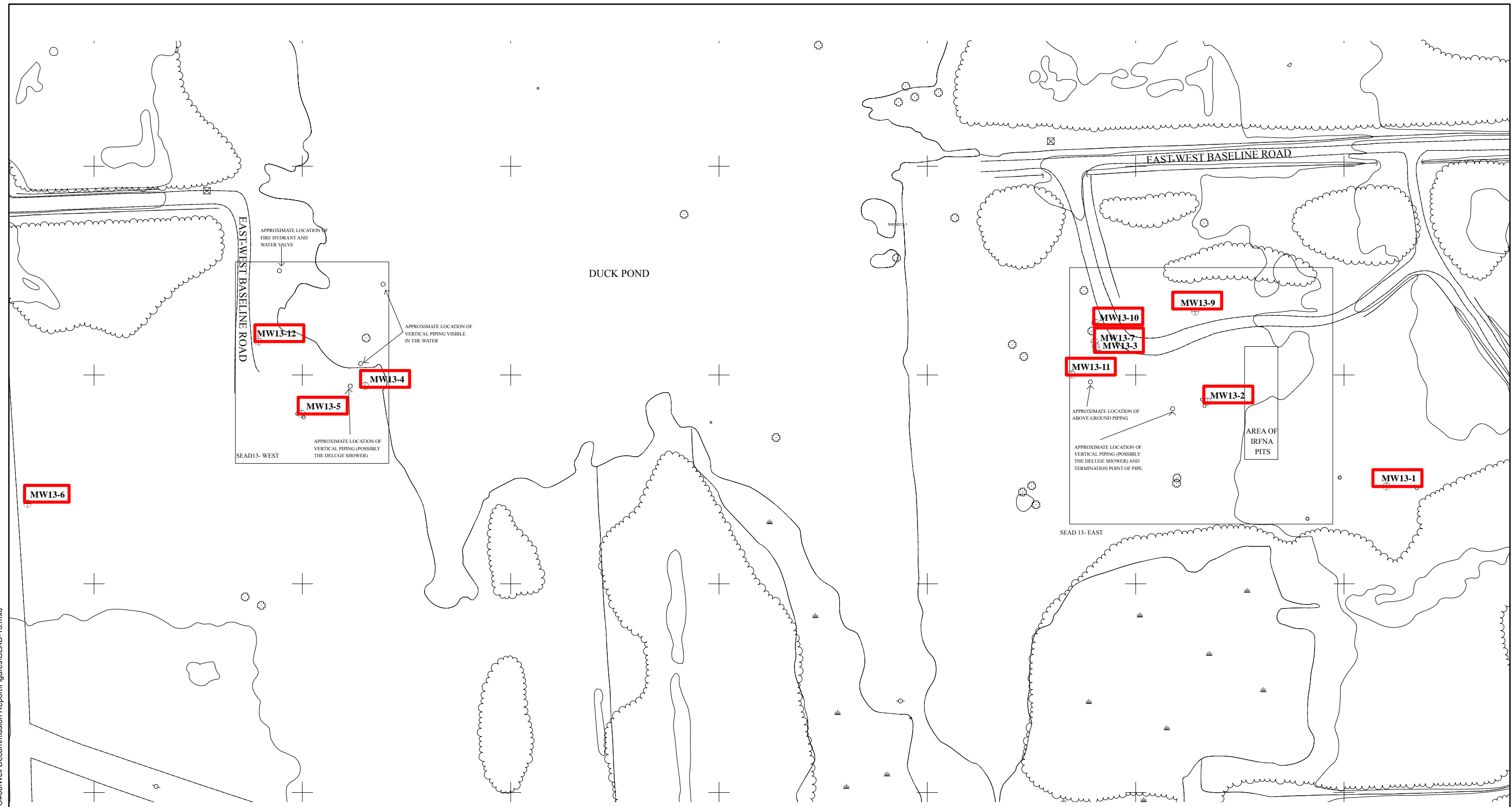
**PARSONS**

SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report



Figure 6b  
Wells Decommissioned  
SEAD-12

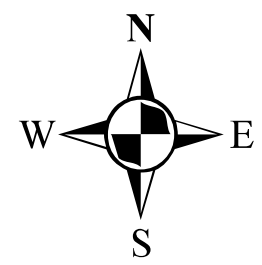
O:\SENECA\SEAD-12\figs\_2007\12-TP\_SB\_LOC.APR

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**LEGEND**

  Monitoring Well decommissioned in September 2010

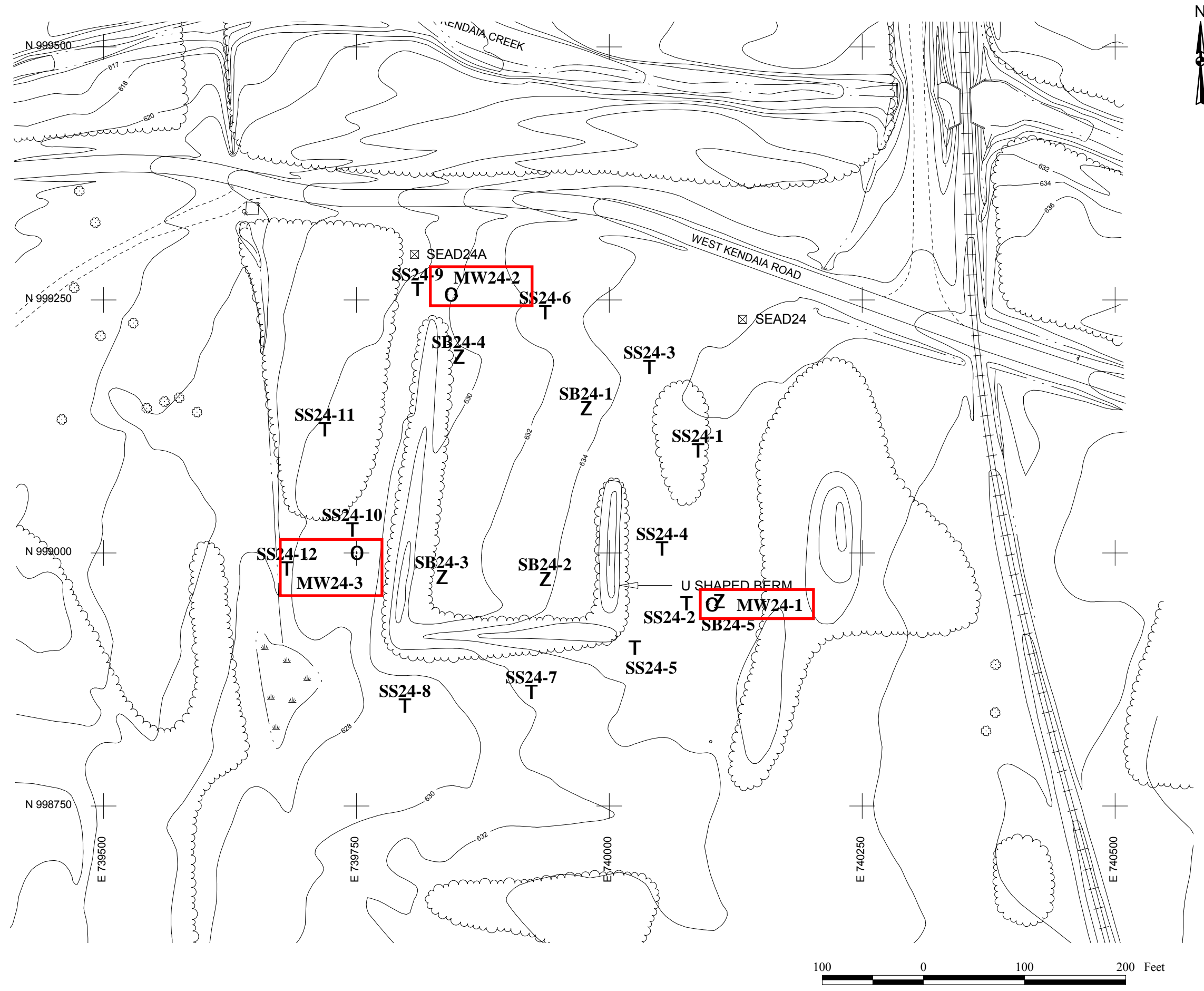


**PARSONS**  
 SENECA ARMY DEPOT ACTIVITY  
 Well Decommissioning Report

Figure 7  
 SEAD-13 IRFNA Disposal Site  
 Wells Decommissioned

FEBRUARY 2011

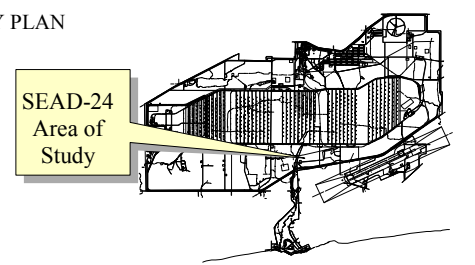
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### LEGEND

- Wells decommissioned in Sept 2010.
- PAVED ROAD
- GROUND CONTOUR AND ELEVATION
- WETLAND
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- RAILROAD
- EXISTING MONITORING WELL AND DESIGNATION
- EXISTING TEST PIT AND DESIGNATION
- PROPOSED MONITORING WELL AND DESIGNATION
- PROPOSED TEST PIT AND DESIGNATION
- Soil Samples
- Surface Soil Samples
- Berm Soil Samples
- Surface Water/Sediment Samples
- Surface Water Samples
- Sediment Samples
- GroundWater Samples
- GeoProbe Samples

### KEY PLAN



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PARSONS ENGINEERING SCIENCE, INC.






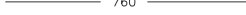













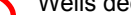
SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report



Figure 8  
Wells Decommissioned  
SEAD-24





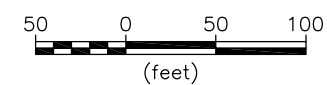
**LEGEND**

-  DRAINAGE DITCH
-  FENCE
-  UNPAVED ROAD
-  BRUSH LINE
-  RAILROAD
-  GROUND SURFACE ELEVATION CONTOUR
-  UNDERGROUND ELECTRIC UTILITY LINE
-  UNDERGROUND WATER UTILITY LINE
-  ROAD SIGN
-  OVERHEAD UTILITY POLE
-  HYDRANT
-  MANHOLE
-  UTILITY BOX
-  DECIDUOUS TREE
-  COORD. GRID (250' GRID)
-  POLE
-  SEAD-25 SURVEY MONUMENT
-  MONITORING WELL LOCATION & ELEVATION OF WATER TABLE
-  GROUNDWATER CONTOUR
-  INDICATES PREDOMINANT FLOW DIRECTION

-  Well decommissioned in Sept 2010.
-  Wells decommissioned previously.

**NOTES:**

1. TOPOGRAPHY BASED ON AERIAL SURVEY BY:  
LOCKWOOD SURVEY  
36 KARLAN DRIVE  
ROCHESTER NEW YORK
2. HORIZONTAL DATUM IS BASED ON NAD83 PER SENECA ARMY DEPOT SEAD 26A MONUMENTS SURVEY CONTROL COORDINATES DATED 1994.
3. VERTICAL DATUM IS BASED ON NAD88.

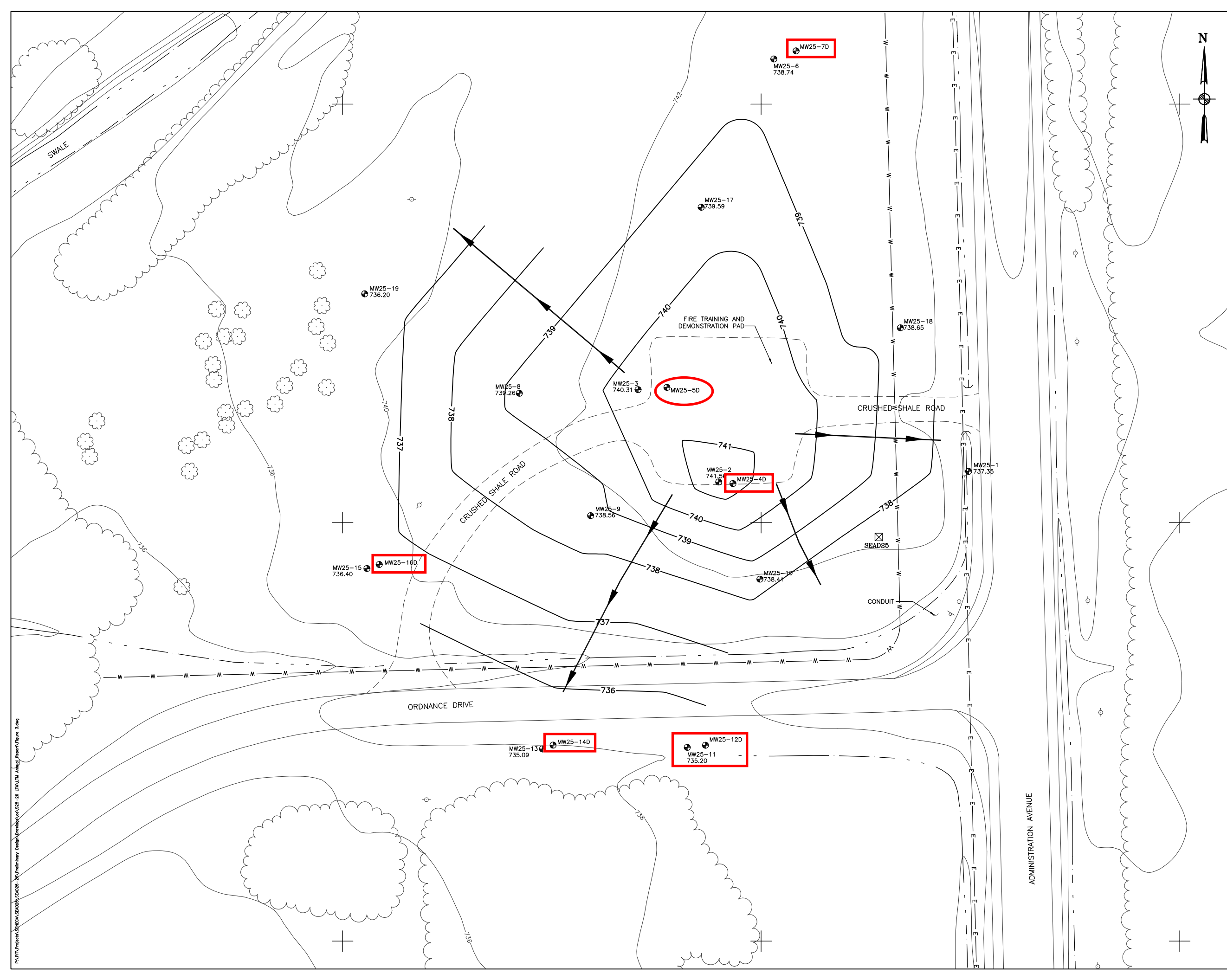


CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT  
Well Decommissioning Report**

DEPT. ENVIRONMENTAL ENGINEERING Dwg. No. 744538-05200

**Figure 9  
Wells Decommissioned  
SEAD-25**

SCALE AS SHOWN DATE JANUARY 2007 REV



P:\VP\Projects\SENECA\SEAD25\SEAD25-26 Preliminary Design\Drawings\Fig 9-26 LTA\LTW\_Aerial\_Report\Figure 3.dwg  
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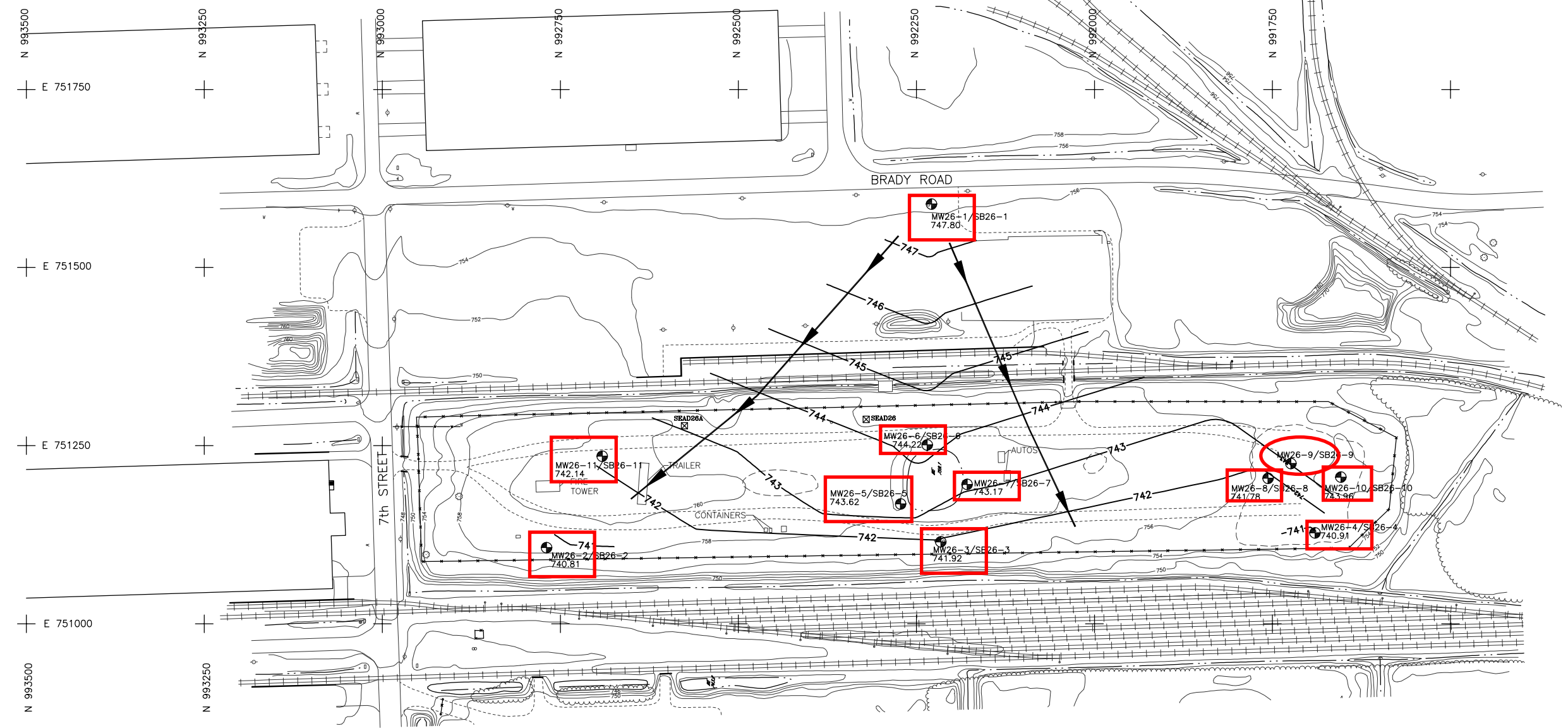
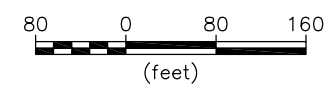


### LEGEND

- DRAINAGE DITCH
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- RAILROAD
- GROUND SURFACE ELEVATION CONTOUR
- UNDERGROUND ELECTRIC UTILITY LINE
- UNDERGROUND WATER UTILITY LINE
- ROAD SIGN
- OVERHEAD UTILITY POLE
- HYDRANT
- MANHOLE
- UTILITY BOX
- DECIDUOUS TREE
- COORD. GRID (250' GRID)
- POLE
- SEAD-26 SURVEY MONUMENT
- MONITORING WELL LOCATION & ELEVATION OF WATER TABLE
- GROUNDWATER CONTOUR
- INDICATES PREDOMINANT FLOW DIRECTION

- Well decommissioned in Sept 2010.
- Well decommissioned previously.

- NOTES:**
1. TOPOGRAPHY BASED ON AERIAL SURVEY BY:  
LOCKWOOD SURVEY  
36 KARLAN DRIVE  
ROCHESTER NEW YORK
  2. HORIZONTAL DATUM IS BASED ON NAD83 PER SENECA ARMY DEPOT SEAD 26A MONUMENTS SURVEY CONTROL COORDINATES DATED 1994.
  3. VERTICAL DATUM IS BASED ON NAD88.

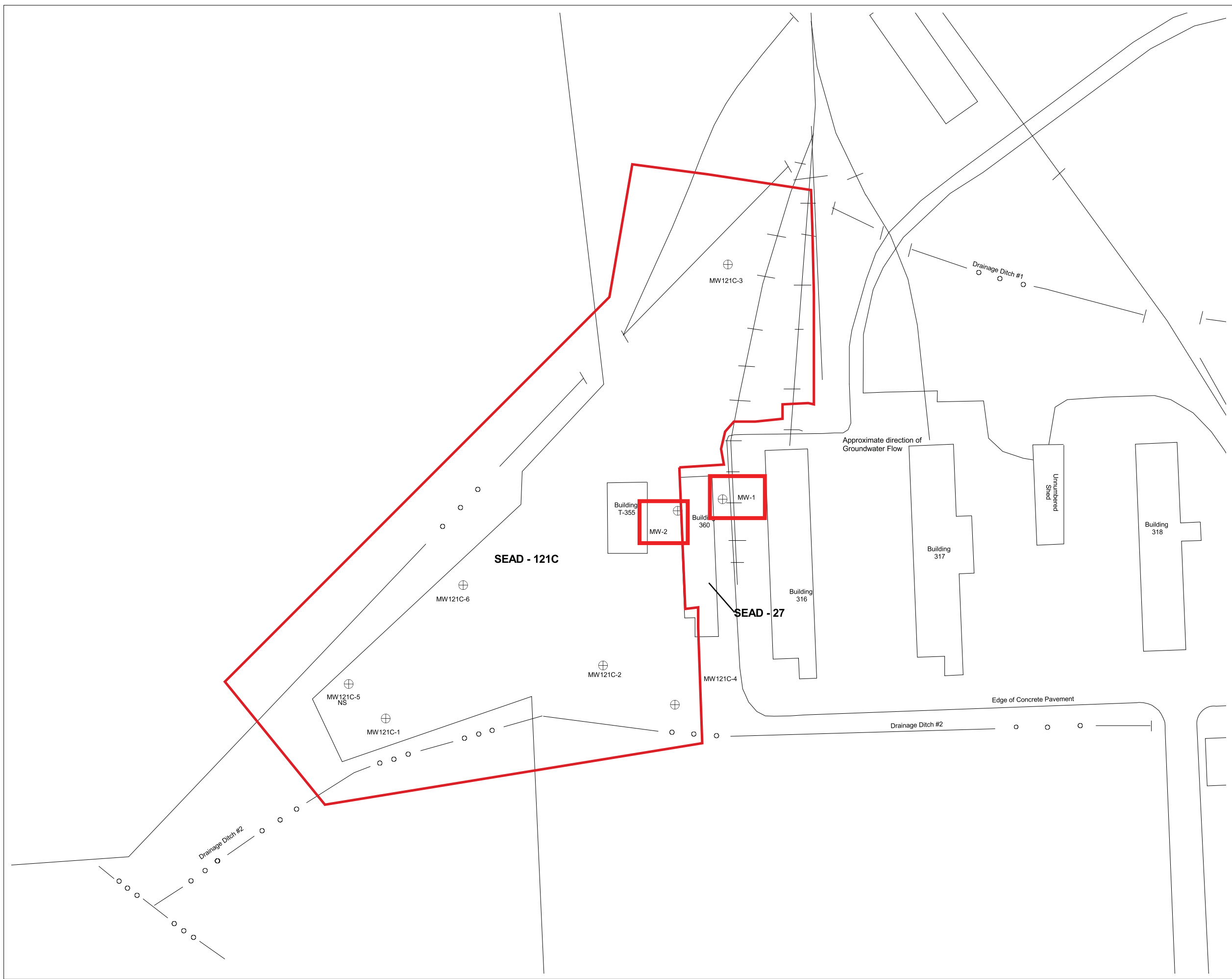


CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT  
Well Decommissioning Report**






DEPT. ENVIRONMENTAL ENGINEERING Dwg. No. 744538-05200

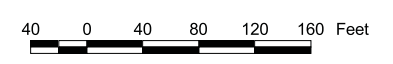
Figure 10  
Wells Decommissioned  
SEAD-26

SCALE AS SHOWN DATE JANUARY 2007 REV



**LEGEND**

-  Railroad Tracks
-  Site Boundary
-  Surface Water
-  Monitoring Well
-  Well decommissioned in Sept 2010.

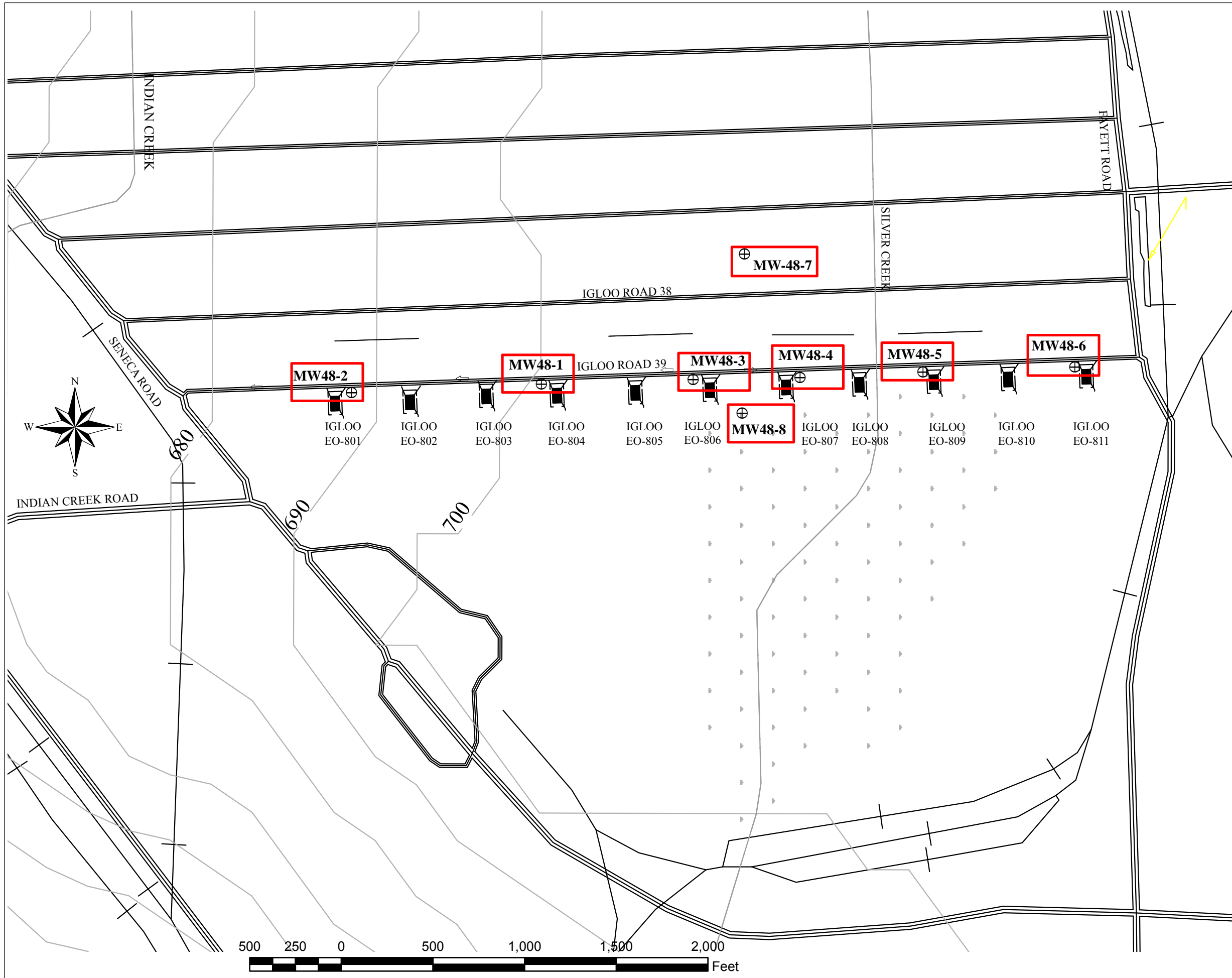


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SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 11  
Wells Decommissioned  
SEAD-27

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LEGEND

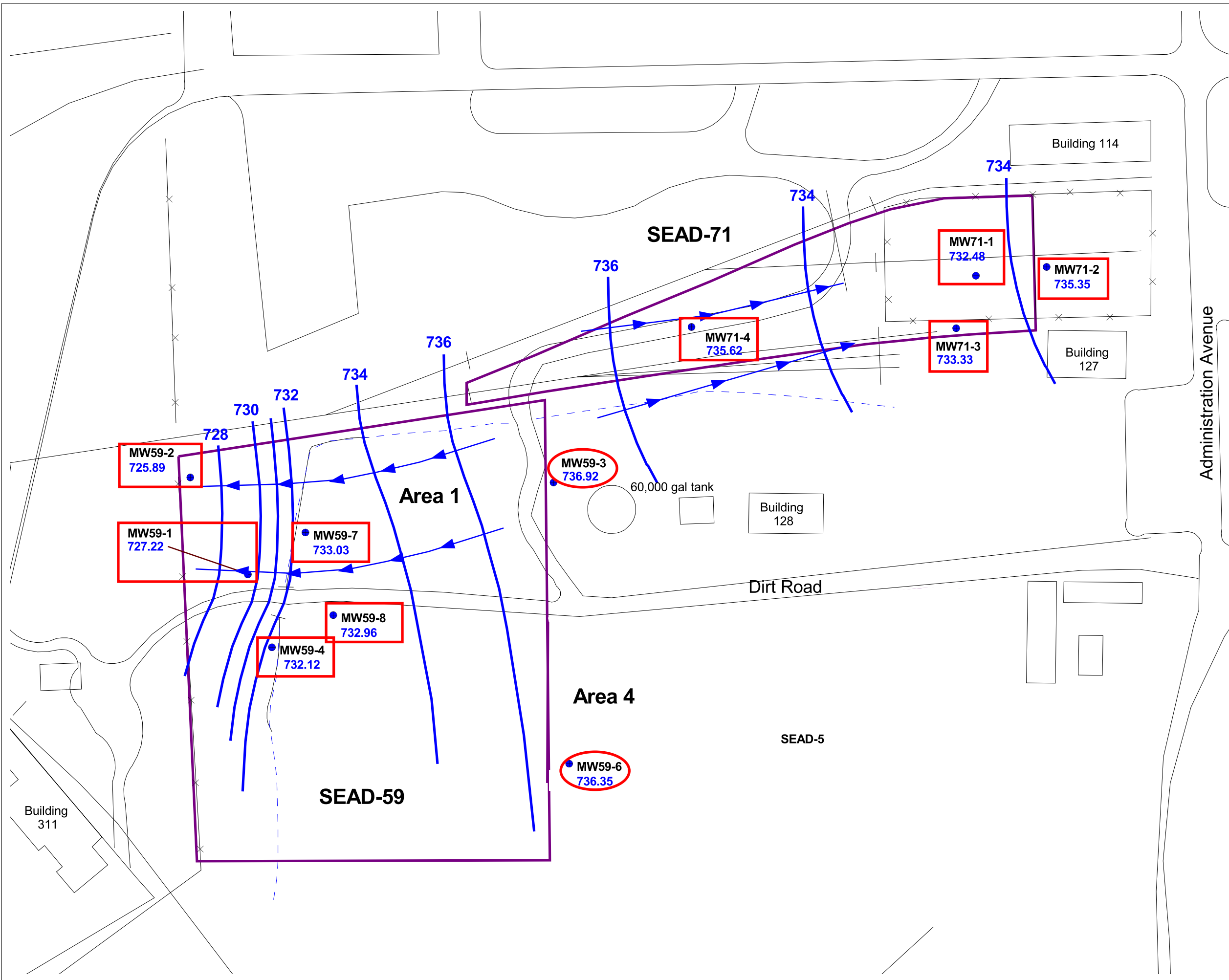
- ⊕ MW48-1 MONITORING WELL AND ID
- ∩ WATERWAY
- ∩ 10-FOOT GROUND ELEVATION
- WELLS DECOMMISSIONED IN SEPT 2010.











**PARSONS**

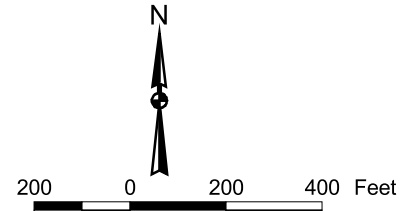
SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 12  
Wells Decommissioned  
SEAD-48



**LEGEND**

-  Groundwater Contour
-  Direction of Groundwater Flow
-  Stream
-  Fence
-  Railroad Tracks
-  Approximate SEAD Boundary
-  Well decommissioned between Sept 2010 and Jan 2011.
-  Well decommissioned previously.



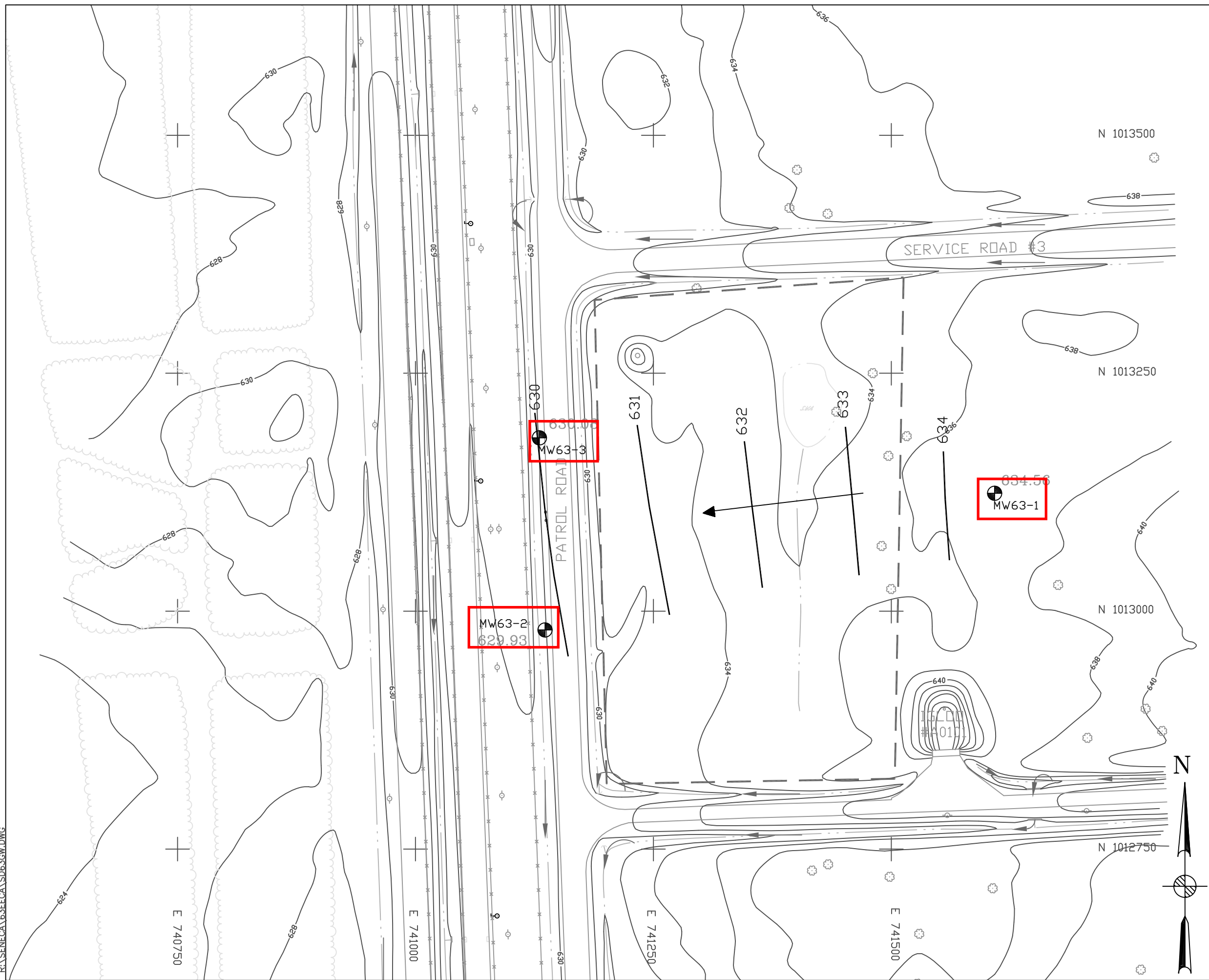
**PARSONS**

SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 13  
Wells Decommissioned  
SEAD-59 and 71



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**LEGEND**

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- GROUND SURFACE ELEVATION CONTOUR
- ROAD SIGN
- DECIDUOUS TREE
- GUIDE POST
- FIRE HYDRANT
- MANHOLE
- CORDINATE GRID (250' GRID)
- POLE
- UTILITY BOX
- MAILBOX/RR SIGNAL
- OVERHEAD UTILITY POLE
- SURVEY MONUMENT

634.56  
 MW63-1  
 MONITORING WELL WITH WATER TABLE ELEVATION

GROUNDWATER ELEVATION CONTOUR (ARROW INDICATES DIRECTION OF FLOW)

GROUNDWATER LEVEL MEASUREMENTS MADE ON 7/06/94

DIRECTION OF SURFACE WATER FLOW

APPROXIMATE AOC BOUNDARY

Well decommissioned in Sept 2010.



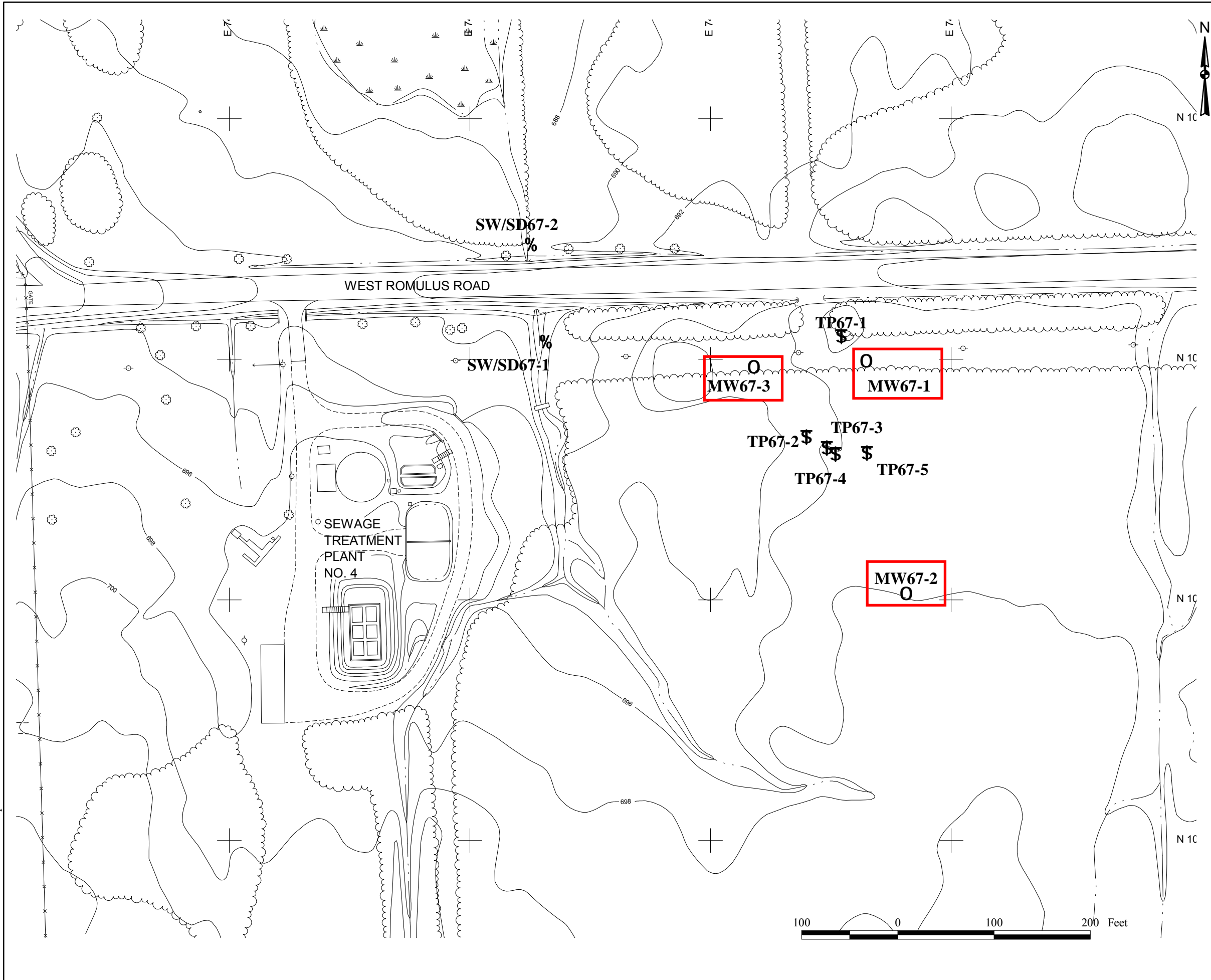
**PARSONS**  
**PARSONS ENGINEERING SCIENCE, INC.**

CLIENT/PROJECT TITLE  
**SENECA ARMY DEPOT ACTIVITY**  
**Well Decommissioning Report**

DEPT. ENVIRONMENTAL ENGINEERING Dwg. No. 734364-01001

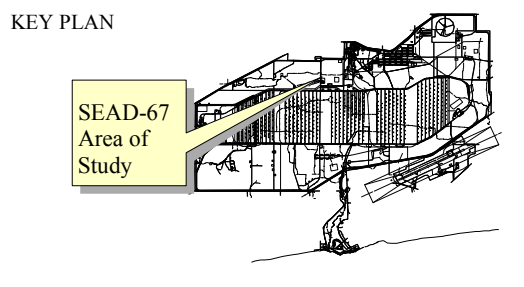
**Figure 14**  
**Wells Decommissioned**  
**SEAD-63**

SCALE AS NOTED DATE SEPTEMBER 1999 REV A



### LEGEND

<span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span>	Well decommissioned in Sept 2010.
	PAVED ROAD
	GROUND CONTOUR AND ELEVATION
	WETLAND
	BRUSH
	CHAIN LINK FENCE
	UTILITY POLE
	APPROXIMATE LOCATION OF FIRE HYDRANT
	RAILROAD
	EXISTING MONITORING WELL AND DESIGNATION
	EXISTING TEST PIT AND DESIGNATION
	PROPOSED MONITORING WELL AND DESIGNATION
	PROPOSED TEST PIT AND DESIGNATION
	\$ Soil Samples
	T Surface Soil Samples
	Z Berm Soil Samples
	% Surface Water/Sediment Samples
	U Surface Water Samples
	I Sediment Samples
	2 GroundWater Samples
	- GeoProbe Samples



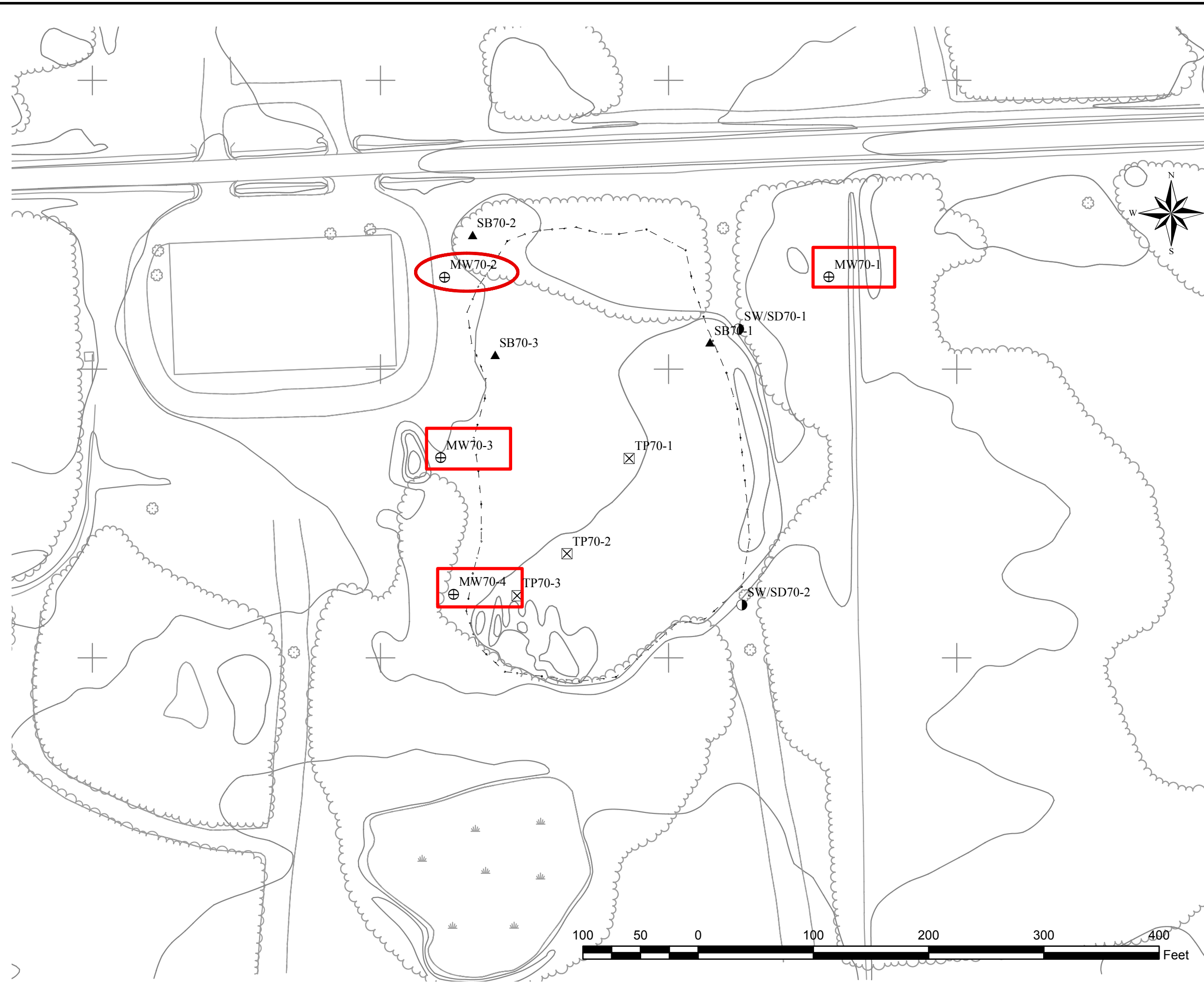
**PARSONS**  
**PARSONS ENGINEERING SCIENCE, INC.**

SENECA ARMY DEPOT ACTIVITY  
 Well Decommissioning Report

Figure 15  
 Wells Decommissioned  
 SEAD-67

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- Legend:
- ⊕ Monitoring Well Location
  - Well decommissioned in Sept 2010.
  - Well decommissioned previously

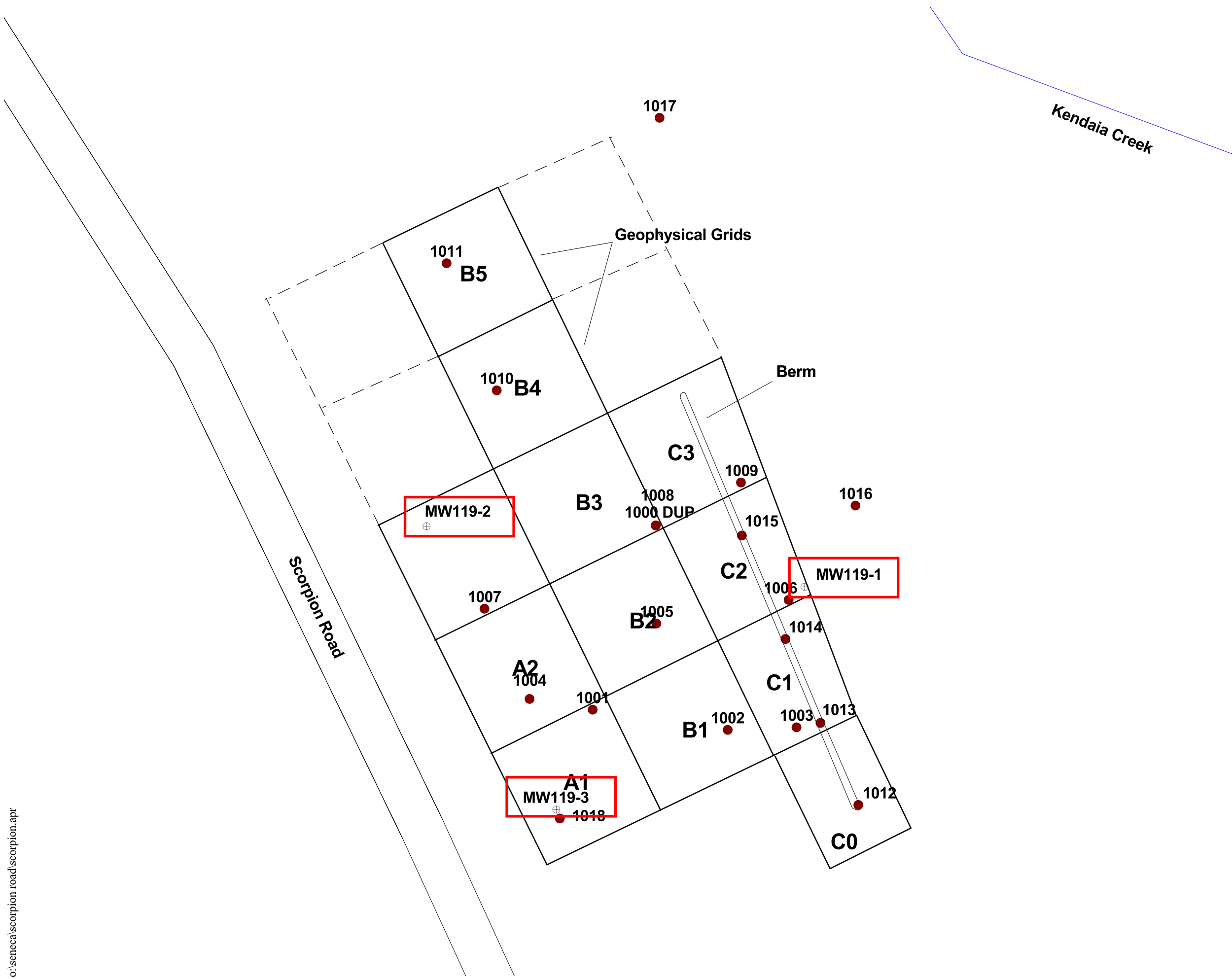


**PARSONS**

**SENECA ARMY DEPOT ACTIVITY**  
Well Decommissioning Report

Figure 16  
Wells Decommissioned  
SEAD-70

FEBRUARY 2011



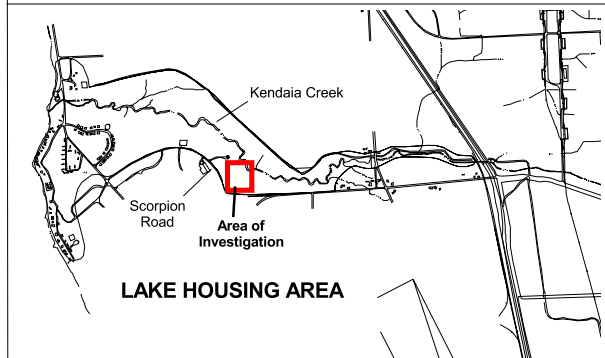
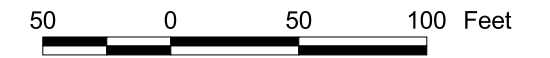
### LEGEND

0001 ● Surface Soil Sample Location

MW119-1 ⊕ Monitoring Well Location

□ Well decommissioned in Jan 2011.

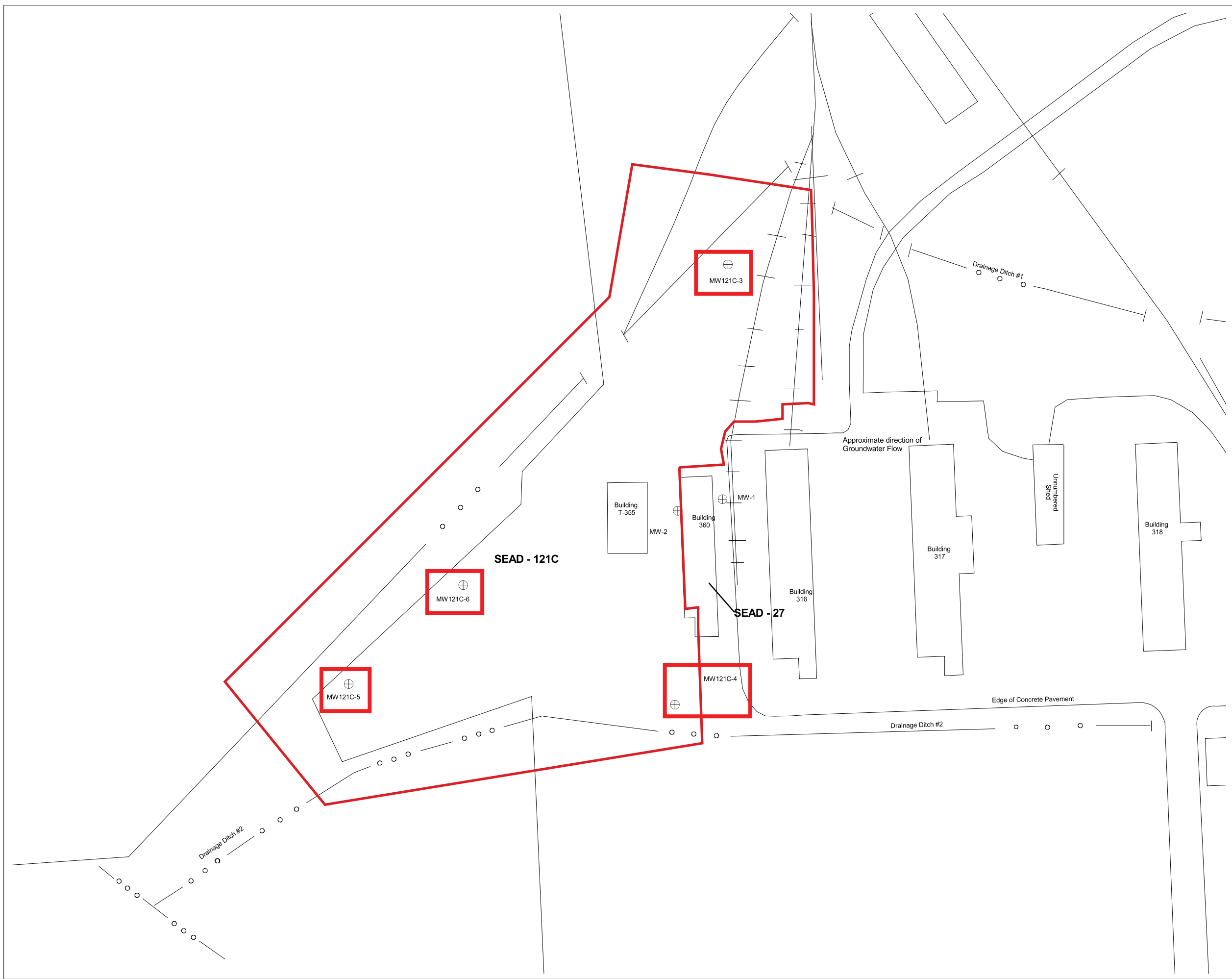
Note: Berm is approximately 4 ft wide by 4 ft high








# PARSONS

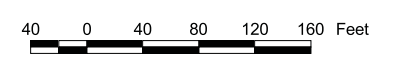
SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 17  
Wells Decommissioned  
SEAD-119B



**LEGEND**

-  Railroad Tracks
-  Site Boundary
-  Surface Water
-  MW121C-6  
Monitoring Well
-  Well decommissioned in Sept 2010.

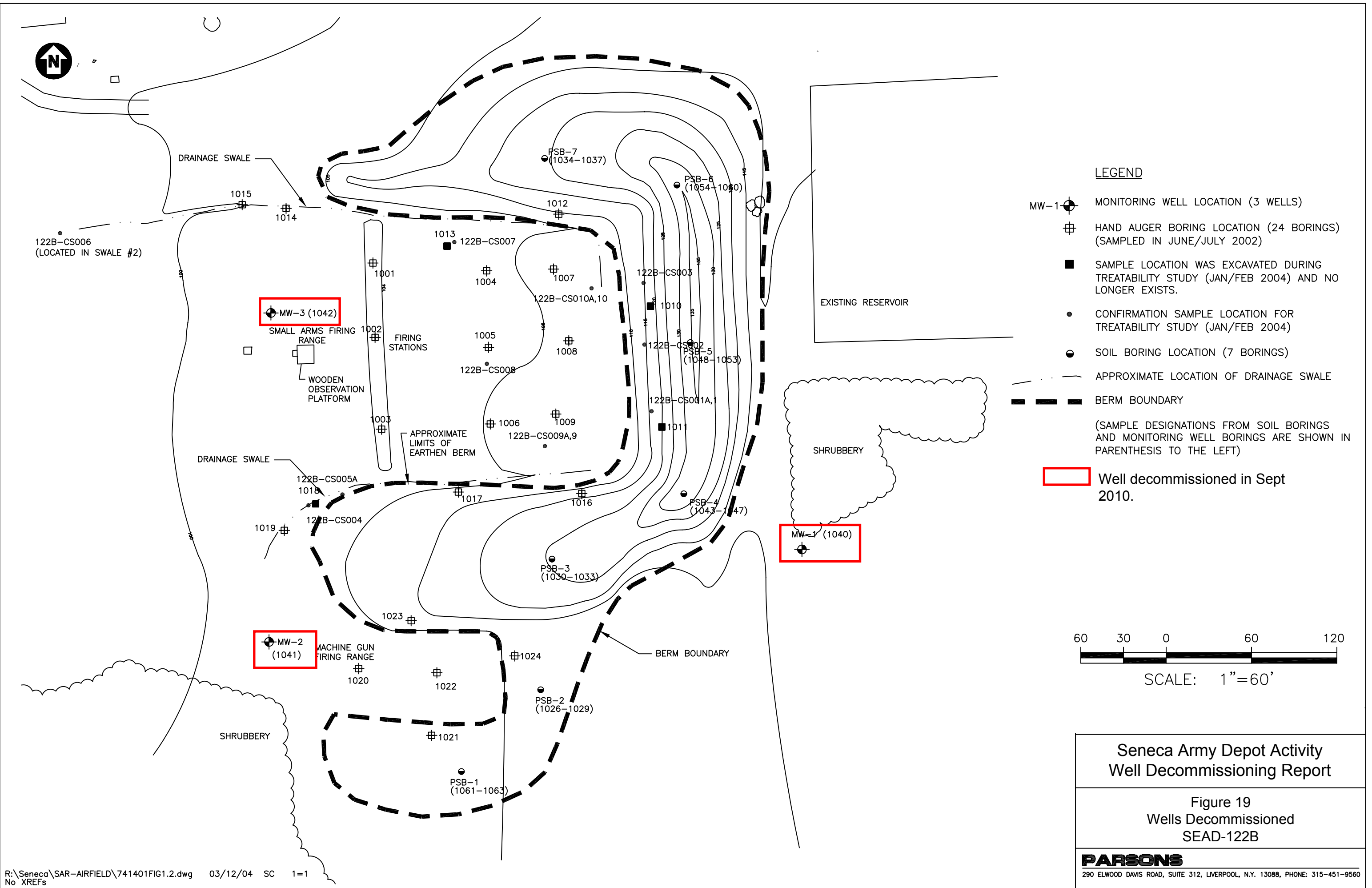


**PARSONS**

SENECA ARMY DEPOT ACTIVITY  
Well Decommissioning Report

Figure 18  
Wells Decommissioned  
SEAD-121C

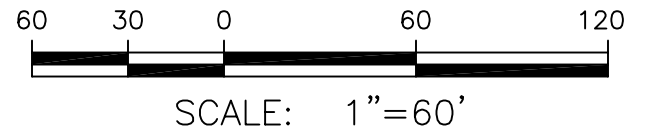




**LEGEND**

- MW-1 MONITORING WELL LOCATION (3 WELLS)
  - HAND AUGER BORING LOCATION (24 BORINGS) (SAMPLED IN JUNE/JULY 2002)
  - SAMPLE LOCATION WAS EXCAVATED DURING TREATABILITY STUDY (JAN/FEB 2004) AND NO LONGER EXISTS.
  - CONFIRMATION SAMPLE LOCATION FOR TREATABILITY STUDY (JAN/FEB 2004)
  - SOIL BORING LOCATION (7 BORINGS)
  - APPROXIMATE LOCATION OF DRAINAGE SWALE
  - BERM BOUNDARY
- (SAMPLE DESIGNATIONS FROM SOIL BORINGS AND MONITORING WELL BORINGS ARE SHOWN IN PARENTHESIS TO THE LEFT)

Well decommissioned in Sept 2010.



**Seneca Army Depot Activity  
Well Decommissioning Report**

Figure 19  
Wells Decommissioned  
SEAD-122B

**PARSONS**  
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

## **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**



U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUND-WATER MONITORING WELL SUMMARY

PROJECT 38-26-0313 83

DATE 13-21 Oct

PROJECT \_\_\_\_\_  
WELL NUMBER \_\_\_\_\_  
1. Height of Casing of \_\_\_\_\_  
2. T \_\_\_\_\_

WELL NUMBER	MW-18	MW-19	MW-20	MW-22	
1. Height of Monitoring Well Casing above ground level	30"	30"	30"	30"	30"
2. Total Depth of Well below ground level	9	9	8' 10"	9	17' 5"
3. Depth to Top of Well Screen below ground level	4	4	3' 10"	4	12' 5"
4. Well Screen Length	5	5	5	5	5
5. Well Screen Slot Size	0.010	0.010	0.010	0.010	0.010
6. Well Diameter	2 in ID	2 in ID	2 in ID	2 in ID	2 in ID
7. Monitoring Well Casing Material	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC
8. Monitoring Well Screen Material	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC
9. Grout Thickness below ground level	3' 10"	4	3	3' 11"	10' 6"
10. Depth to Top of Bentonite Seal below ground level	All wells grouted to surface with bentonite				
11. Bentonite Seal Thickness	3' 10"	4	3	3' 11"	10' 6"
12. Depth to Top of Sand Pack	3' 10"	4	3	3' 11"	10' 6"
13. Depth to Static Water Level from top of monitoring well casing	5' 11"	5' 5½"	6' 8"	6' 6"	18' 8½"
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	19 Oct 87	19 Oct 87	19 Oct 87	19 Oct 87
15. Elevation at ground level	654.6	644.0	644.1	645.1	645.8
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	19 Oct 87	19 Oct 87	19 Oct 87	19 Oct 87
Comments					

U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUND-WATER MONITORING WELL SUMMARY

PROJECT 38-26-0313-88

DATE 13-21 Oct 87

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'	9'	
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	
7. Monitoring Well Casing Material	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	Schd 40 PVC	
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 wells grouted to surface with bentonite				
11. 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					

U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUND-WATER MONITORING WELL SUMMARY

PROJECT Seneca Army Depot 38-26-K928-90

DATE November 1989

WELL NUMBER	MW - 27	MW - 28	MW - 29	MW - 30	MW - 31
1. 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	3.0'	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 WELLS GROUTED TO SURFACE WITH BENTONITE.				
10. Depth to Top of Bentonite Seal below ground level	0	0	0	0	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					
Date Measured					
15. Elevation at ground level					
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					

U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
GROUND-WATER MONITORING WELL SUMMARY

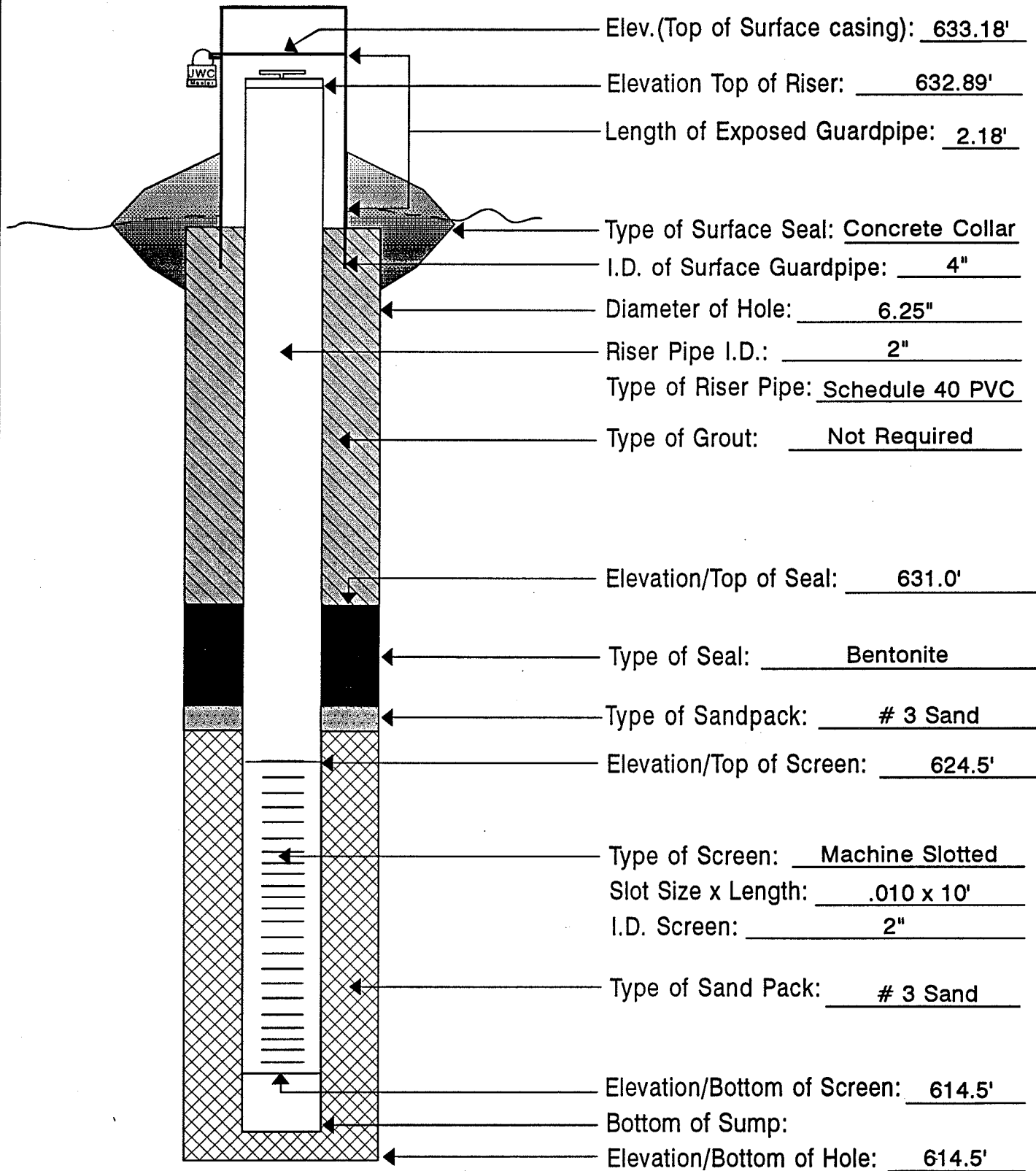
PROJECT Seneca Army Depot 38-26-K928-90

DATE November 1989

WELL NUMBER	MW - 32	MW - 33			
1. Height of Monitoring Well Casing above ground level	1.3'	1.5'			
2. Total Depth of Well below ground level	8.7'	8.5'			
3. Depth to Top of Well Screen below ground level	3.7'	3.5'			
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			
8. Monitoring Well Screen Material	PVC	PVC			
9. Grout Thickness below ground level	ALL WELLS GROUTED TO SURFACE WITH BENTONITE				
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					
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			
Comments					

# OVERBURDEN MONITORING WELL

Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-34)	Drilling Method	Hollow Stem Auger
Date	October 24, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 633.18'

Elevation Top of Riser: 632.89'

Length of Exposed Guardpipe: 2.18'

Type of Surface Seal: Concrete Collar

I.D. of Surface Guardpipe: 4"

Diameter of Hole: 6.25"

Riser Pipe I.D.: 2"

Type of Riser Pipe: Schedule 40 PVC

Type of Grout: Not Required

Elevation/Top of Seal: 631.0'

Type of Seal: Bentonite

Type of Sandpack: # 3 Sand

Elevation/Top of Screen: 624.5'

Type of Screen: Machine Slotted

Slot Size x Length: .010 x 10'

I.D. Screen: 2"

Type of Sand Pack: # 3 Sand

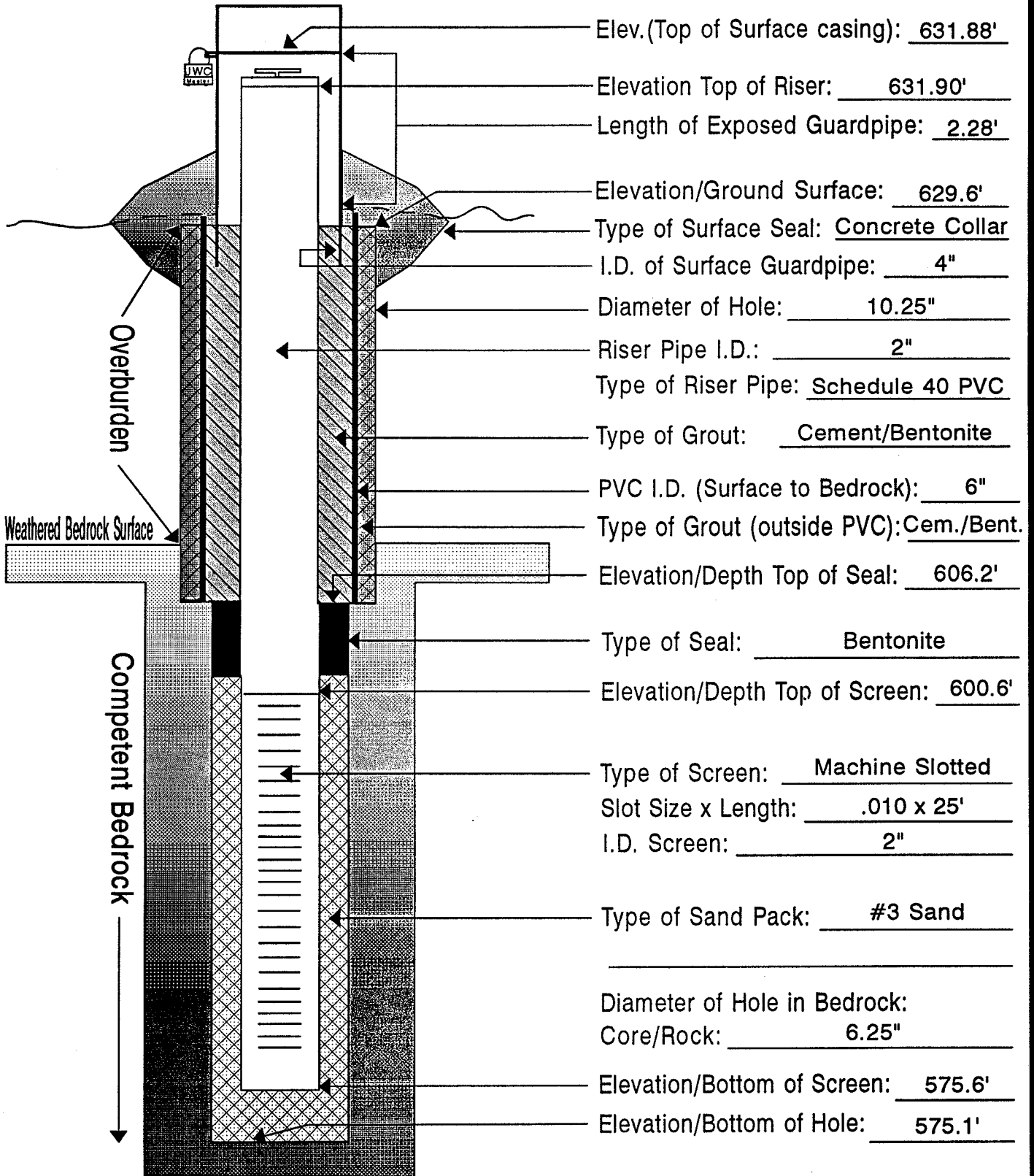
Elevation/Bottom of Screen: 614.5'

Bottom of Sump: 614.5'

Elevation/Bottom of Hole: 614.5'

# BEDROCK MONITORING WELL

Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-35D)	Drilling Method	Hol.Stem Auger/Air Rotary
Date	November 5, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 631.88'

Elevation Top of Riser: 631.90'

Length of Exposed Guardpipe: 2.28'

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'

Type of Seal: Bentonite

Elevation/Depth Top of Screen: 600.6'

Type of Screen: Machine Slotted

Slot Size x Length: .010 x 25'

I.D. Screen: 2"

Type of Sand Pack: #3 Sand

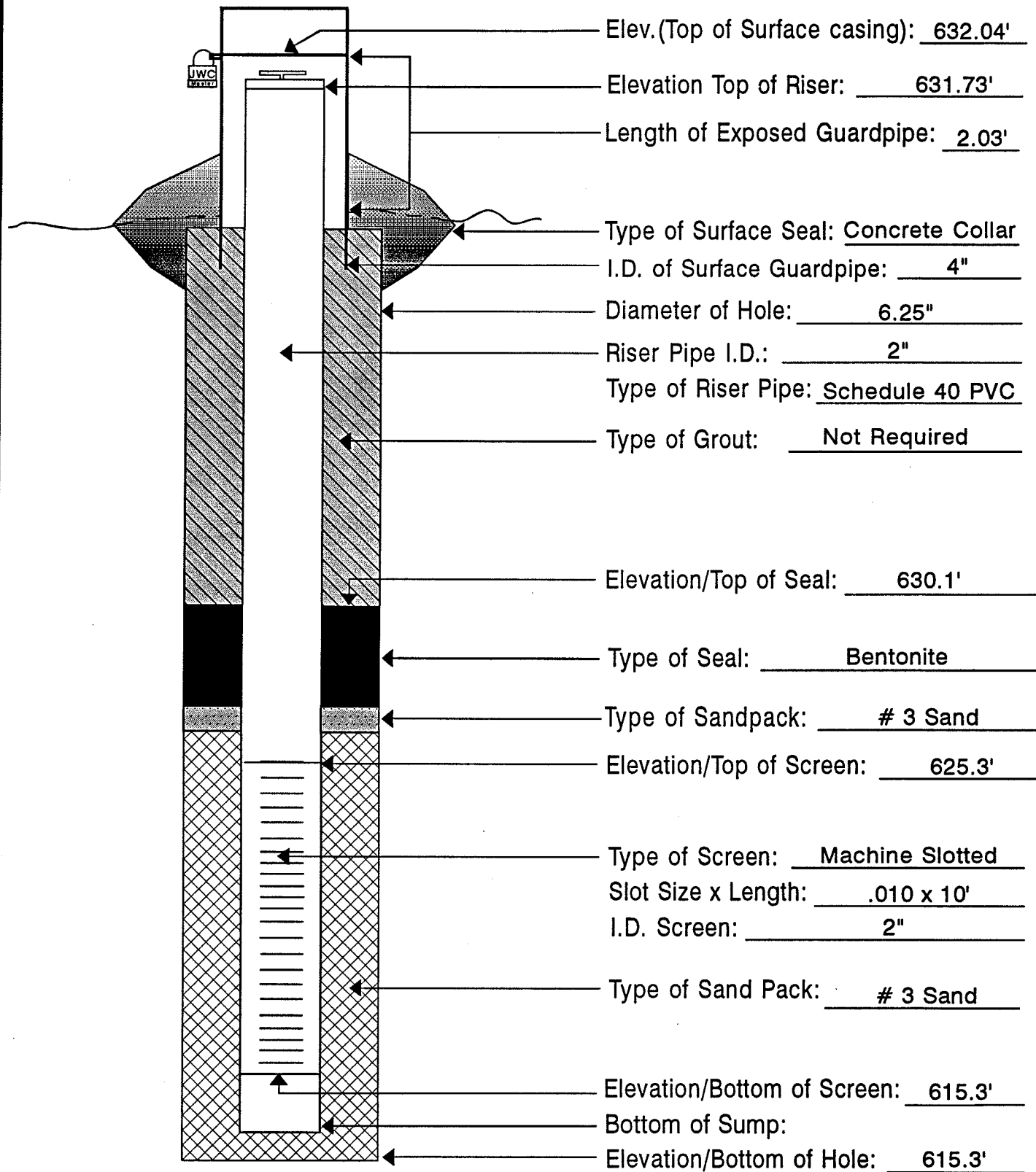
Diameter of Hole in Bedrock:  
Core/Rock: 6.25"

Elevation/Bottom of Screen: 575.6'

Elevation/Bottom of Hole: 575.1'

# OVERBURDEN MONITORING WELL

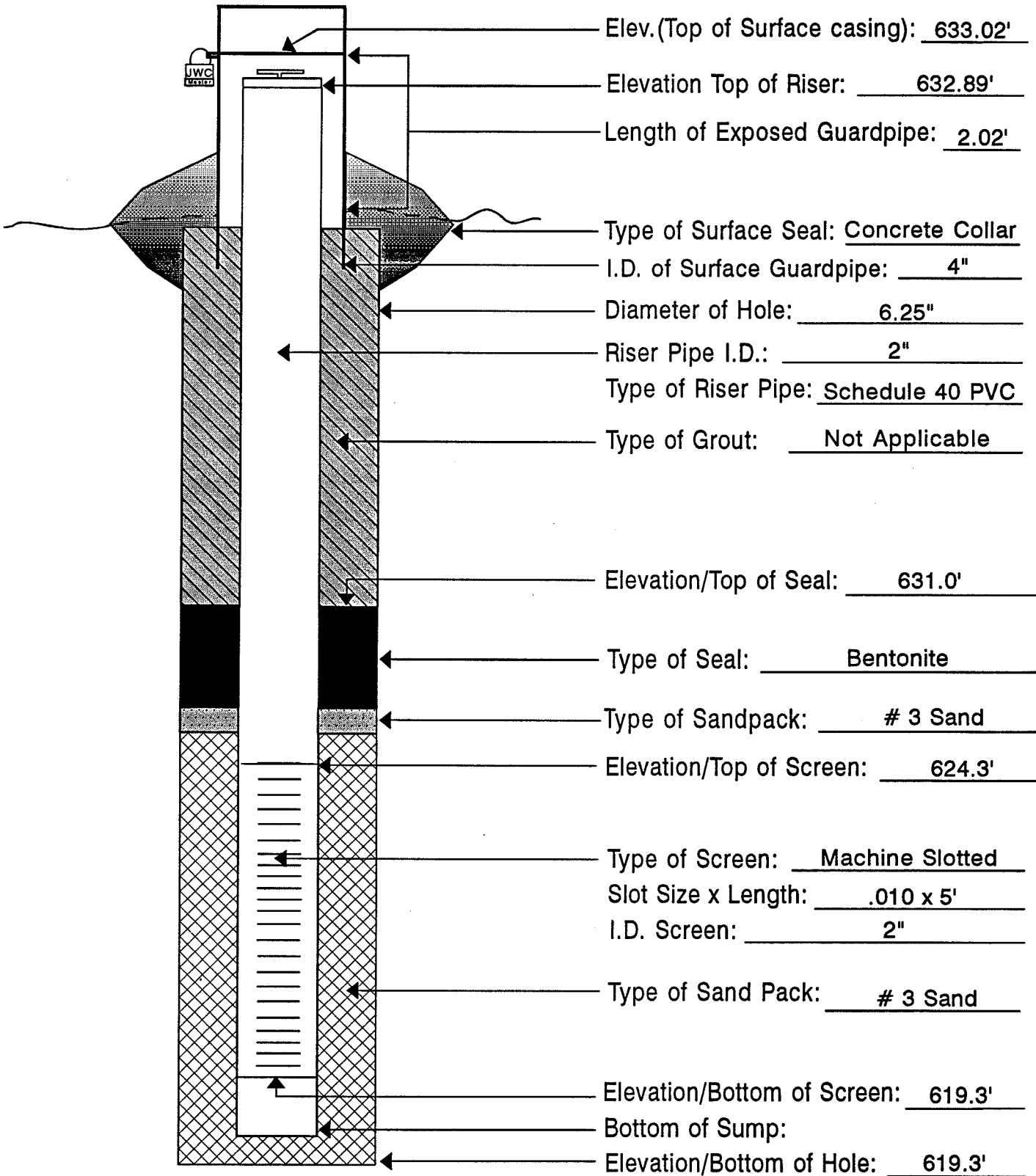
Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-36)	Drilling Method	Hollow Stem Auger
Date	October 30, 1991	Development Method	Teflon Bailer



- Elev. (Top of Surface casing): 632.04'
- Elevation Top of Riser: 631.73'
- Length of Exposed Guardpipe: 2.03'
- Type of Surface Seal: Concrete Collar
- I.D. of Surface Guardpipe: 4"
- Diameter of Hole: 6.25"
- Riser Pipe I.D.: 2"
- Type of Riser Pipe: Schedule 40 PVC
- Type of Grout: Not Required
- Elevation/Top of Seal: 630.1'
- Type of Seal: Bentonite
- Type of Sandpack: # 3 Sand
- Elevation/Top of Screen: 625.3'
- Type of Screen: Machine Slotted
- Slot Size x Length: .010 x 10'
- I.D. Screen: 2"
- Type of Sand Pack: # 3 Sand
- Elevation/Bottom of Screen: 615.3'
- Bottom of Sump:
- Elevation/Bottom of Hole: 615.3'

# OVERBURDEN MONITORING WELL

Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-37)	Drilling Method	Hollow Stem Auger
Date	October 25, 1991	Development Method	Teflon Bailer

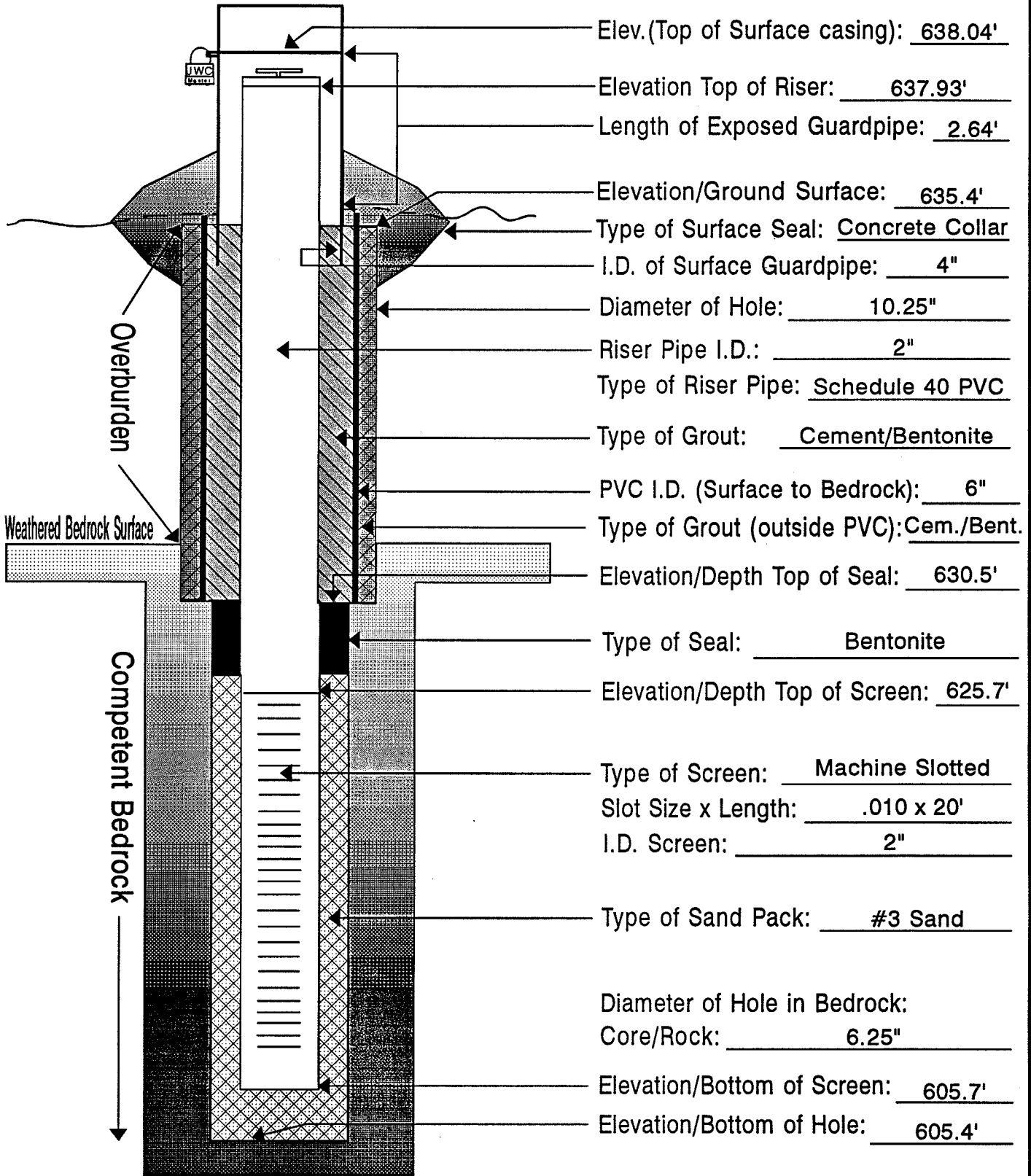


- Elev.(Top of Surface casing): 633.02'
- Elevation Top of Riser: 632.89'
- Length of Exposed Guardpipe: 2.02'
- Type of Surface Seal: Concrete Collar
- I.D. of Surface Guardpipe: 4"
- Diameter of Hole: 6.25"
- Riser Pipe I.D.: 2"
- Type of Riser Pipe: Schedule 40 PVC
- Type of Grout: Not Applicable
- Elevation/Top of Seal: 631.0'
- Type of Seal: Bentonite
- Type of Sandpack: # 3 Sand
- Elevation/Top of Screen: 624.3'
- Type of Screen: Machine Slotted
- Slot Size x Length: .010 x 5'
- I.D. Screen: 2"
- Type of Sand Pack: # 3 Sand
- Elevation/Bottom of Screen: 619.3'
- Bottom of Sump:
- Elevation/Bottom of Hole: 619.3'



# BEDROCK MONITORING WELL

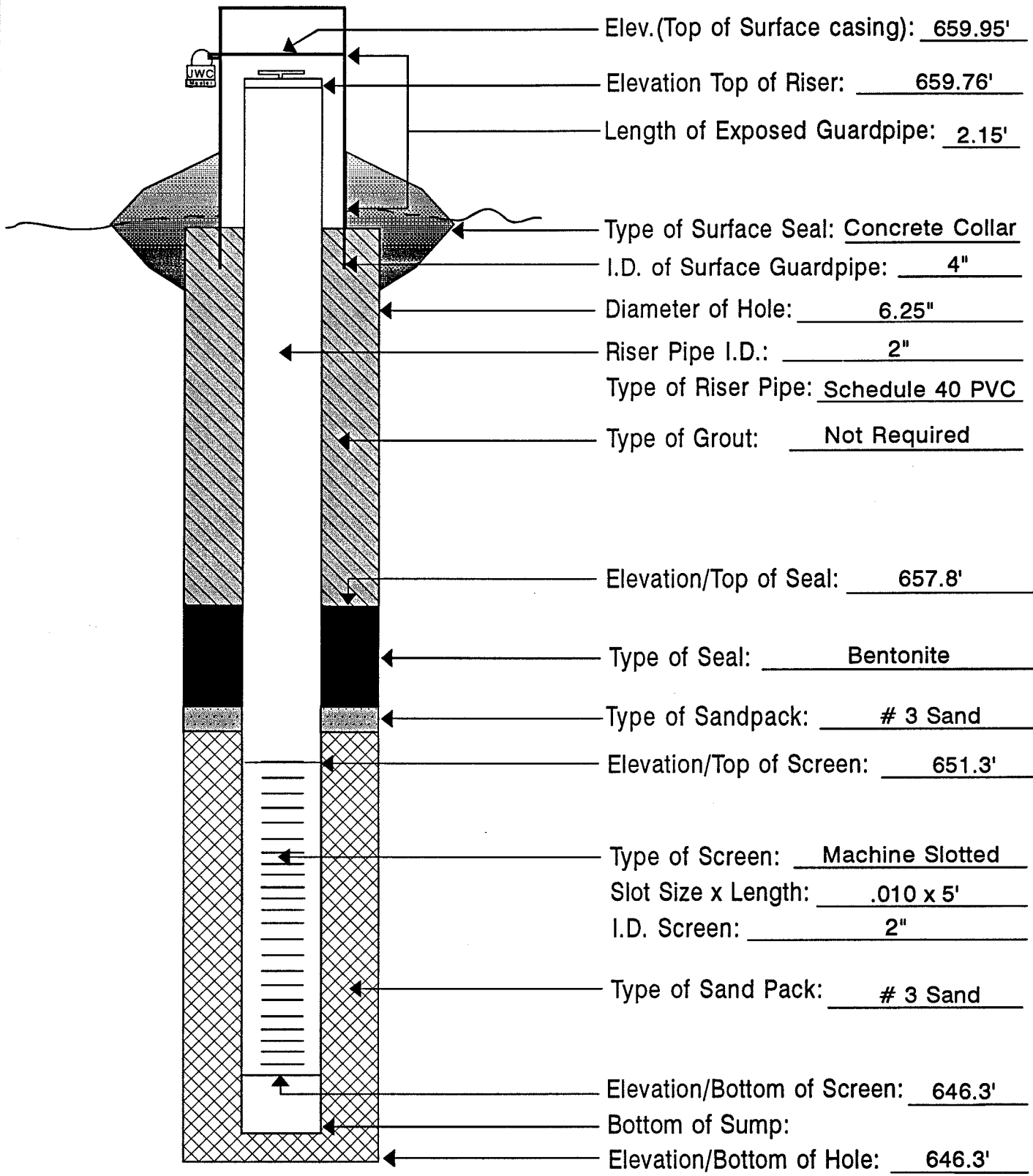
Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-38D)	Drilling Method	Hol.Stem Auger/Air Rotary
Date	November 6, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 638.04'  
 Elevation Top of Riser: 637.93'  
 Length of Exposed Guardpipe: 2.64'  
 Elevation/Ground Surface: 635.4'  
 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: 630.5'  
 Type of Seal: Bentonite  
 Elevation/Depth Top of Screen: 625.7'  
 Type of Screen: Machine Slotted  
 Slot Size x Length: .010 x 20'  
 I.D. Screen: 2"  
 Type of Sand Pack: #3 Sand  
 Diameter of Hole in Bedrock:  
 Core/Rock: 6.25"  
 Elevation/Bottom of Screen: 605.7'  
 Elevation/Bottom of Hole: 605.4'

# OVERBURDEN MONITORING WELL

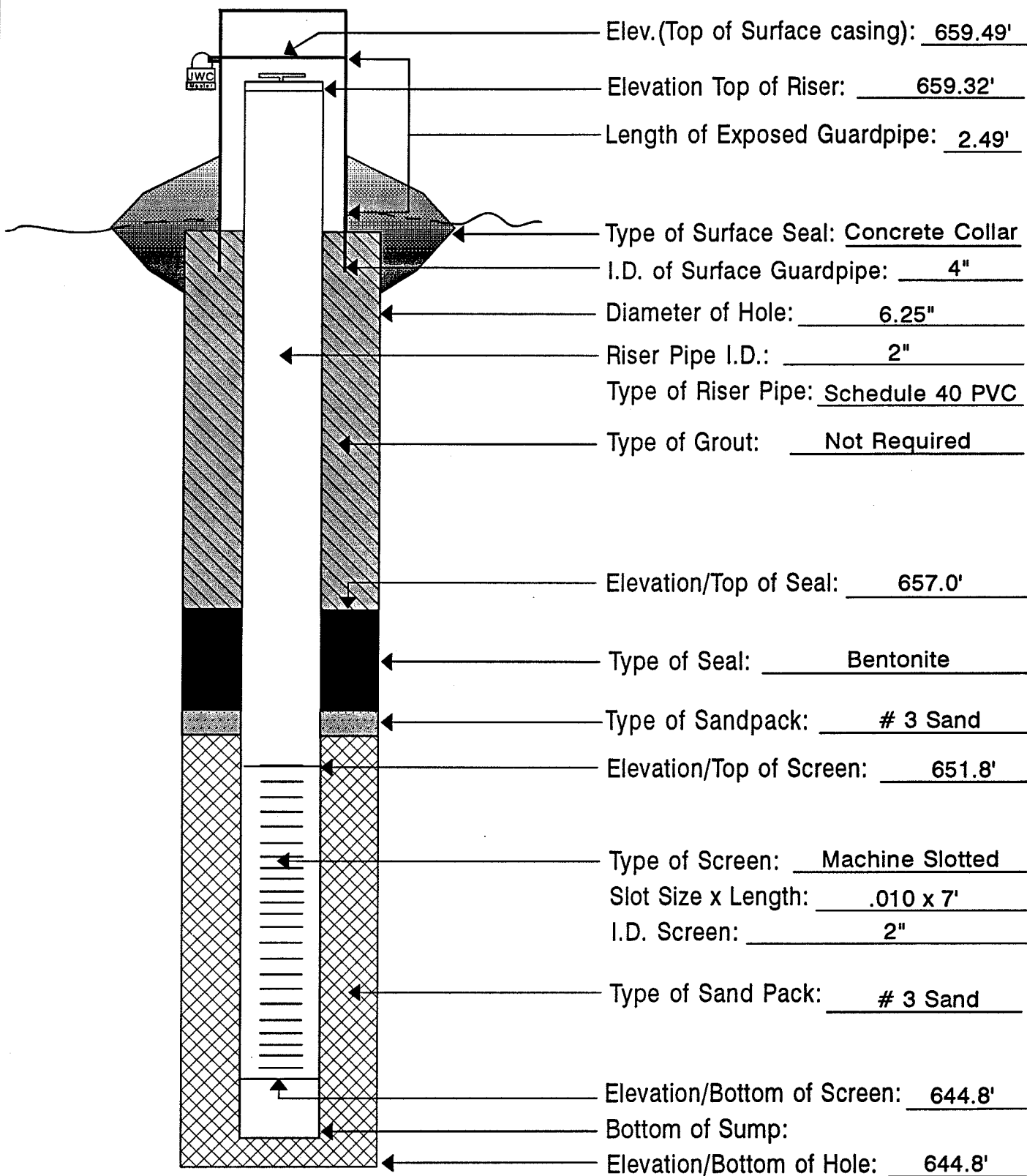
Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-39)	Drilling Method	Hollow Stem Auger
Date	October 28, 1991	Development Method	Teflon Bailer



- Elev.(Top of Surface casing): 659.95'
- Elevation Top of Riser: 659.76'
- Length of Exposed Guardpipe: 2.15'
- Type of Surface Seal: Concrete Collar
- I.D. of Surface Guardpipe: 4"
- Diameter of Hole: 6.25"
- Riser Pipe I.D.: 2"
- Type of Riser Pipe: Schedule 40 PVC
- Type of Grout: Not Required
- Elevation/Top of Seal: 657.8'
- Type of Seal: Bentonite
- Type of Sandpack: # 3 Sand
- Elevation/Top of Screen: 651.3'
- Type of Screen: Machine Slotted
- Slot Size x Length: .010 x 5'
- I.D. Screen: 2"
- Type of Sand Pack: # 3 Sand
- Elevation/Bottom of Screen: 646.3'
- Bottom of Sump:
- Elevation/Bottom of Hole: 646.3'

# OVERBURDEN MONITORING WELL

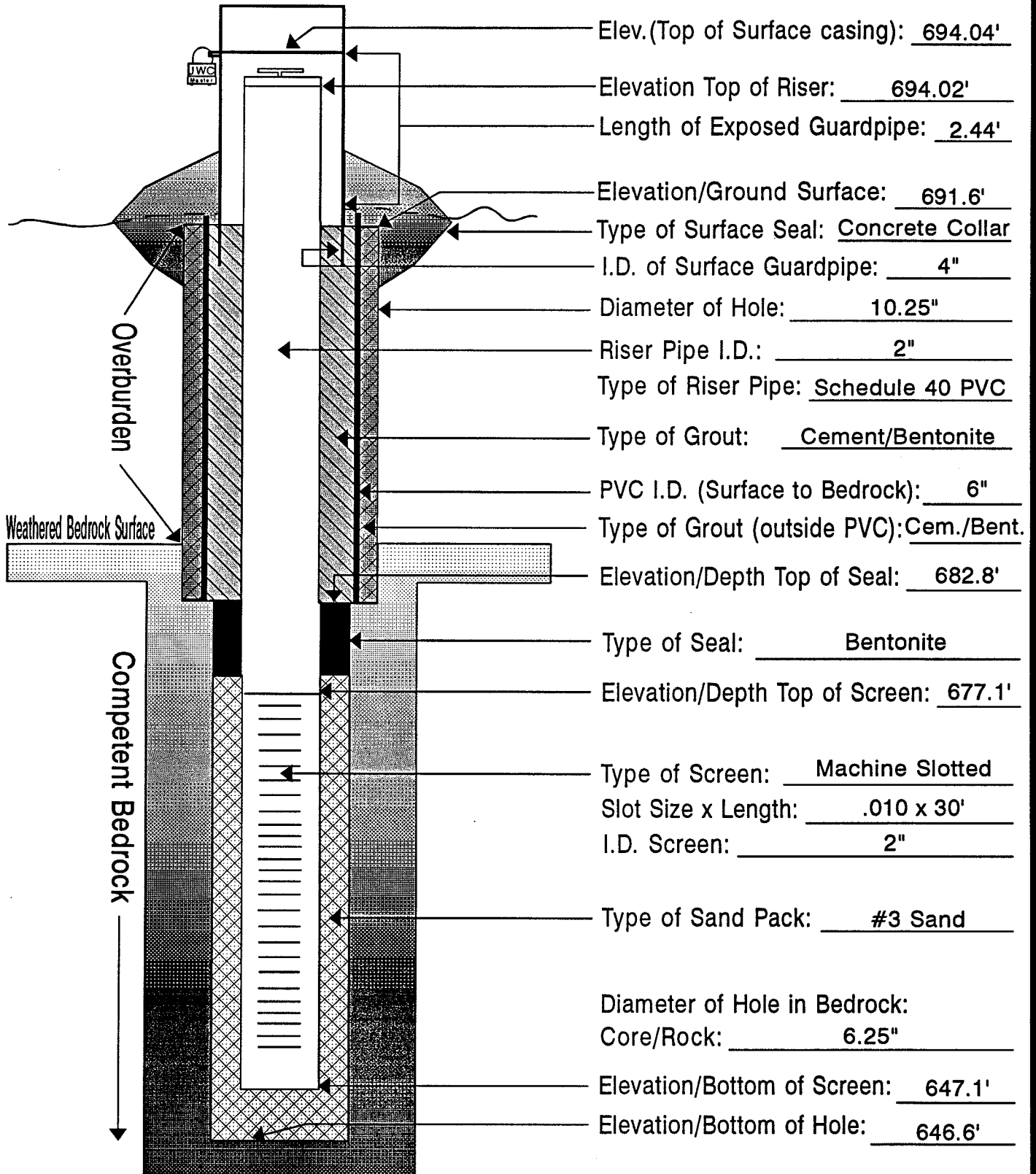
Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-40)	Drilling Method	Hollow Stem Auger
Date	October 29, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 659.49'  
 Elevation Top of Riser: 659.32'  
 Length of Exposed Guardpipe: 2.49'  
 Type of Surface Seal: Concrete Collar  
 I.D. of Surface Guardpipe: 4"  
 Diameter of Hole: 6.25"  
 Riser Pipe I.D.: 2"  
 Type of Riser Pipe: Schedule 40 PVC  
 Type of Grout: Not Required  
 Elevation/Top of Seal: 657.0'  
 Type of Seal: Bentonite  
 Type of Sandpack: # 3 Sand  
 Elevation/Top of Screen: 651.8'  
 Type of Screen: Machine Slotted  
 Slot Size x Length: .010 x 7'  
 I.D. Screen: 2"  
 Type of Sand Pack: # 3 Sand  
 Elevation/Bottom of Screen: 644.8'  
 Bottom of Sump:  
 Elevation/Bottom of Hole: 644.8'

# BEDROCK MONITORING WELL

Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-41D)	Drilling Method	Hol.Stem Auger/Air Rotary
Date	November 6, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 694.04'

Elevation Top of Riser: 694.02'

Length of Exposed Guardpipe: 2.44'

Elevation/Ground Surface: 691.6'

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: 682.8'

Type of Seal: Bentonite

Elevation/Depth Top of Screen: 677.1'

Type of Screen: Machine Slotted

Slot Size x Length: .010 x 30'

I.D. Screen: 2"

Type of Sand Pack: #3 Sand

Diameter of Hole in Bedrock:

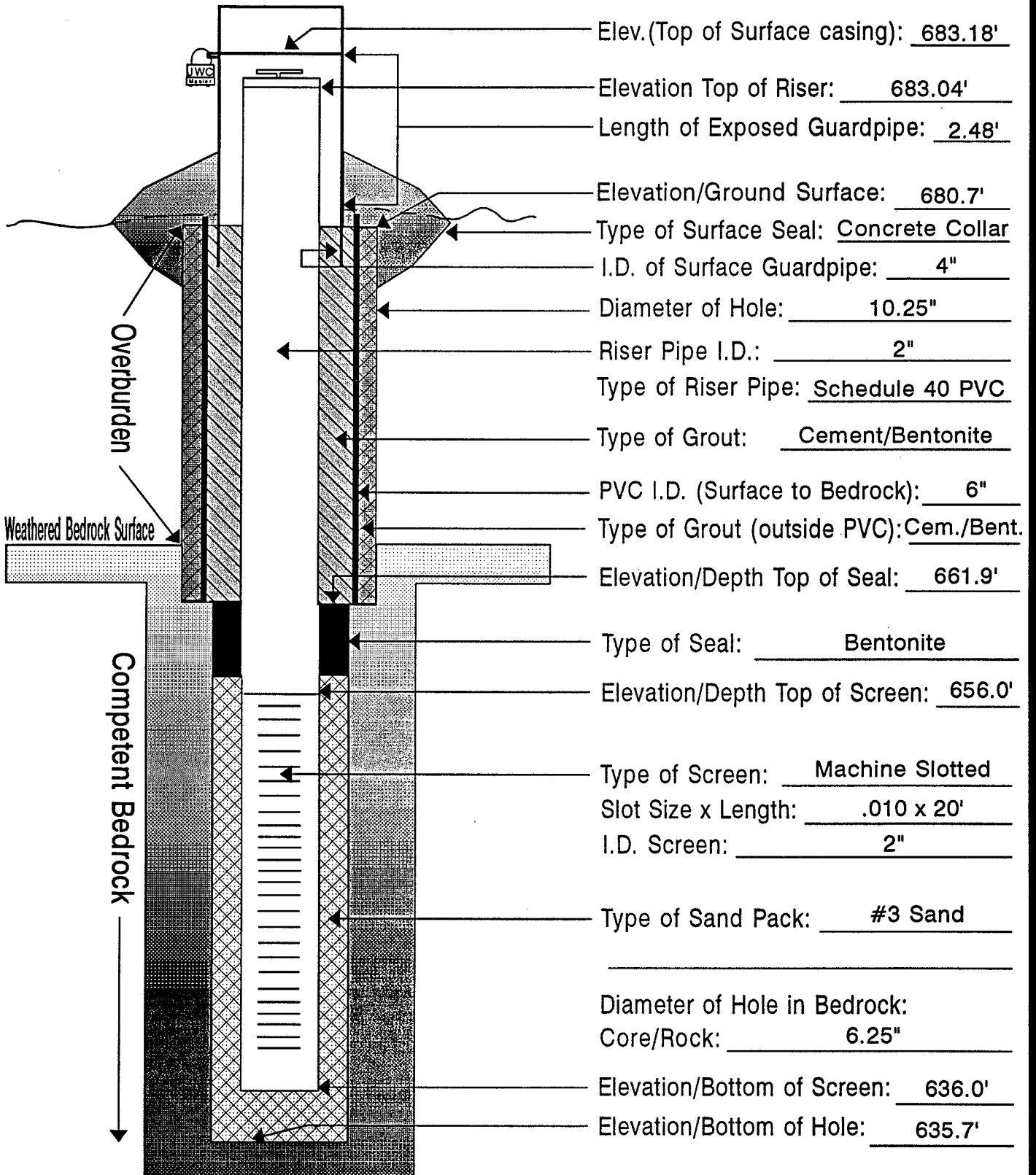
Core/Rock: 6.25"

Elevation/Bottom of Screen: 647.1'

Elevation/Bottom of Hole: 646.6'

# BEDROCK MONITORING WELL

Project	Seneca Army Depot	Driller	Empire Soils, Inc.
Location	Ash Landfill (MW-42D)	Drilling Method	Hol.Stem Auger/Air Rotary
Date	November 8, 1991	Development Method	Teflon Bailer



Elev.(Top of Surface casing): 683.18'

Elevation Top of Riser: 683.04'

Length of Exposed Guardpipe: 2.48'

Elevation/Ground Surface: 680.7'

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: 661.9'

Type of Seal: Bentonite

Elevation/Depth Top of Screen: 656.0'

Type of Screen: Machine Slotted

Slot Size x Length: .010 x 20'

I.D. Screen: 2"

Type of Sand Pack: #3 Sand

Diameter of Hole in Bedrock:

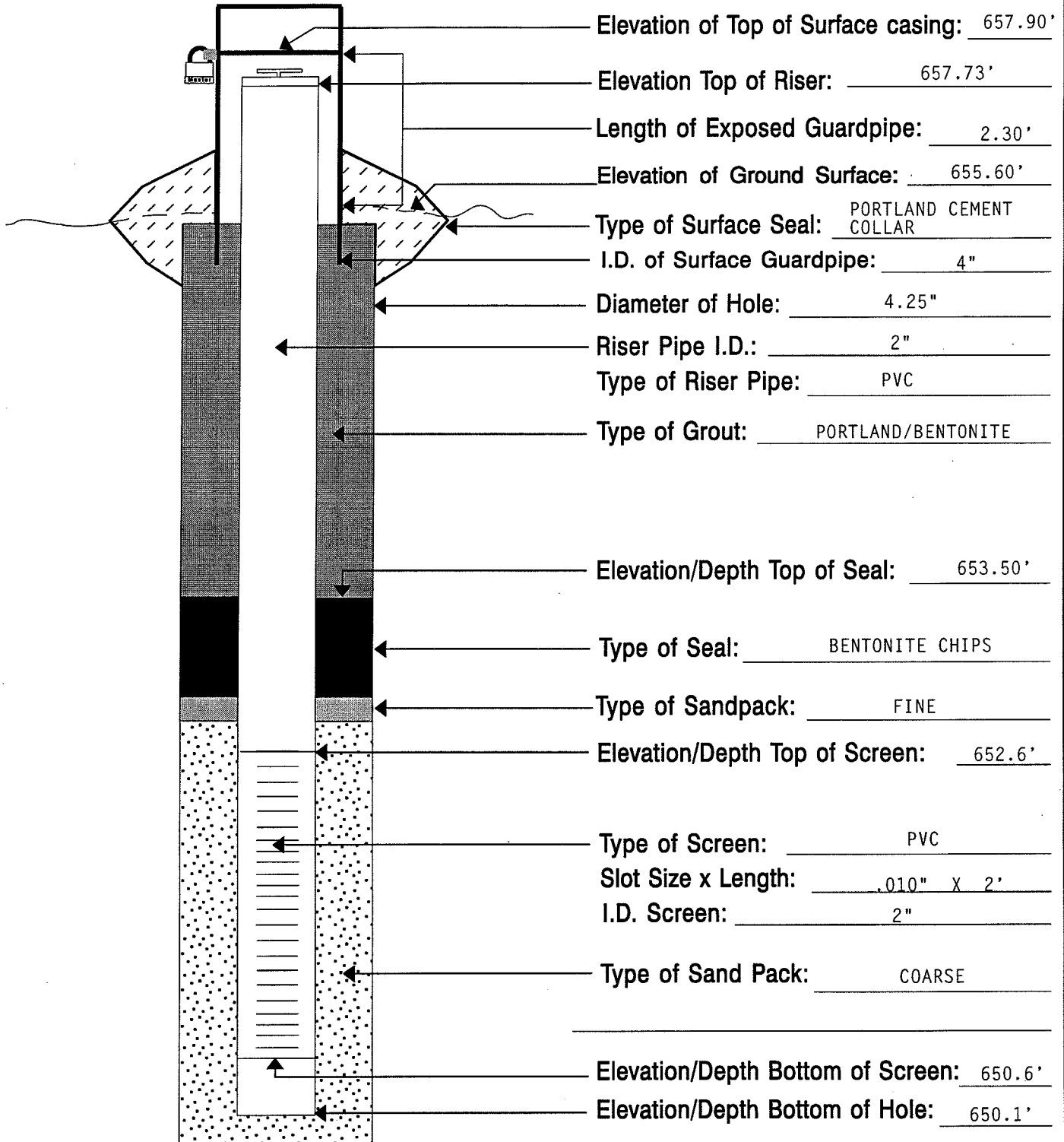
Core/Rock: 6.25"

Elevation/Bottom of Screen: 636.0'

Elevation/Bottom of Hole: 635.7'

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/3/93	WELL NAME	MW-43



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: 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: 653.50'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 652.6'

Type of Screen: PVC

Slot Size x Length: .010" X 2'

I.D. Screen: 2"

Type of Sand Pack: COARSE

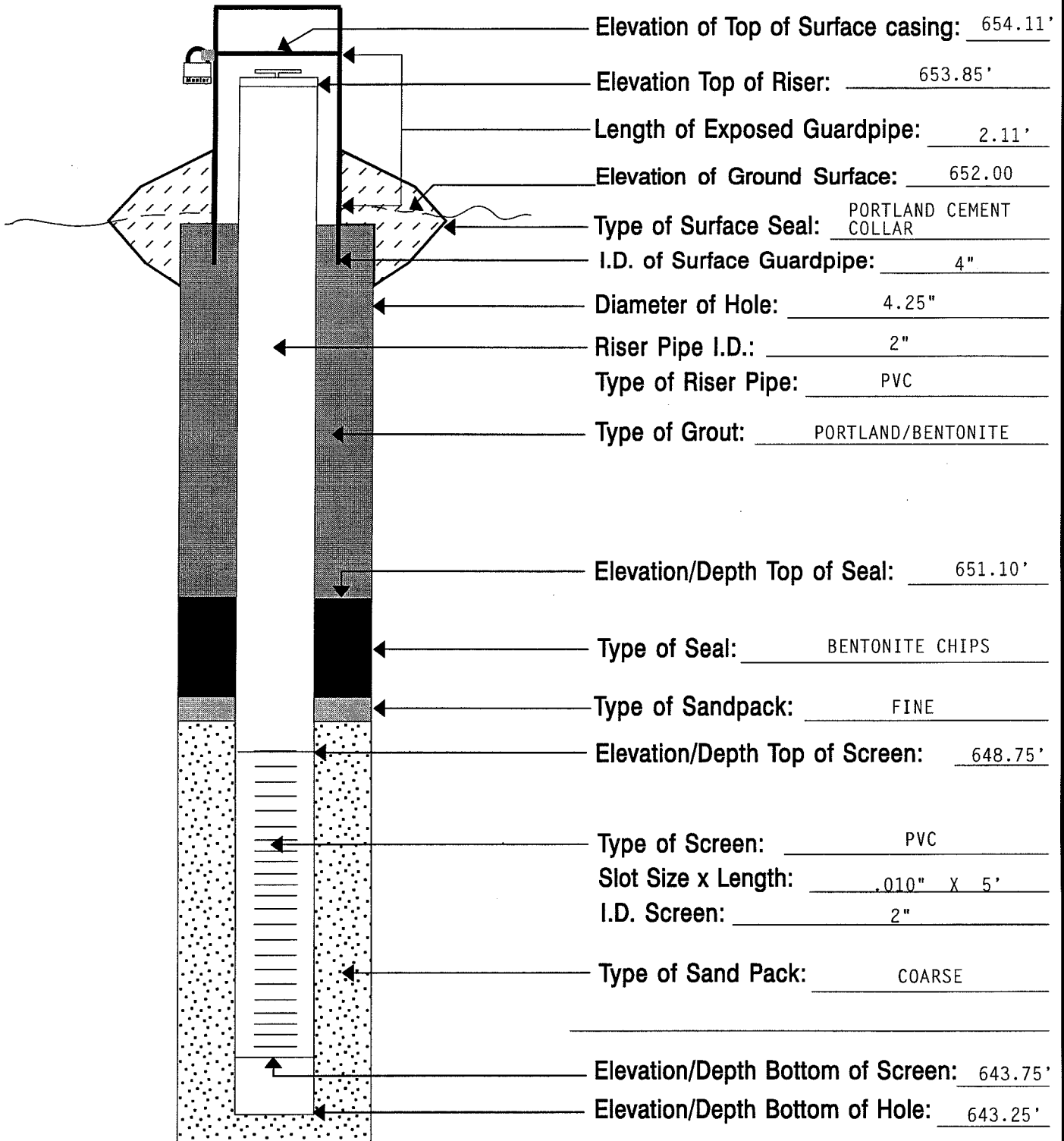
Elevation/Depth Bottom of Screen: 650.6'

Elevation/Depth Bottom of Hole: 650.1'

ALL ELEVATIONS RELATIVE TO MSL

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/3/93	WELL NAME	MW-44



Elevation of Top of Surface casing: 654.11'

Elevation Top of Riser: 653.85'

Length of Exposed Guardpipe: 2.11'

Elevation of Ground Surface: 652.00

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: 651.10'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 648.75'

Type of Screen: PVC

Slot Size x Length: .010" X 5'

I.D. Screen: 2"

Type of Sand Pack: COARSE

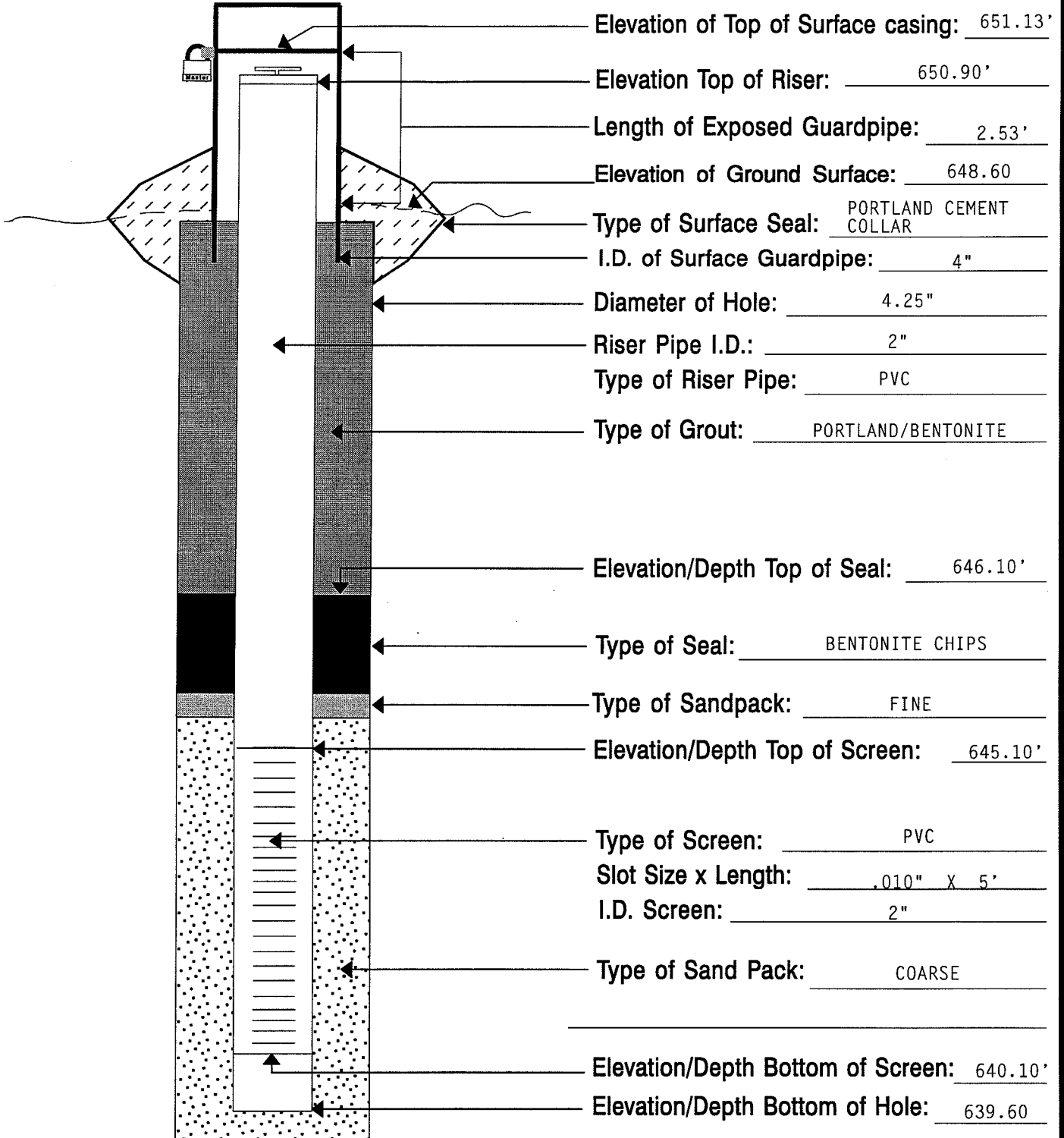
Elevation/Depth Bottom of Screen: 643.75'

Elevation/Depth Bottom of Hole: 643.25'

ALL ELEVATIONS RELATIVE TO MSL

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/5/93	WELL NAME	MW-45



Elevation of Top of Surface casing: 651.13'

Elevation Top of Riser: 650.90'

Length of Exposed Guardpipe: 2.53'

Elevation of Ground Surface: 648.60

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: 646.10'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 645.10'

Type of Screen: PVC

Slot Size x Length: .010" X 5'

I.D. Screen: 2"

Type of Sand Pack: COARSE

Elevation/Depth Bottom of Screen: 640.10'

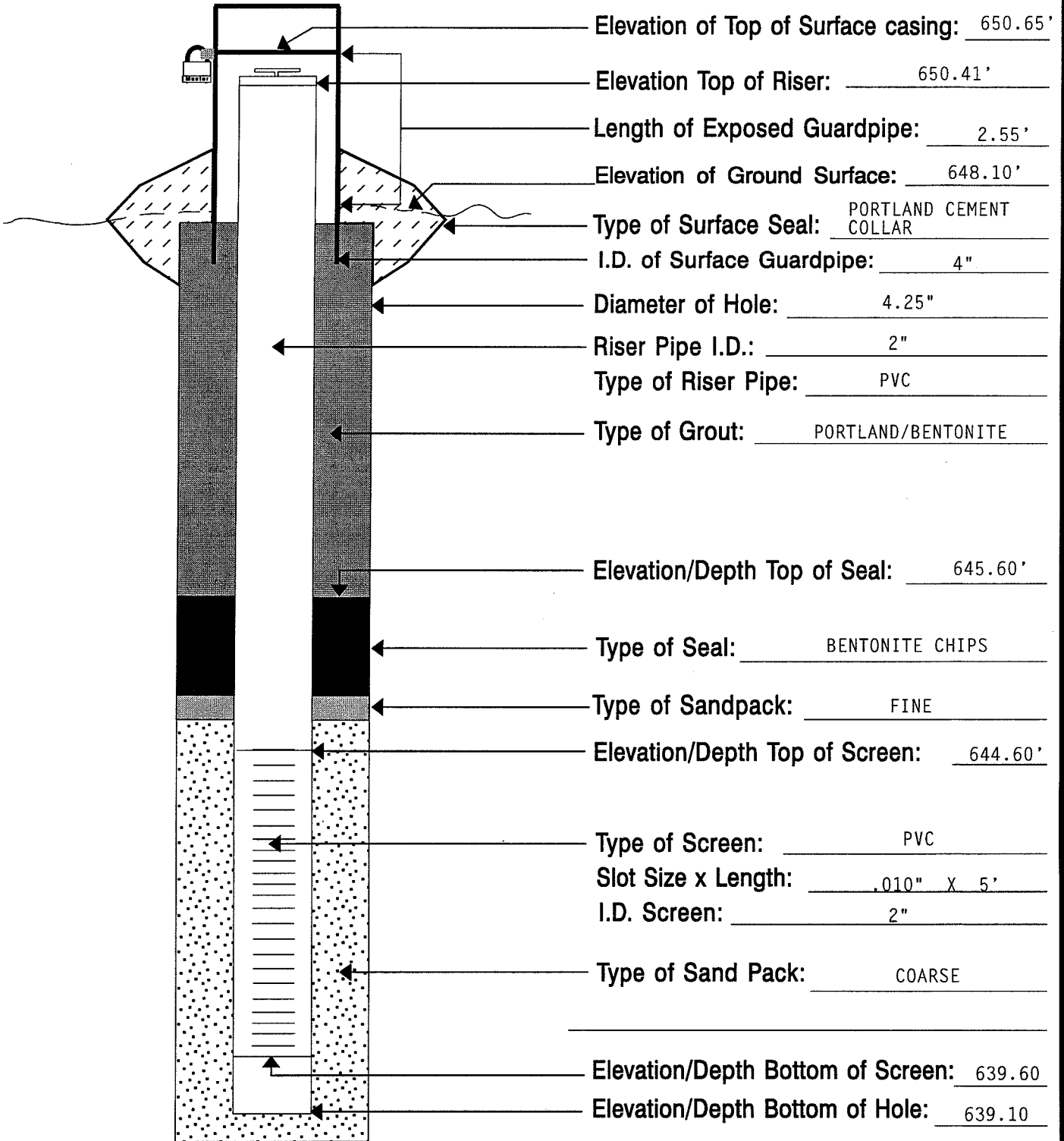
Elevation/Depth Bottom of Hole: 639.60

ALL ELEVATIONS RELATIVE TO MSL



# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/5/93	WELL NAME	MW-46



Elevation of Top of Surface casing: 650.65'

Elevation Top of Riser: 650.41'

Length of Exposed Guardpipe: 2.55'

Elevation of Ground Surface: 648.10'

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: 645.60'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 644.60'

Type of Screen: PVC

Slot Size x Length: .010" X 5'

I.D. Screen: 2"

Type of Sand Pack: COARSE

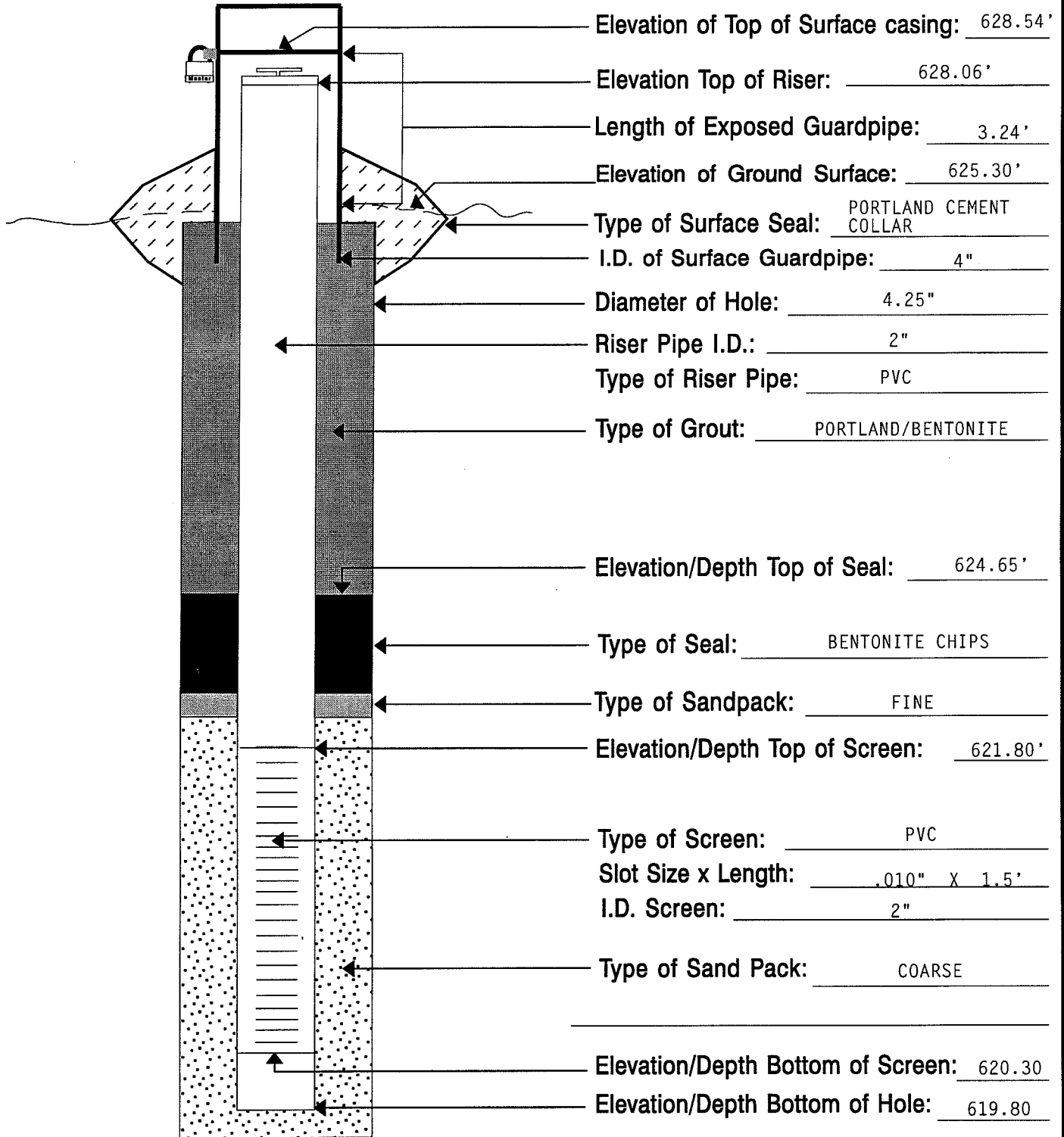
Elevation/Depth Bottom of Screen: 639.60

Elevation/Depth Bottom of Hole: 639.10

ALL ELEVATIONS RELATIVE TO MSL

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/11/93	WELL NAME	MW-47



Elevation of Top of Surface casing: 628.54'

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

Type of Grout: PORTLAND/BENTONITE

Elevation/Depth Top of Seal: 624.65'

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

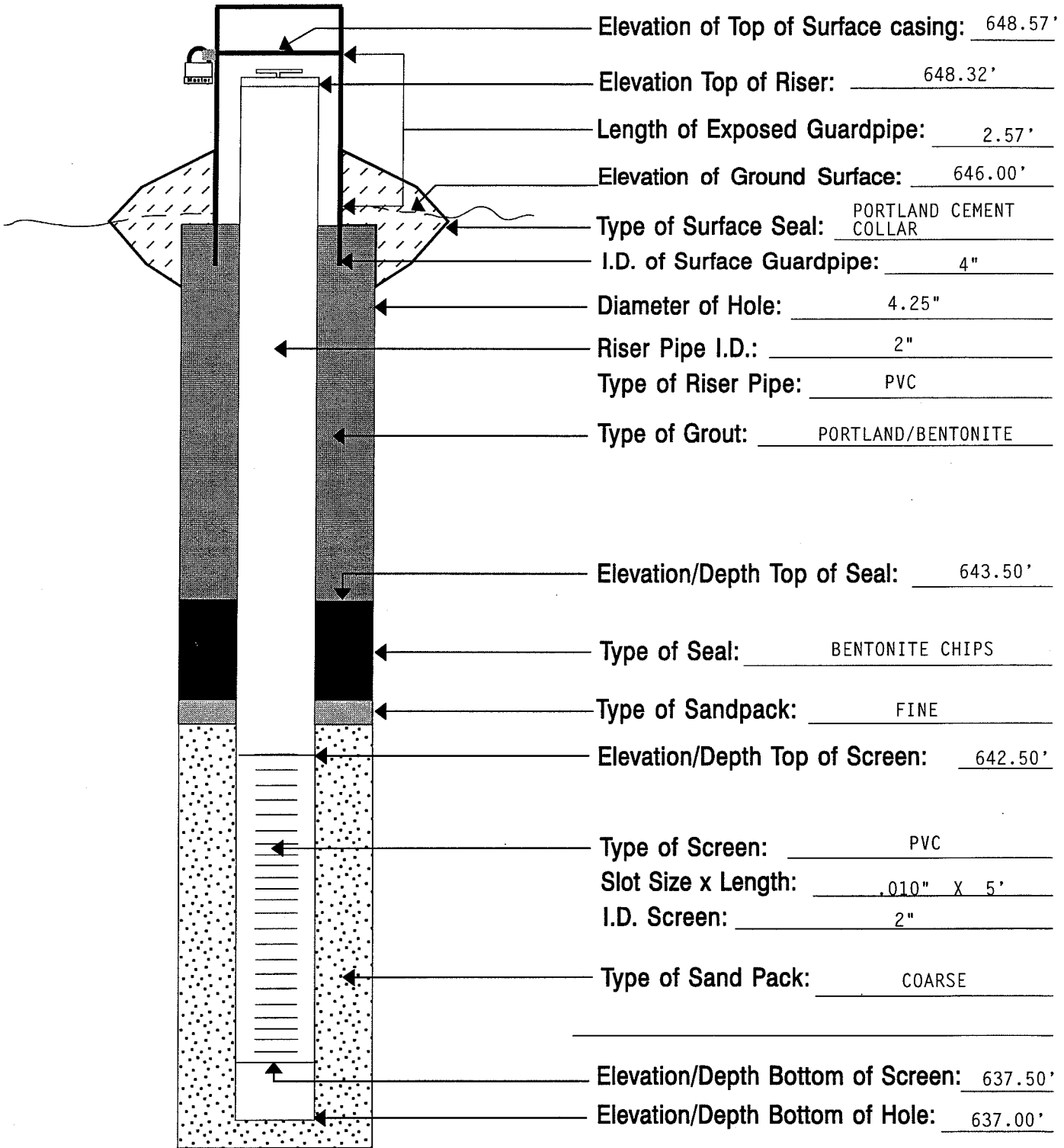
Elevation/Depth Bottom of Screen: 620.30

Elevation/Depth Bottom of Hole: 619.80

ALL ELEVATIONS RELATIVE TO MSL

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/4/93	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: .010" X 5'

I.D. Screen: 2"

Type of Sand Pack: COARSE

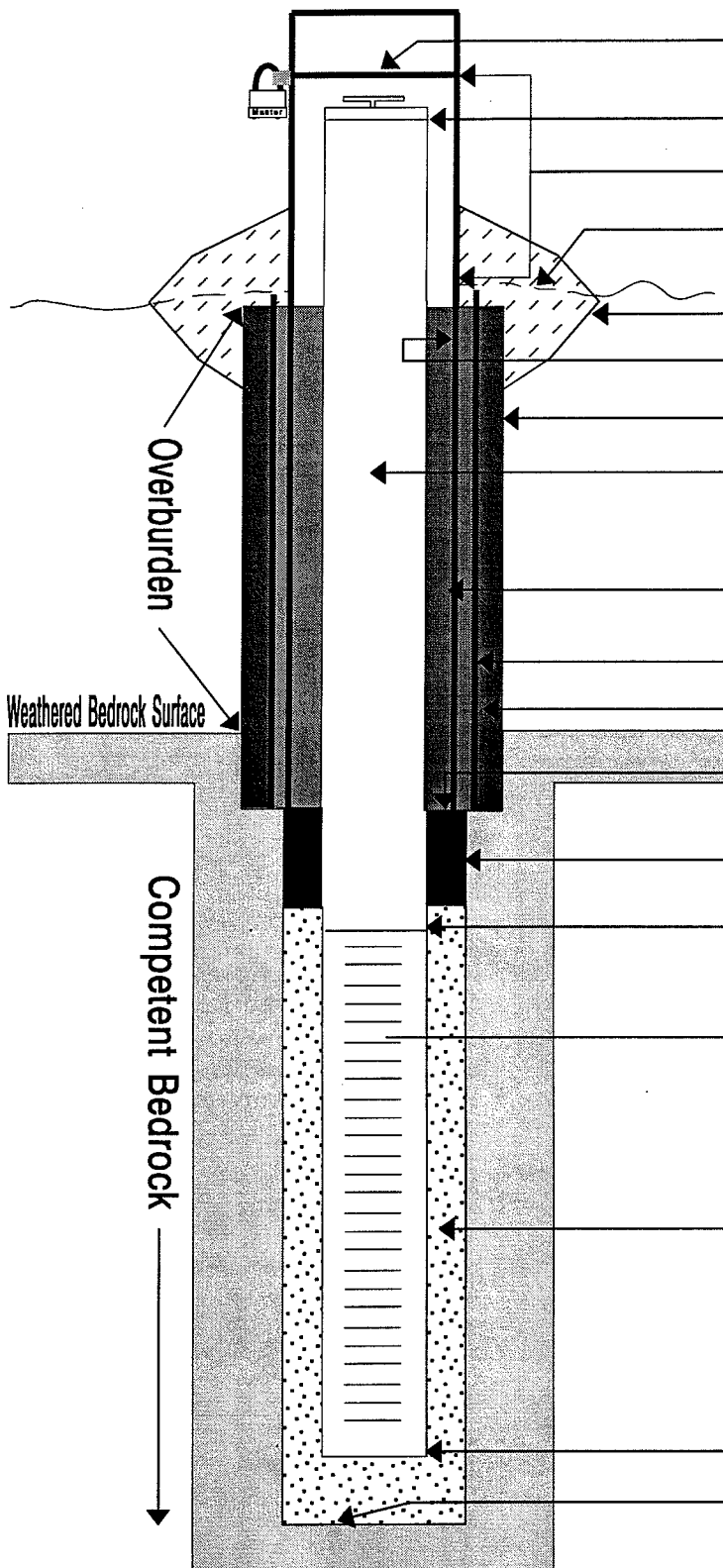
Elevation/Depth Bottom of Screen: 637.50'

Elevation/Depth Bottom of Hole: 637.00'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5-5-93	WELL NAME	MW-49D



Elev.(Top of Surface casing): 650.64'

Elevation Top of Riser: 650.50'

Length of Exposed Guardpipe: 2.49'

Elevation/Ground Surface: 648.20'

Type of Surface Seal: PORTLAND CEMENT COLLAR

I.D. of Surface Guardpipe: 6"

Diameter of Hole: 10"

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Grout: PORTLAND/BENTONITE

Steel I.D. (Surface to Bedrock): 6"

Type of Grout: PORTLAND/BENTONITE

Elevation/Depth Top of Seal: 639.20'

Type of Seal: BENTONITE CHIPS

Elevation/Depth Top of Screen: 632.70'

Type of Screen: PVC

Slot Size x Length: .010" X 19

I.D. Screen: 2"

Type of Sand Pack: COARSE

Diameter of Hole in Bedrock: 4"

Core/Rock: 4"

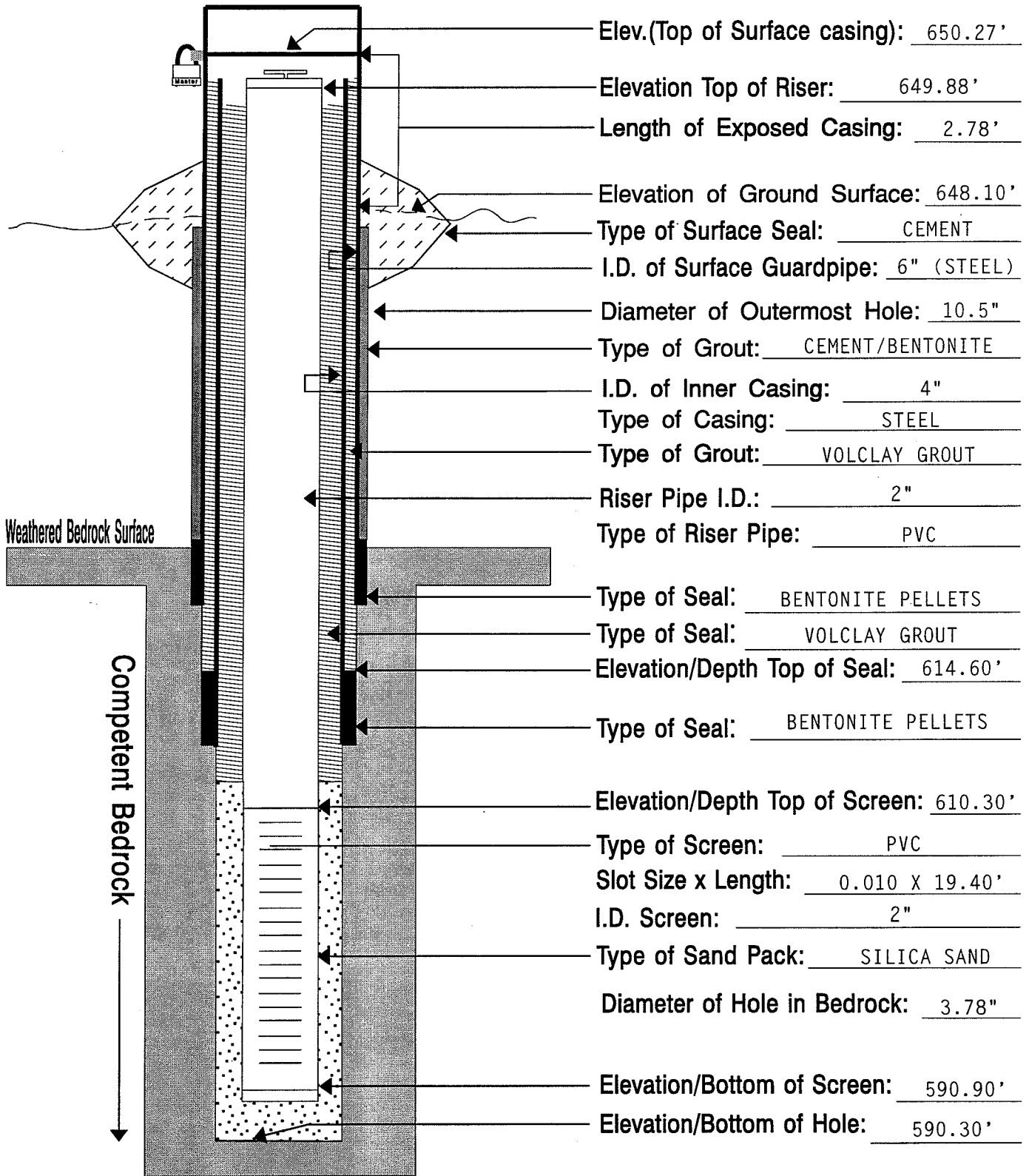
Elevation/Bottom of Screen: 613.70'

Elevation/Bottom of Hole: 612.70'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	MAHER ENVIRONMENTAL
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA AND CORING
DATE	26 MAY 1993	WELL NAME	MW-50D



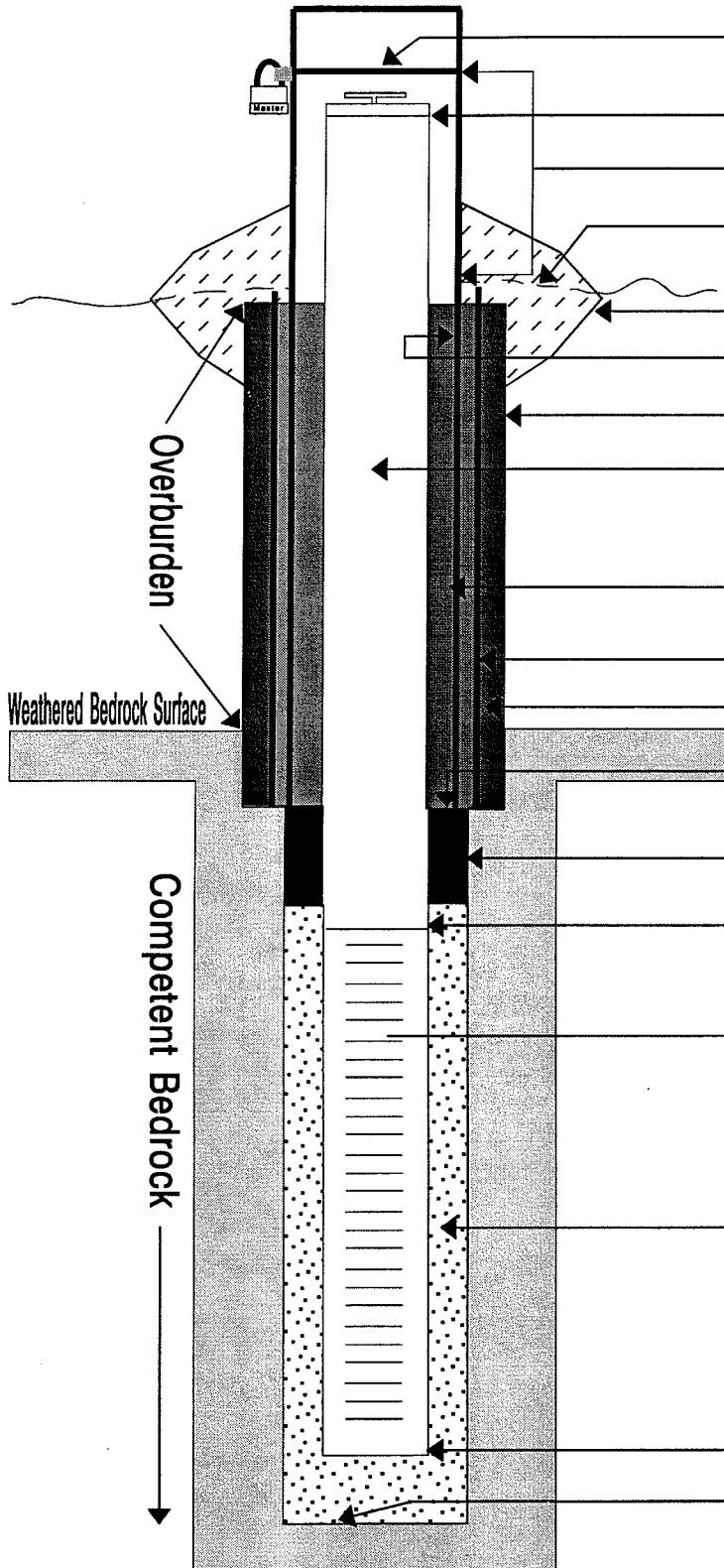
Elev.(Top of Surface casing): 650.27'  
 Elevation Top of Riser: 649.88'  
 Length of Exposed Casing: 2.78'  
 Elevation of Ground Surface: 648.10'  
 Type of Surface Seal: CEMENT  
 I.D. of Surface Guardpipe: 6" (STEEL)  
 Diameter of Outermost Hole: 10.5"  
 Type of Grout: CEMENT/BENTONITE  
 I.D. of Inner Casing: 4"  
 Type of Casing: STEEL  
 Type of Grout: VOLCLAY GROUT  
 Riser Pipe I.D.: 2"  
 Type of Riser Pipe: PVC  
 Type of Seal: BENTONITE PELLETS  
 Type of Seal: VOLCLAY GROUT  
 Elevation/Depth Top of Seal: 614.60'  
 Type of Seal: BENTONITE PELLETS  
 Elevation/Depth Top of Screen: 610.30'  
 Type of Screen: PVC  
 Slot Size x Length: 0.010 X 19.40'  
 I.D. Screen: 2"  
 Type of Sand Pack: SILICA SAND  
 Diameter of Hole in Bedrock: 3.78"  
 Elevation/Bottom of Screen: 590.90'  
 Elevation/Bottom of Hole: 590.30'

Weathered Bedrock Surface

Competent Bedrock

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5-10-93	WELL NAME	MW-51D



Elev.(Top of Surface casing): 628.64'

Elevation Top of Riser: 628.24'

Length of Exposed Guardpipe: 3.04'

Elevation/Ground Surface: 625.60'

Type of Surface Seal: PORTLAND CEMENT COLLAR

I.D. of Surface Guardpipe: 6"

Diameter of Hole: 10"

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Grout: PORTLAND/BENTONITE

Steel I.D. (Surface to Bedrock): 6"

Type of Grout: PORTLAND/BENTONITE

Elevation/Depth Top of Seal: 619.10'

Type of Seal: BENTONITE CHIPS

Elevation/Depth Top of Screen: 612.30'

Type of Screen: PVC

Slot Size x Length: .010" X 19

I.D. Screen: 2"

Type of Sand Pack: COARSE

Diameter of Hole in Bedrock:  
Core/Rock: 4"

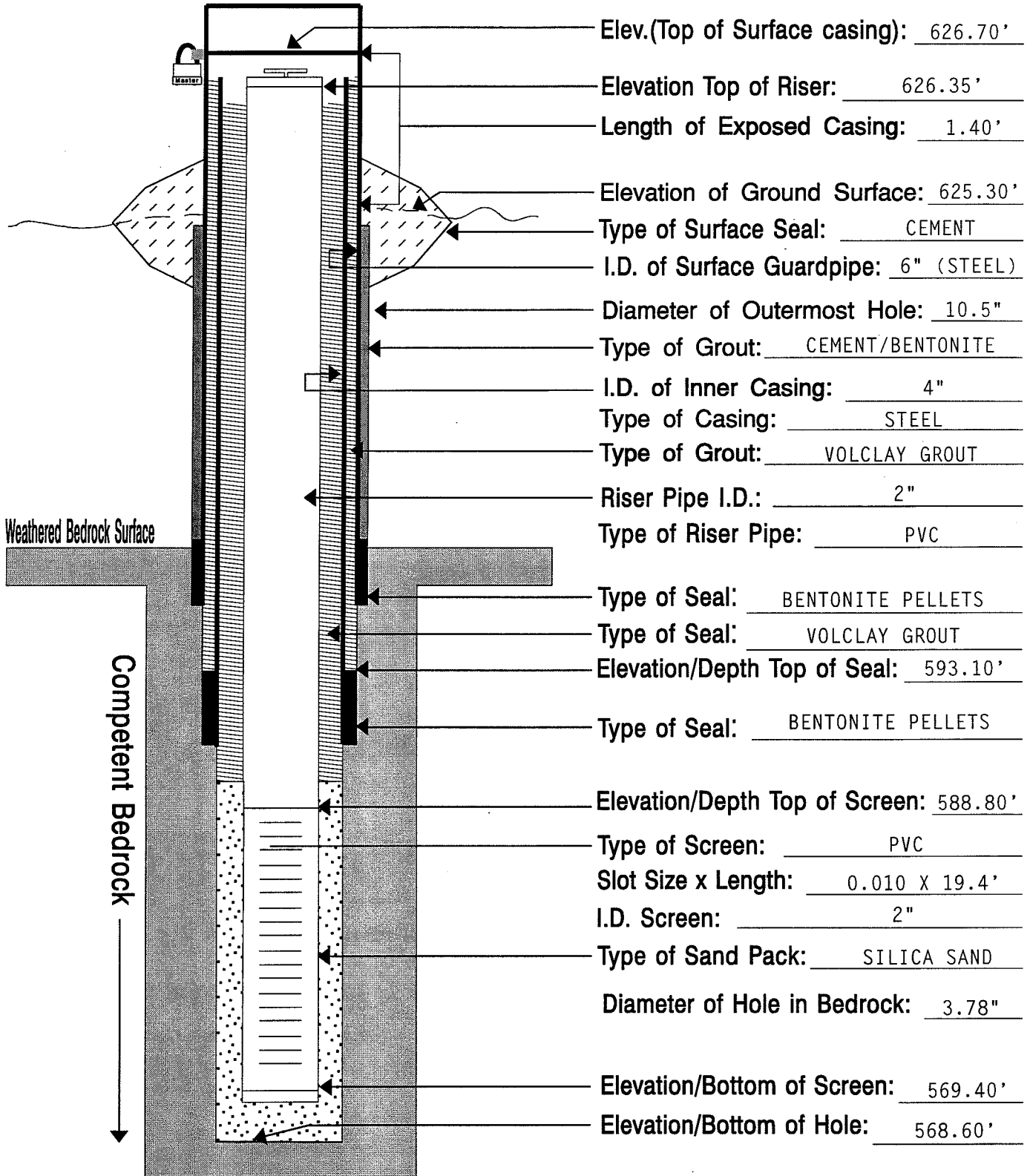
Elevation/Bottom of Screen: 593.30'

Elevation/Bottom of Hole: 592.30'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	MAHER ENVIRONMENTAL
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA AND CORING
DATE	8 JUNE 1993	WELL NAME	MW-52D



Elev.(Top of Surface casing): 626.70'

Elevation Top of Riser: 626.35'

Length of Exposed Casing: 1.40'

Elevation of Ground Surface: 625.30'

Type of Surface Seal: CEMENT

I.D. of Surface Guardpipe: 6" (STEEL)

Diameter of Outermost Hole: 10.5"

Type of Grout: CEMENT/BENTONITE

I.D. of Inner Casing: 4"

Type of Casing: STEEL

Type of Grout: VOLCLAY GROUT

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Seal: BENTONITE PELLETS

Type of Seal: VOLCLAY GROUT

Elevation/Depth Top of Seal: 593.10'

Type of Seal: BENTONITE PELLETS

Elevation/Depth Top of Screen: 588.80'

Type of Screen: PVC

Slot Size x Length: 0.010 X 19.4'

I.D. Screen: 2"

Type of Sand Pack: SILICA SAND

Diameter of Hole in Bedrock: 3.78"

Elevation/Bottom of Screen: 569.40'

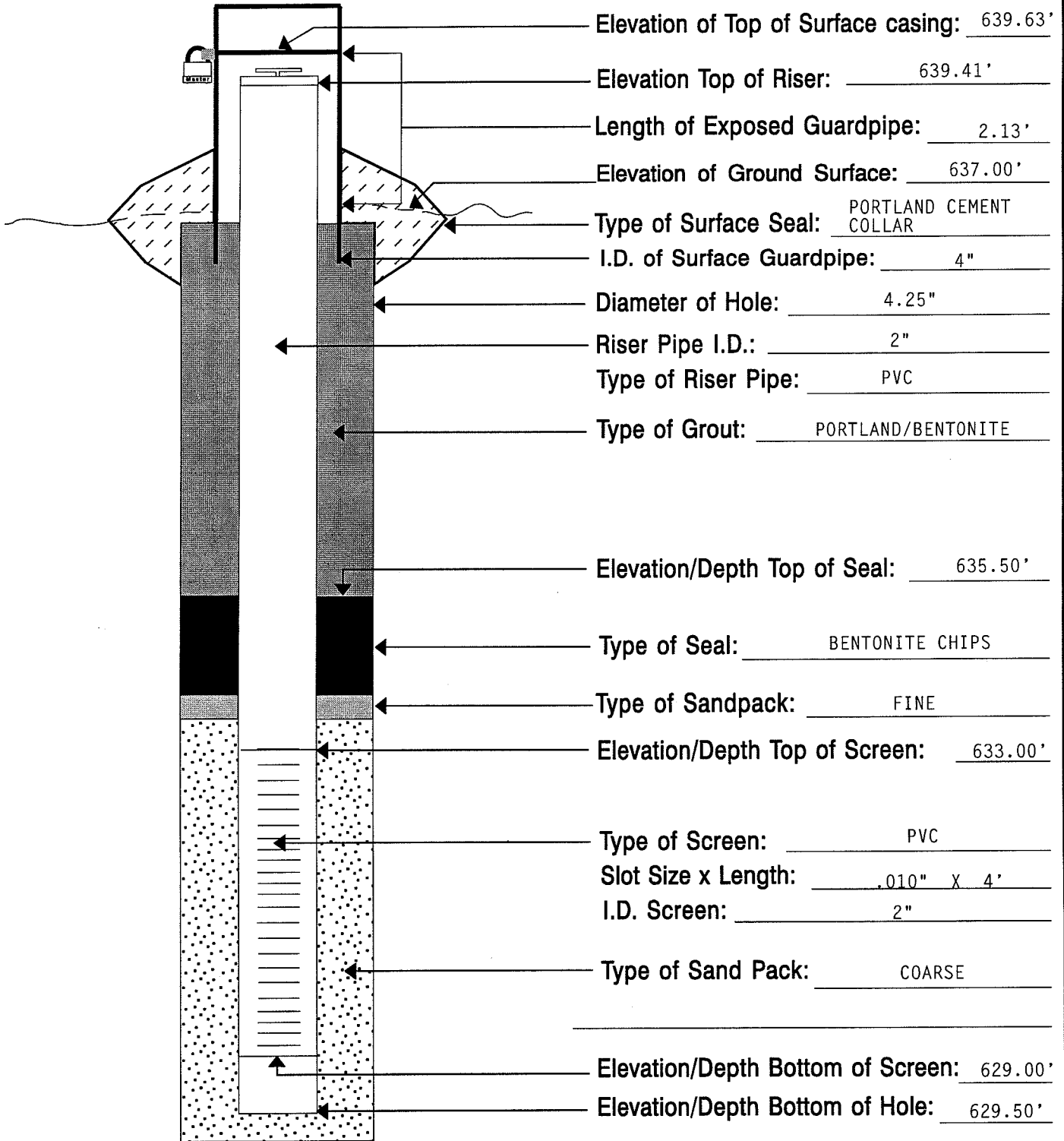
Elevation/Bottom of Hole: 568.60'

Weathered Bedrock Surface

Competent Bedrock

# OVERBURDEN MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5/6/93	WELL NAME	MW-53



Elevation of Top of Surface casing: 639.63'

Elevation Top of Riser: 639.41'

Length of Exposed Guardpipe: 2.13'

Elevation of Ground Surface: 637.00'

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: 635.50'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 633.00'

Type of Screen: PVC

Slot Size x Length: .010" X 4'

I.D. Screen: 2"

Type of Sand Pack: COARSE

Elevation/Depth Bottom of Screen: 629.00'

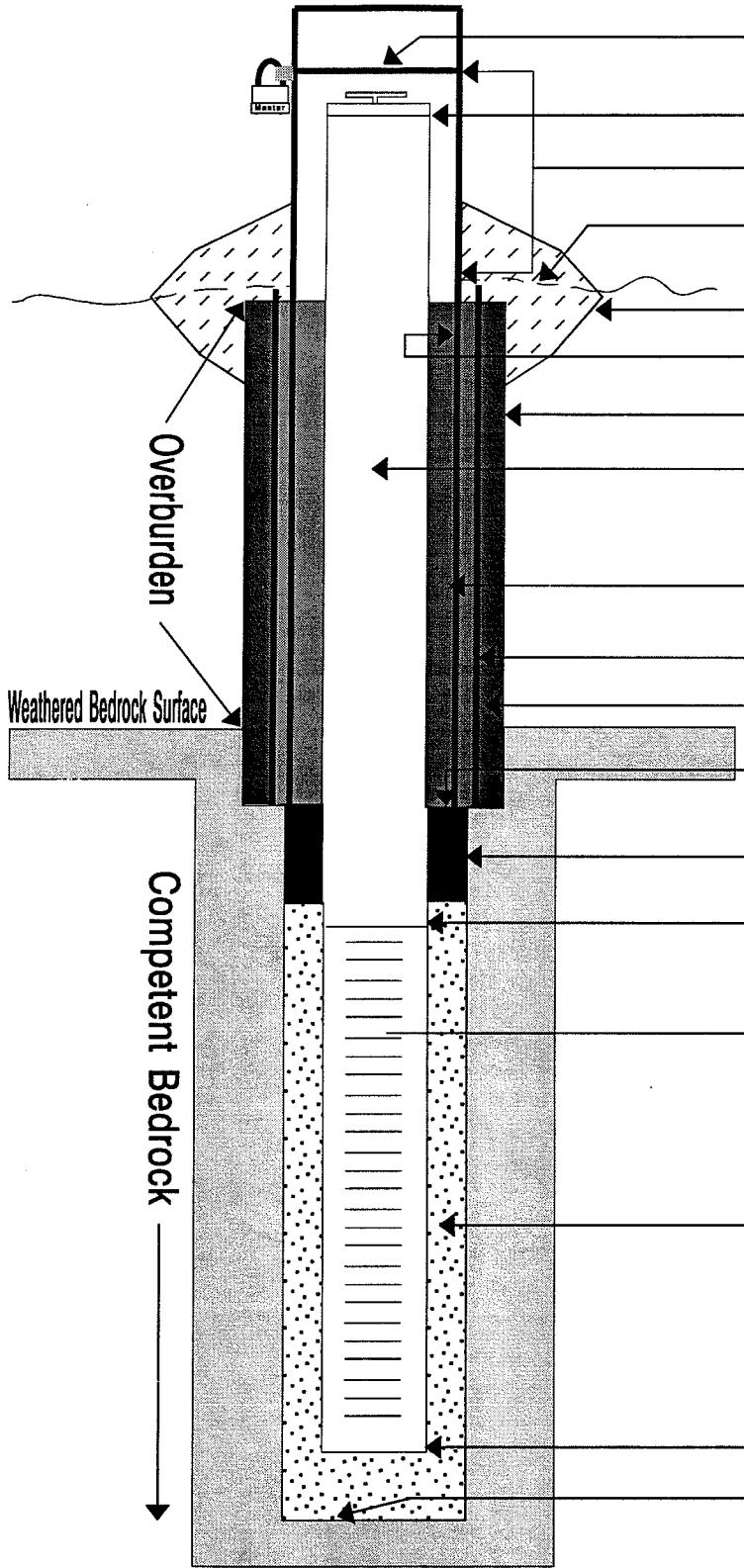
Elevation/Depth Bottom of Hole: 629.50'

ALL ELEVATIONS RELATIVE TO MSL



# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5-18-93	WELL NAME	MW-54D

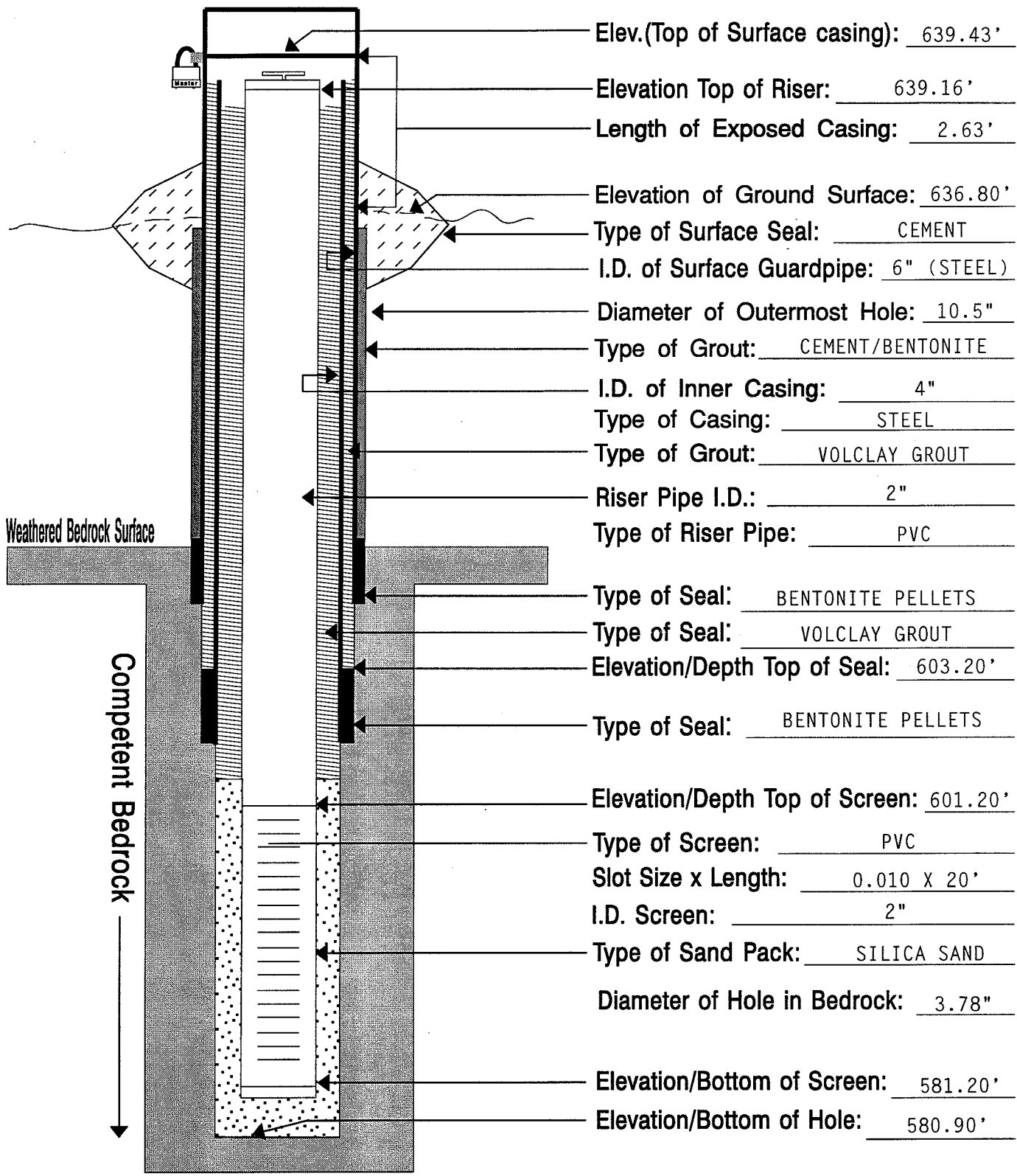


- Elev.(Top of Surface casing): 639.34'
- Elevation Top of Riser: 639.00'
- Length of Exposed Guardpipe: 2.44'
- Elevation/Ground Surface: 636.90'
- Type of Surface Seal: PORTLAND CEMENT COLLAR
- I.D. of Surface Guardpipe: 6"
- Diameter of Hole: 10"
- Riser Pipe I.D.: 2"
- Type of Riser Pipe: PVC
- Type of Grout: PORTLAND/BENTONITE
- Steel I.D. (Surface to Bedrock): 6"
- Type of Grout: PORTLAND/BENTONITE
- Elevation/Depth Top of Seal: 629.90'
- Type of Seal: BENTONITE CHIPS
- Elevation/Depth Top of Screen: 623.60'
- Type of Screen: PVC
- Slot Size x Length: .010" X 19
- I.D. Screen: 2"
- Type of Sand Pack: COARSE
- Diameter of Hole in Bedrock: 4"
- Core/Rock: 4"
- Elevation/Bottom of Screen: 588.10'
- Elevation/Bottom of Hole: 587.10'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	MAHER ENVIRONMENTAL
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA AND CORING
DATE	2 JUNE 1993	WELL NAME	MW-55D



Elev.(Top of Surface casing): 639.43'

Elevation Top of Riser: 639.16'

Length of Exposed Casing: 2.63'

Elevation of Ground Surface: 636.80'

Type of Surface Seal: CEMENT

I.D. of Surface Guardpipe: 6" (STEEL)

Diameter of Outermost Hole: 10.5"

Type of Grout: CEMENT/BENTONITE

I.D. of Inner Casing: 4"

Type of Casing: STEEL

Type of Grout: VOLCLAY GROUT

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Seal: BENTONITE PELLETS

Type of Seal: VOLCLAY GROUT

Elevation/Depth Top of Seal: 603.20'

Type of Seal: BENTONITE PELLETS

Elevation/Depth Top of Screen: 601.20'

Type of Screen: PVC

Slot Size x Length: 0.010 X 20'

I.D. Screen: 2"

Type of Sand Pack: SILICA SAND

Diameter of Hole in Bedrock: 3.78"

Elevation/Bottom of Screen: 581.20'

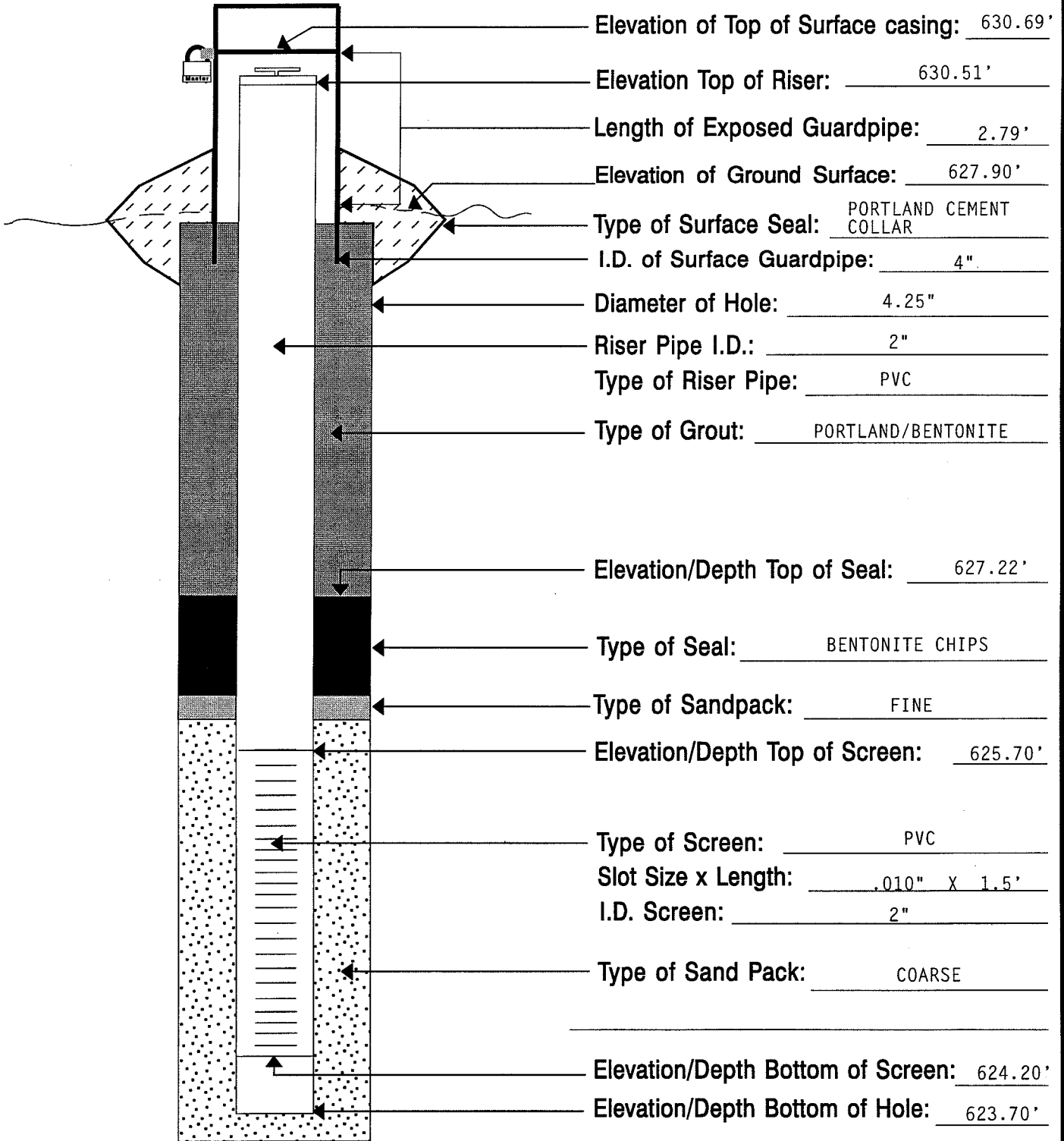
Elevation/Bottom of Hole: 580.90'

Weathered Bedrock Surface

Competent Bedrock

# OVERBURDEN MONITORING WELL

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



Elevation of Top of Surface casing: 630.69'

Elevation Top of Riser: 630.51'

Length of Exposed Guardpipe: 2.79'

Elevation of Ground Surface: 627.90'

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: 627.22'

Type of Seal: BENTONITE CHIPS

Type of Sandpack: FINE

Elevation/Depth Top of Screen: 625.70'

Type of Screen: PVC

Slot Size x Length: .010" X 1.5'

I.D. Screen: 2"

Type of Sand Pack: COARSE

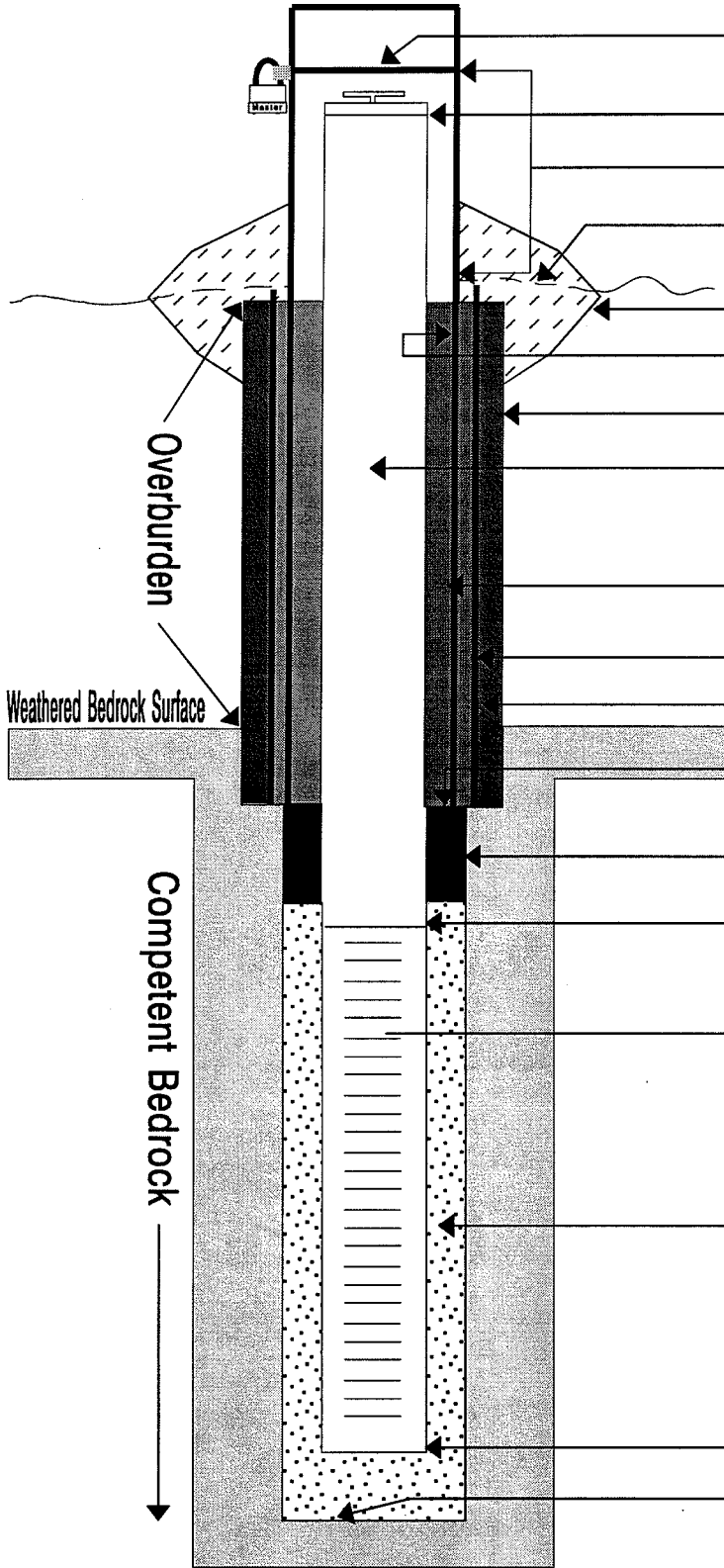
Elevation/Depth Bottom of Screen: 624.20'

Elevation/Depth Bottom of Hole: 623.70'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	AMERICAN AUGER
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA
DATE	5-18-93	WELL NAME	MW-57D



Elev.(Top of Surface casing): 630.27'

Elevation Top of Riser: 629.82'

Length of Exposed Guardpipe: 2.27'

Elevation/Ground Surface: 628.00'

Type of Surface Seal: PORTLAND CEMENT COLLAR

I.D. of Surface Guardpipe: 6"

Diameter of Hole: 10"

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Grout: PORTLAND/BENTONITE

Steel I.D. (Surface to Bedrock): 6"

Type of Grout: PORTLAND/BENTONITE

Elevation/Depth Top of Seal: 621.00'

Type of Seal: BENTONITE CHIPS

Elevation/Depth Top of Screen: 615.70'

Type of Screen: PVC

Slot Size x Length: .010" X 19

I.D. Screen: 2"

Type of Sand Pack: COARSE

Diameter of Hole in Bedrock: 4"

Core/Rock: 4"

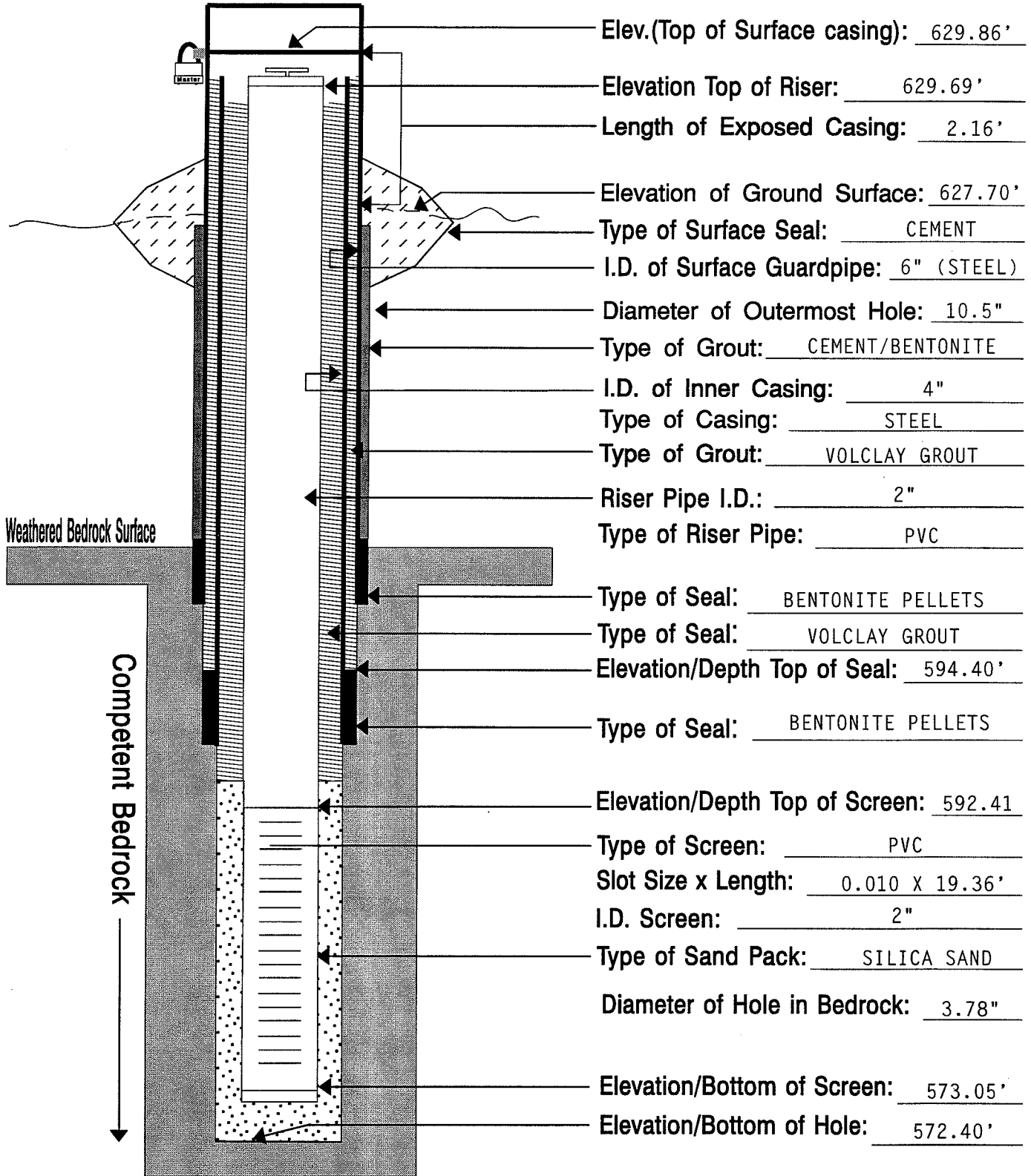
Elevation/Bottom of Screen: 596.70'

Elevation/Bottom of Hole: 595.70'

ALL ELEVATIONS RELATIVE TO MSL

# BEDROCK MONITORING WELL

PROJECT	SENECA ARMY DEPOT	DRILLER	MAHER ENVIRONMENTAL
LOCATION	ASH LANDFILL	DRILLING METHOD	HSA AND CORING
DATE	4 JUNE 1993	WELL NAME	MW-58D



Elev.(Top of Surface casing): 629.86'

Elevation Top of Riser: 629.69'

Length of Exposed Casing: 2.16'

Elevation of Ground Surface: 627.70'

Type of Surface Seal: CEMENT

I.D. of Surface Guardpipe: 6" (STEEL)

Diameter of Outermost Hole: 10.5"

Type of Grout: CEMENT/BENTONITE

I.D. of Inner Casing: 4"

Type of Casing: STEEL

Type of Grout: VOLCLAY GROUT

Riser Pipe I.D.: 2"

Type of Riser Pipe: PVC

Type of Seal: BENTONITE PELLETS

Type of Seal: VOLCLAY GROUT

Elevation/Depth Top of Seal: 594.40'

Type of Seal: BENTONITE PELLETS

Elevation/Depth Top of Screen: 592.41

Type of Screen: PVC

Slot Size x Length: 0.010 X 19.36'

I.D. Screen: 2"

Type of Sand Pack: SILICA SAND

Diameter of Hole in Bedrock: 3.78"

Elevation/Bottom of Screen: 573.05'

Elevation/Bottom of Hole: 572.40'

11-7-06

Dan Lipp (Dad)

1430 SJB on site

Ben gave H+S Talk

1530 set up on MW-27

MW-27 is within Biowall

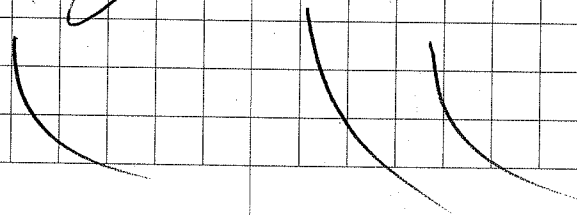
No SS sampling

Top of Rock (TOR) @ 11' bgs

well should have been at 11.5', pulling augers, will reset well tomorrow

1700 off site

DJL



②  
11-8-06

0700 on site with SJB  
moving MW-27 4' to  
the South

MW-27 TOR @ 10'  
drilled to 10.5' and  
set well

MW-27s  
Chip TO }  
GS }  
Sand TO 3.5' }  
- 5.5 screen  
- 10' TOR  
- 10.5 TD

0850 Drillers on stand-  
by, Ben said ~~would~~ stop  
work while he talks  
to the office

1020 Drillers off stand-by

11-8-06

③

1025  
MW-26 set up

SS-1 HB = 20, 15, 15  
0-2' 20  
Black sand & silt  
some fine gravel (Topsoil)  
(dry) no odor

SS-2 HB = 14, 13  
2-4' 15, 14, 14, 13  
Same as above  
(dry) no odor

SS-3 HB 50/1  
4-5.6' refusal @ 5.6'  
Brown hard packed  
sand, some fine gravel  
(dry) no odor  
TOR 5.6'

④ 27

11-8-06

MW-26 auguring to 10'

MW-26  
 } chips  
 } 3'2 sand  
 5.6 TOR ← 5.2 screen  
 }  
 } 10'2 T7

1228 set up on MW-28  
 MW-28 is within the  
 Brownall No SS sampling  
 TOR @ 10'

MW-28  
 GS  
 } chips 3' to GS  
 }  
 } sand 3' to 10'  
 } 5 to 10' screen  
 } TOR 10

11-8-06

27 5

1414 set up on MW-23  
 MW-23 is within the  
 Brownall No SS sampling  
 TOR @ 11' augured to  
 11.5'

MW-23  
 GS  
 } chips 4.5 to GS  
 } 11.5 to 4.5 sand  
 }  
 } 11.6' to 6.5' screen  
 } TOR @ 11'  
 } T7 11.5 ↓

1540 set up on MW-29

MW-29 Hrs 5, 6, 8-14  
 SS-1  
 0-2'

Black sand + silt, (Top Soil)  
 some fine gravel  
 (dry) no odor



(6) DJJ 11-8-6

MW-29

HB=12, 13, 14, 15

SS-2

2-4'

Brown sand and silt  
some red clay, some  
fine gravel  
(dry) no odor

SS-3

4-6'

HB=5, 6, 5

gray clay and  
silt, little fine  
gravel  
(dry) no odor

SS-4

6-8'

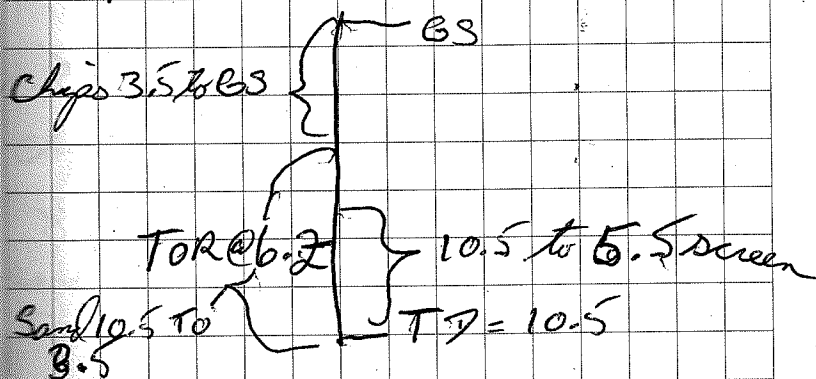
HB=50/2

only 2" of recovery  
shale + gravel  
(wet) no odor  
TOR 6.2  
augering to 10.5'

11-8-6

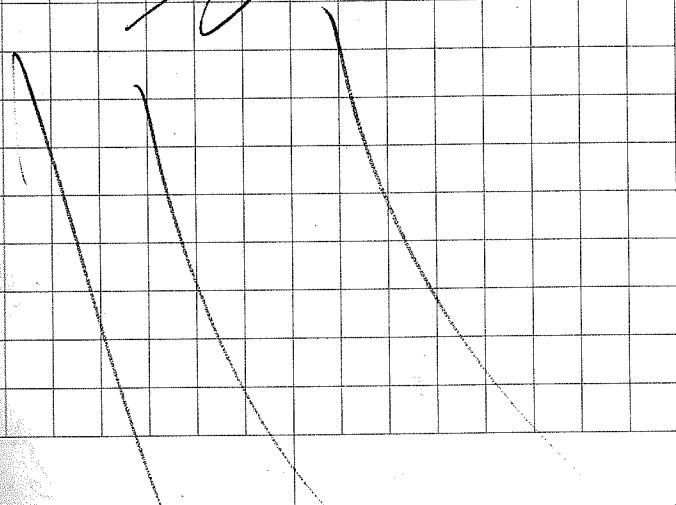
(7)

MW-29



1740 finished MW-29  
off site

DJJ



⑧ 7/21-9-06

0700 on site with  
SJB  
set up on MW-25

MW-25

SS-1

0-2'

HS=WH, 2, 4, 8

(Top soil) Black sand & silt  
some fine gravel  
(moist) (no odor)

SS-2

2-4'

HS=7, 14, 14, 15

same as above  
(dry) no odor

SS-3

2-6'

HS=7, 13, 11, 10

same as above  
(dry) (no odor)

SS-4

6-8

18 50/4

5" of recovery  
dry gravel top @  
6.8'

⑨ 11-9-06

MW-25 augering down to 10'

MW-25  
GS

chips 3' to GS

sand 10 to 3'

screen 10 to 5'

TOR 6.8

T9 10'

0928 set up on PT-18A

SS-1

PT-18A

0-2'

HS=WH, 2, 3, 3

Black fine sand & silt  
(Top soil) some gravel  
(moist) no odor

SS-2

2-4'

HS=11, 5, 53

same as above  
(dry) no odor

(10)

JZ

11-9-06

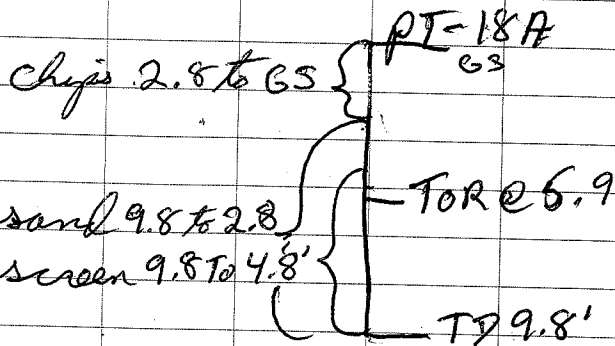
PT-18A

SS-3

4'-6'

HB 5, 7, 10, 11, 14

Hard packed gray  
silt & clay, some  
gravel (dry) no odor  
TOR @ 5.9'



1050 set up on MW-24

MW-24

SS-1

0-2

HB 2, 3, 3, 14.

(Top soil) fine black  
sand & silt  
moist (no odor)

JZ

7.9

(11)

11-9-06

MW-24

SS-2

2-4'

HB = 6, 13, 15, 17

2 to 3' same as above  
3 to 4' gray gravel &  
shale  
(dry) no odor

SS-3

4-6'

HB 11, 8, 9, 8

Black & brown  
fine sand, some silt  
some gravel  
(dry) no odor

SS-4

6-8'

HB 13, 15, 38, 50, 1

gray silt and gravel  
2' of recovery  
TOR @ 7.9  
augury to 11'

(12) JF 11-9-06

MW-24

MW24 CS

chips 4' to CS

sand 11' to 4'

screen 11' to 6'

7.9 TOR

TD 11'

1300 installing protective  
barrier around wells

1730 off site

(13) JF 11-10-06

0700 on site, with SJB  
(pods) installing forms and  
protective casing around  
all wells

installed pads and  
protective casing  
around all well

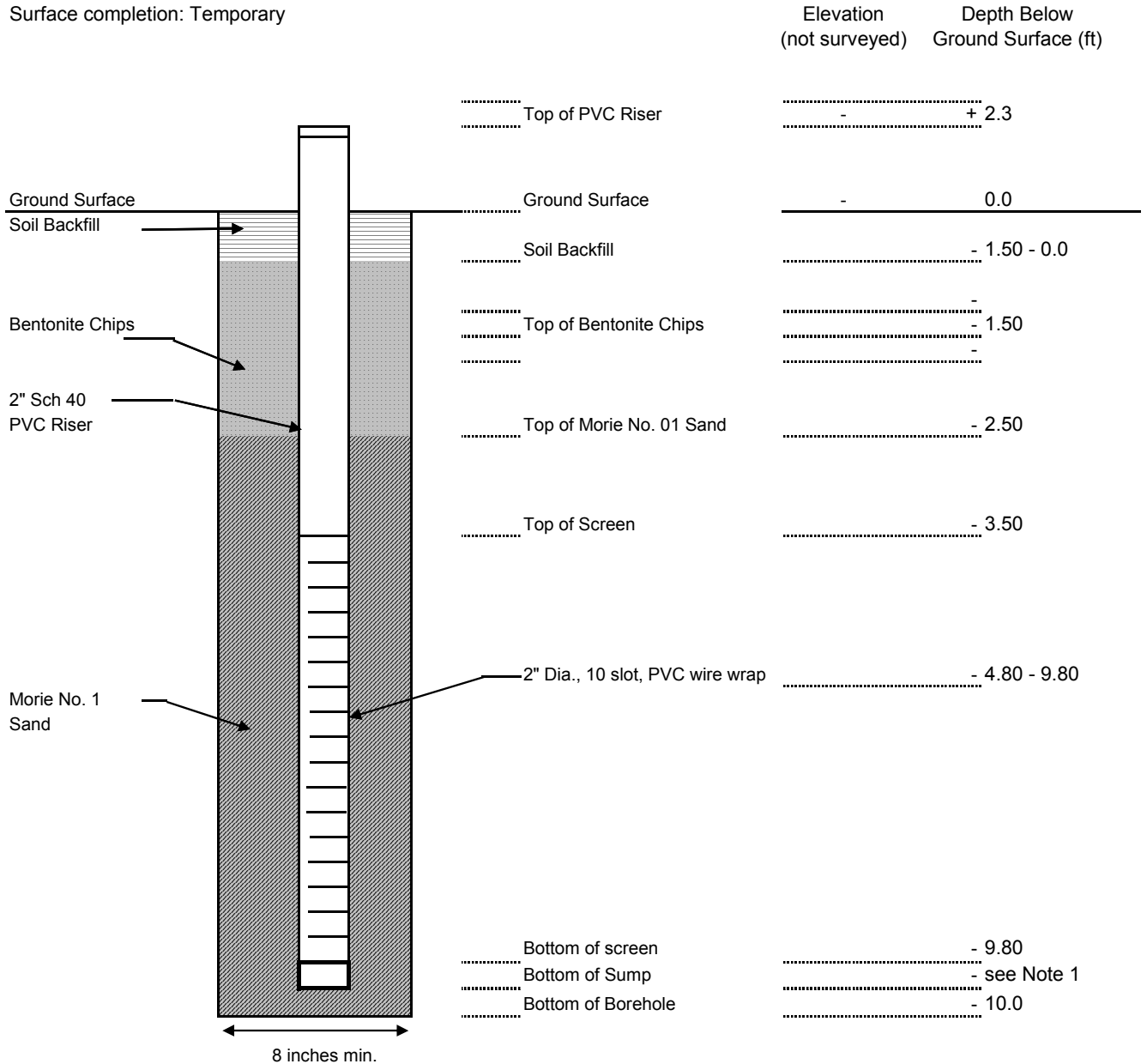
1400 off site

## Monitoring Well Construction Detail SEAD-48

### Seneca Army Depot Activity

<b>Project:</b>	Ash Landfill - Biowall	<b>Drilling Contractor:</b>	Geologic Drilling, Inc.
<b>Well Number:</b>	MWT-17R	<b>Date Started:</b>	8/22/2005
<b>Geologist:</b>	McAllister	<b>Date Completed:</b>	8/22/2005

Surface completion: Temporary



Not to scale

**Notes:**

(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

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

ENGINEERING-SCIENCE, INC.	CLIENT: <u>ACOE</u>	WELL #: <u>MW4-1</u>
PROJECT: <u>10 SWMU</u>	PROJECT NO: <u>720477</u>	INSPECTOR: <u>ES/KB</u>
LOCATION: <u>SEAD 4</u>	CHECKED BY: _____	

DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>10.5'</u>
DRILLER: <u>Scott</u>	INSTALLATION STARTED: <u>12-6-93</u>
DRILLING COMPLETED: <u>12-6-93</u>	INSTALLATION COMPLETED: <u>12-6-93</u>
BORING DEPTH: <u>10.5'</u>	SURFACE COMPLETION DATE: <u>12-6-93</u>
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire</u>
BORING DIAMETER(S): <u>8 1/2'</u>	BEDROCK CONFIRMED (Y/N)? <u>Y</u>
ASSOCIATED SWMU/AOC: <u>4</u>	ESTIMATED GROUND ELEVATION: <u>698.392</u>

## PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel LENGTH: \_\_\_\_\_

## RISER:

TR: \_\_\_\_\_ TYPE: PVC-P DIAMETER: 2" LENGTH: \_\_\_\_\_

## SCREEN:

TSC: 5.4' TYPE: PVC 40 DIAMETER: 2" LENGTH: 4' SLOT SIZE: 0.01"

## POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 9.4' POW: 10.5'

## GROUT:

TG: Ground TYPE: Cement-bentonite LENGTH: 2.5'SEAL: TBS: 2.5' TYPE: bentonite pellets LENGTH: 2'SAND PACK: TSP: 4.5' #1 5.0' #1 TYPE: #39 #1 LENGTH: 6.0'

## SURFACE COLLAR:

TYPE: \_\_\_\_\_ RADIUS: 2'x2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

## CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

## COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MN4-1

DATE: 12-6-83

DESCRIPTION  
(FROM BORING LOG)

DEPTH

STRATA

SCHEMATIC

TPC 700.516

DEPTH - ELEV.

TR

700.115

PIN

698.392

TG

Top #3 Sand 5.0'  
Top #1 Sand 4.5'

TBS

2.5'

TSP

4.5'

TSC

5.4'

BSC

9.4'

POW

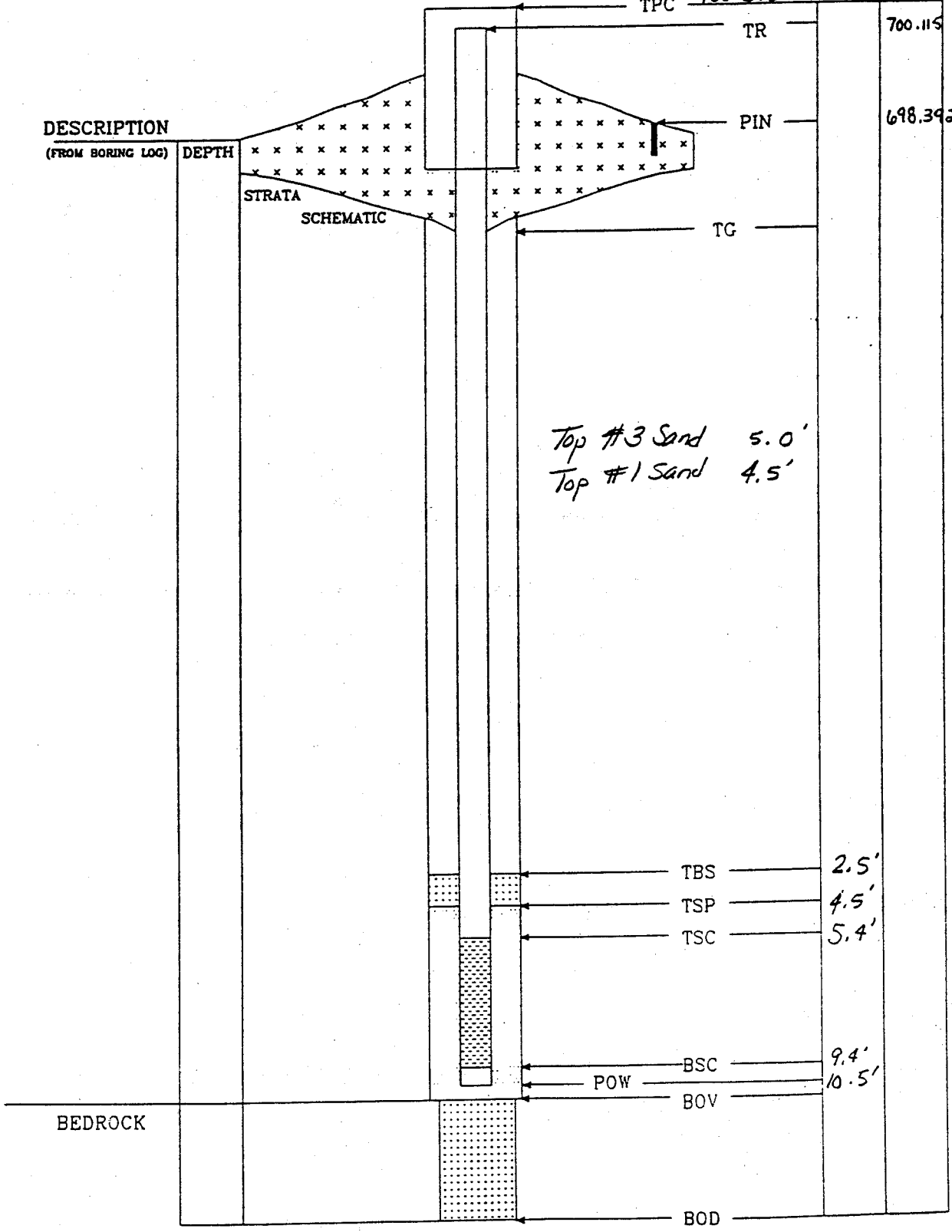
10.5'

BOV

BEDROCK

BOD

\* NOT TO SCALE



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

ENGINEERING-SCIENCE, INC.	CLIENT: <u>ACOE</u>	WELL #: <u>MW4-2</u>
PROJECT: <u>10 SWMU</u>	PROJECT NO: <u>720477</u>	INSPECTOR: <u>ES</u>
LOCATION: <u>SEAD 4</u>	CHECKED BY: _____	

DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>40'</u>
DRILLER: <u>Bob</u>	INSTALLATION STARTED: <u>11/10/93</u>
DRILLING COMPLETED: <u>11/10/93</u>	INSTALLATION COMPLETED: <u>11/10/93</u>
BORING DEPTH: <u>4.0'</u>	SURFACE COMPLETION DATE: <u>11/10/93</u>
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire</u>
BORING DIAMETER(S): <u>8 1/2"</u>	BEDROCK CONFIRMED (Y/N?): <u>Y</u>
ASSOCIATED SWMU/AOC: <u>4</u>	ESTIMATED GROUND ELEVATION: <u>699.448</u>

PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel      LENGTH: \_\_\_\_\_

RISER:

TR: \_\_\_\_\_      TYPE: PVC 40      DIAMETER: 2"      LENGTH: \_\_\_\_\_

SCREEN:

TSC: 22      TYPE: PVC-40      DIAMETER: 11 1/2"      LENGTH: 10'      SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)

TYPE: PVC point      BSC: 3.2'      POW: 40'

GROUT:

TG: ground      TYPE: Cem-bentonite      LENGTH: \_\_\_\_\_

SEAL:

TBS: 1.0'      TYPE: bentonite pellets      LENGTH: 0.5'

SAND PACK:

TSP: 1.5'-#1 1.0'-#3      TYPE: #3 + #1      LENGTH: 2.5'

SURFACE COLLAR:

TYPE: Cement      RADIUS: 2' x 3'      THICKNESS CENTER: 1      THICKNESS EDGE: 1'

CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_      DEPTH 2: \_\_\_\_\_      DEPTH 3: \_\_\_\_\_      DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC



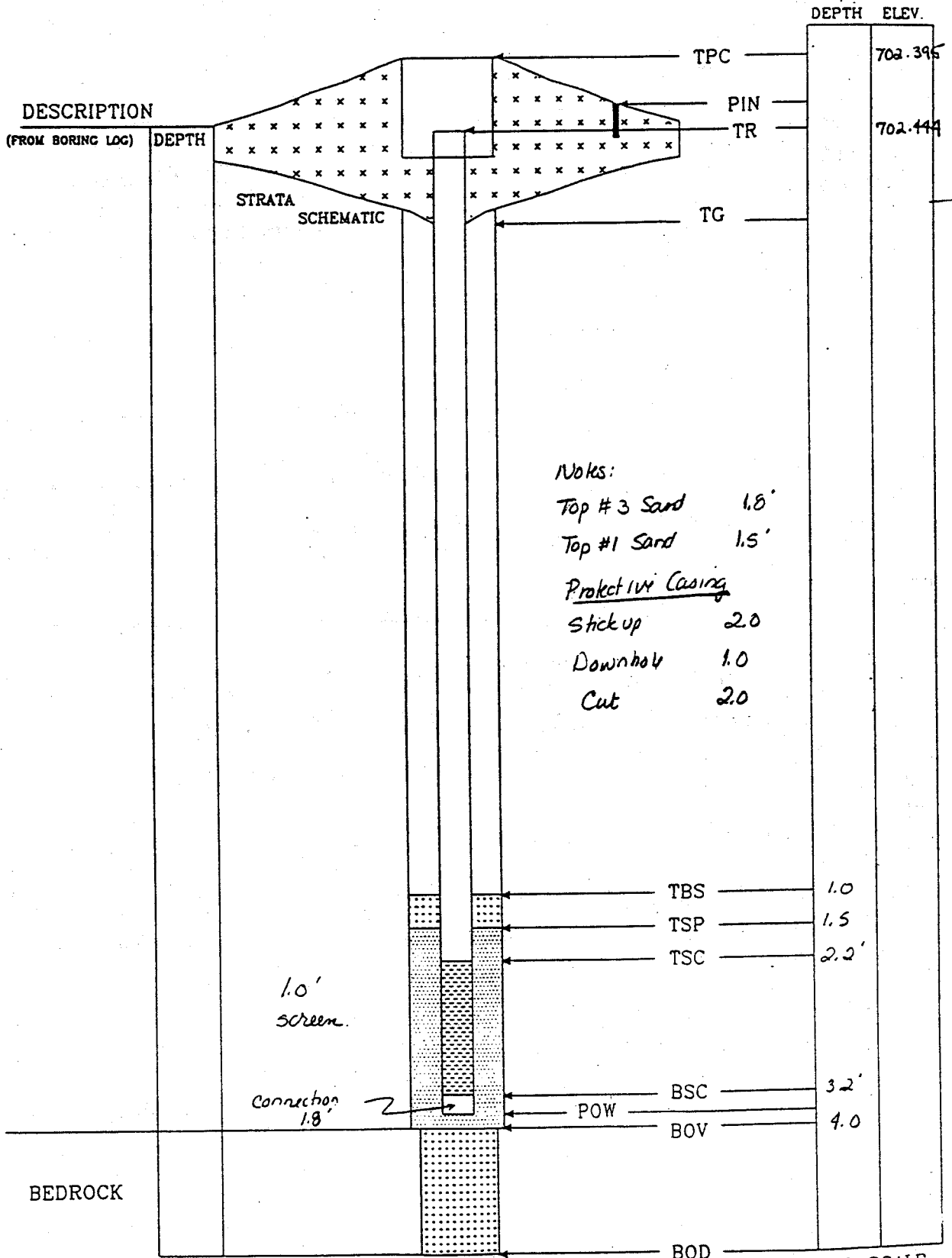
# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW4-2*

DATE *11/10/93*



Note: All depths meas. from ground surface \* NOT TO SCALE

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

ENGINEERING-SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW4-3</u>	
PROJECT: <u>10 SWMU</u>	LOCATION: <u>SEAD 4</u>		PROJECT NO: <u>720477</u>	INSPECTOR: <u>ES</u>
DRILLING CONTRACTOR: <u>Empire</u>			POW DEPTH: <u>9.0'</u>	
DRILLER: <u>Bob</u>			INSTALLATION STARTED: <u>11/10/93</u>	
DRILLING COMPLETED: <u>11/10/93</u>			INSTALLATION COMPLETED: <u>11/10/93</u>	
BORING DEPTH: <u>9.0'</u>			SURFACE COMPLETION DATE: <u>11/10/93</u>	
DRILLING METHOD(S): <u>HSA</u>			COMPLETION CONTRACTOR/CREW: <u>Empire</u>	
BORING DIAMETER(S): <u>8 1/2"</u>			BEDROCK CONFIRMED (Y/N?): <u>Y</u>	
ASSOCIATED SWMU/AOC: <u>4</u>			ESTIMATED GROUND ELEVATION: <u>697.669</u>	
PROTECTIVE SURFACE CASING:				
DIAMETER: <u>4"x4" Steel</u> LENGTH: _____				
RISER:				
TR: _____      TYPE: <u>PVC-40</u> DIAMETER: <u>2"</u> LENGTH: _____				
SCREEN:				
TSC: <u>3.9'</u> TYPE: <u>PVC-40</u> DIAMETER: <u>1 1/2"</u> LENGTH: <u>4.0'</u> SLOT SIZE: <u>.01"</u>				
POINT OF WELL: (SILT SUMP)				
TYPE: <u>PVC point</u> BSC: <u>7.9'</u> POW: <u>9.0'</u>				
GROUT:				
TG: <u>Gravel</u> TYPE: <u>Cem-bentonite</u> LENGTH: <u>1.4'</u>				
SEAL:				
TBS: <u>1.4</u> TYPE: <u>bentonite pellets</u> LENGTH: <u>1.0'</u>				
SAND PACK:				
TSP: <u>#3-2.9'</u> <u>#1-2.9'</u> TYPE: <u>#3 + #1</u> LENGTH: <u>6.6'</u>				
SURFACE COLLAR:				
TYPE: <u>Cement</u> RADIUS: <u>2'x2'</u> THICKNESS CENTER: <u>1'</u> THICKNESS EDGE: <u>1'</u>				
CENTRALIZER DEPTHS				
DEPTH 1: _____      DEPTH 2: _____      DEPTH 3: _____      DEPTH 4: _____				
COMMENTS:				
* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE				

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

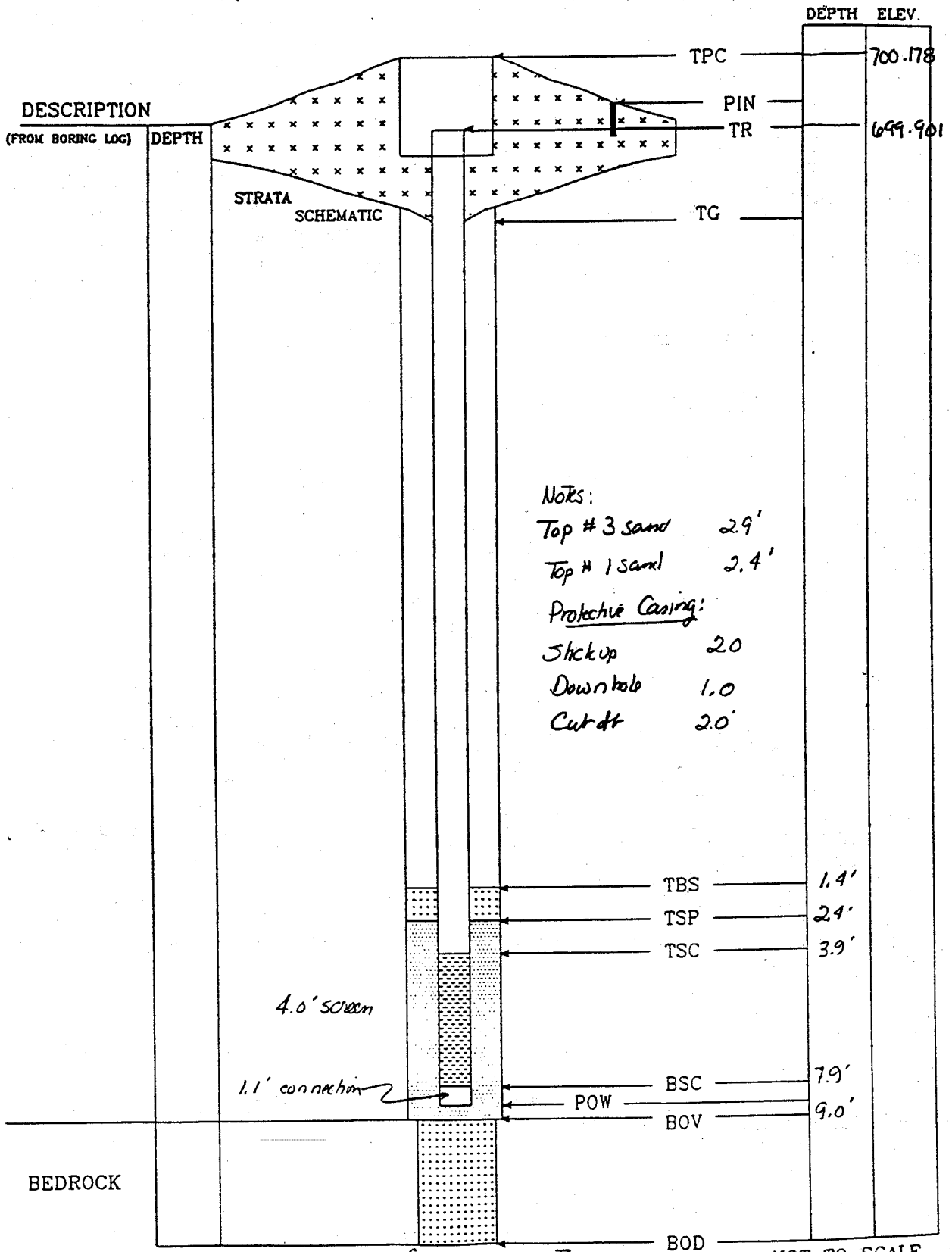
OVERBURDEN MONITORING WELL  
ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW4-3*

DATE: *11/10/93*



*Notes:*  
 Top # 3 sand 2.9'  
 Top # 1 sand 2.4'  
Protective Casing:  
 Stickup 2.0'  
 Downhole 1.0'  
 Cut off 2.0'

*Note: Depths measured from ground surface*

\* NOT TO SCALE

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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>MW4-4</u>	
PROJECT: <u>10 SWMU</u>		PROJECT NO: <u>726477</u>	
LOCATION: <u>SEAD 4</u>		INSPECTOR: <u>ES</u>	
		CHECKED BY: _____	
DRILLING CONTRACTOR: <u>Empire</u>		POW DEPTH: <u>10.0</u>	
DRILLER: <u>Scott</u>		INSTALLATION STARTED: <u>12-5-93</u>	
DRILLING COMPLETED: <u>12-5-93</u>		INSTALLATION COMPLETED: <u>12-5-93</u>	
BORING DEPTH: <u>10'</u>		SURFACE COMPLETION DATE: <u>12-5-93</u>	
DRILLING METHOD(S): <u>ASA</u>		COMPLETION CONTRACTOR/CREW: <u>Empire</u>	
BORING DIAMETER(S): <u>8 1/2"</u>		BEDROCK CONFIRMED (Y/N)? <u>Y</u>	
ASSOCIATED SWMU/AOC: <u>4</u>		ESTIMATED GROUND ELEVATION: <u>678.217</u>	

## PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel LENGTH: \_\_\_\_\_

## RISER:

TR: \_\_\_\_\_ TYPE: PVC-40 DIAMETER: 2" LENGTH: \_\_\_\_\_

## SCREEN:

TSC: 4.9' TYPE: PVC-40 DIAMETER: 2" LENGTH: 4.0' SLOT SIZE: 0.01"

## POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 8.9' POW: 10.0'

## GROUT:

TG: Ground TYPE: Cement-bentonite LENGTH: 2.5'SEAL: TBS: 2.5' TYPE: bentonite pellets LENGTH: 1.5'SAND PACK: TSP: 4.0' - #1 4.5' - #3 TYPE: #3 and #1 LENGTH: 6.0'

## SURFACE COLLAR:

TYPE: Cement RADIUS: 2' x 2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

## CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

## COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW 4-4

DATE: 12-5-93

TPC 680.557 DEPTH: ELEV.

TR 680.374

PIN

TG

DESCRIPTION  
(FROM BORING LOG)

DEPTH

STRATA

SCHEMATIC

*Top # 1 Sand 4.0  
Top # 3 Sand 4.5'*

TBS 2.5'

TSP 4.0'

TSC 4.9'

BSC 8.9'

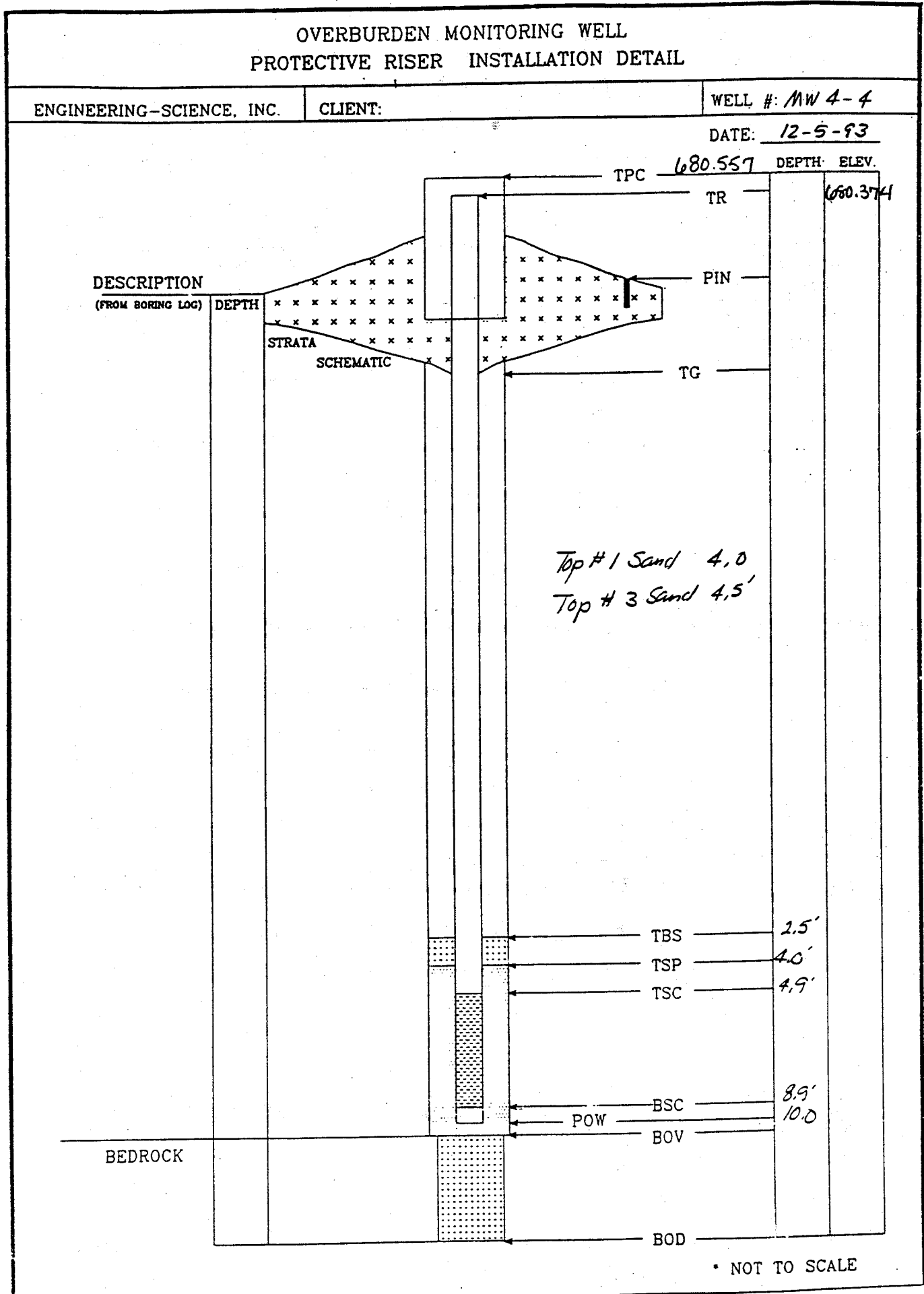
POW 10.0'

BOV

BEDROCK

BOD

• NOT TO SCALE



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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>MW4-5</u>
PROJECT: <u>10 SWMU</u>	PROJECT NO: <u>720477</u>	
LOCATION: <u>SEAD 4</u>	INSPECTOR: <u>ES/LB</u>	
CHECKED BY: _____		
DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>6.0'</u>	
DRILLER: <u>John W.</u>	INSTALLATION STARTED: <u>12/5/93</u>	
DRILLING COMPLETED: <u>12-5-93</u>	INSTALLATION COMPLETED: <u>12/5/93</u>	
BORING DEPTH: <u>6.0</u>	SURFACE COMPLETION DATE: <u>12/5/93</u>	
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire</u>	
BORING DIAMETER(S): <u>8 1/2"</u>	BEDROCK CONFIRMED (Y/N?): <u>Y</u>	
ASSOCIATED SWMU/AOC: <u>4</u>	ESTIMATED GROUND ELEVATION: <u>699.182</u>	

PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel LENGTH: \_\_\_\_\_

RISER:

TR: \_\_\_\_\_ TYPE: PVC-40 DIAMETER: 2" LENGTH: \_\_\_\_\_

SCREEN:

TSC: 3.1 TYPE: PVC-40 DIAMETER: 2" LENGTH: 20' SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 5.1 POW: 6.0'

GROUT:

TG: Ground TYPE: Cement-bentonite LENGTH: 1.3'

SEAL:

TBS: 13 TYPE: bentonite pellets LENGTH: .7'

SAND PACK:

TSP: 2'-#1 2.5'-#3 TYPE: #3 and #1 LENGTH: 4.0'

SURFACE COLLAR:

TYPE: Cement RADIUS: 2' x 2' THICKNESS CENTER: 1 THICKNESS EDGE: 1'

CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW4-5

DATE: 12-5-93

DESCRIPTION  
(FROM BORING LOG)

DEPTH

STRATA

SCHEMATIC

TPC 700.548 DEPTH ELEV.

TR

700.460

PIN

TG

*Top of #3 2.5'*  
*Top of H1 2.0'*

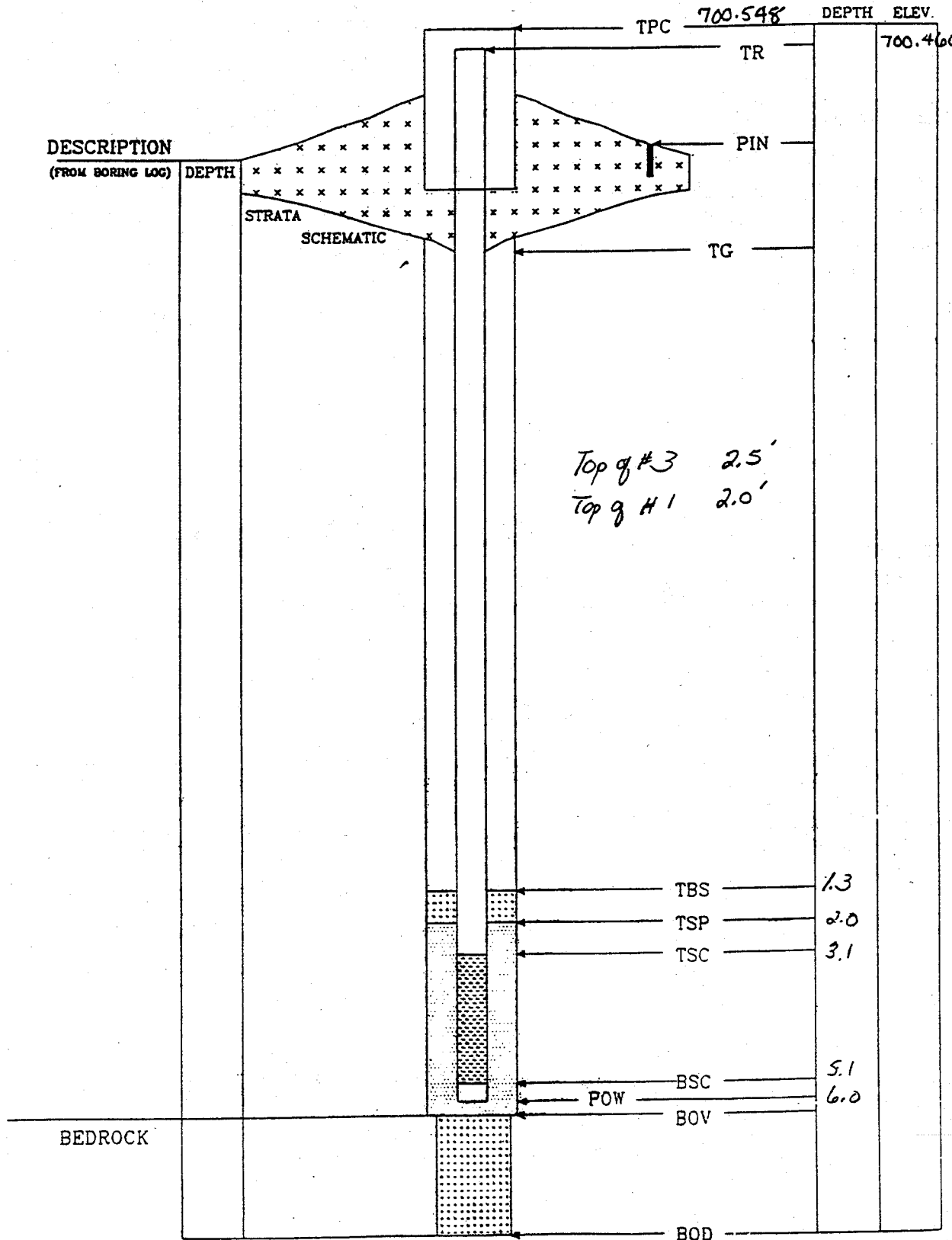
TBS 1.3  
TSP 2.0  
TSC 3.1

BSC 5.1  
POW 6.0  
BOV

BEDROCK

BOD

\* NOT TO SCALE



Parsons ES Inc.

WELL NUMBER: MW4-6

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734537-01001  
INSPECTOR: LLB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/19/98  
BORING DEPTH: 9.9'  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 9.8'  
INSTALLATION STARTED: 12/19/98  
INSTALLATION COMPLETED: 12/19/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: Sead #4  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: \_\_\_\_\_ NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:

TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:

TR: -2.3' TYPE: PVC DIAMETER: 2" LENGTH: 6.8'

SCREEN:

TSC: 4.5' TYPE: PVC DIAMETER: 2" LENGTH: 4.9' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)

TYPE: PVC BSC: 9.4' POW: 9.8'

SURFACE SEAL:

TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT:

TG: GS TYPE: Sand & Grift Gravel LENGTH: 2'  
JB

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 CASING:  
TR-TOP OF RISER  
PIN-SURVEYED GROUND SURFACE  
TG-TOP OF GROUT  
BD-BOTTOM OF DRILL HOLE  
BOV-BASE OF OVERBURDEN

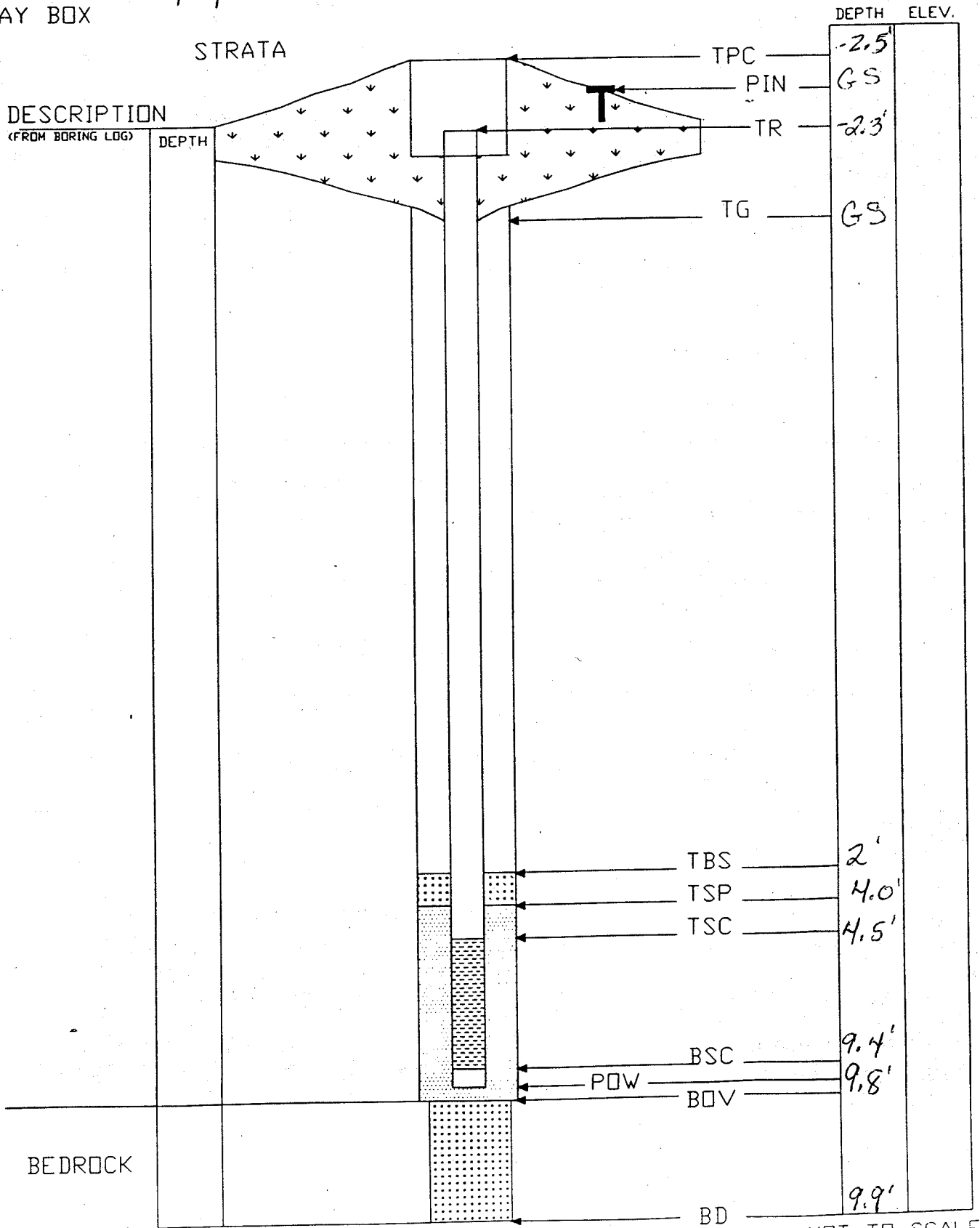
TBS-TOPOF BENTONITE SEAL  
TSP-TOP OF SANDPACK  
TSC-TOP OF SCREEN  
BSC-BOTTOM OF SCREEN  
POW-POINT OF WELL

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE



OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/19/98  
ROADWAY BOX



\* NOT TO SCALE

Parsons ES Inc.

WELL NUMBER: MW-7

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734539-01001  
INSPECTOR: LLB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/20/98  
BORING DEPTH: 6'  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 6.4'  
INSTALLATION STARTED: 12/20/98  
INSTALLATION COMPLETED: 12/20/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: Sead  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:

TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:

TR: -2.1 TYPE: PVC DIAMETER: 2" LENGTH: 5.3'

SCREEN:

TSC: 3.2' TYPE: PVC DIAMETER: 2" LENGTH: 2' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)

TYPE: PVC BSC: 5.2' POW: 6'

SURFACE SEAL:

TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT:

TG: 65 TYPE: Sand + Gravel LENGTH: 1' 25

SEAL:

TBS: 1' TYPE: Bentonite LENGTH: 1.5'

SAND PACK:

TSP: 2.5', 3.0' TYPE: #00, #0 LENGTH: 3.5'

COMMENTS:

LEGEND (DEPTH TO):

TPC-TOP OF PROTECTIVE CASING:  
TR-TOP OF RISER  
PIN-SURVEYED GROUND SURFACE  
TG-TOP OF GROUT  
BD-BOTTOM OF DRILL HOLE  
BOV-BASE OF OVERBURDEN

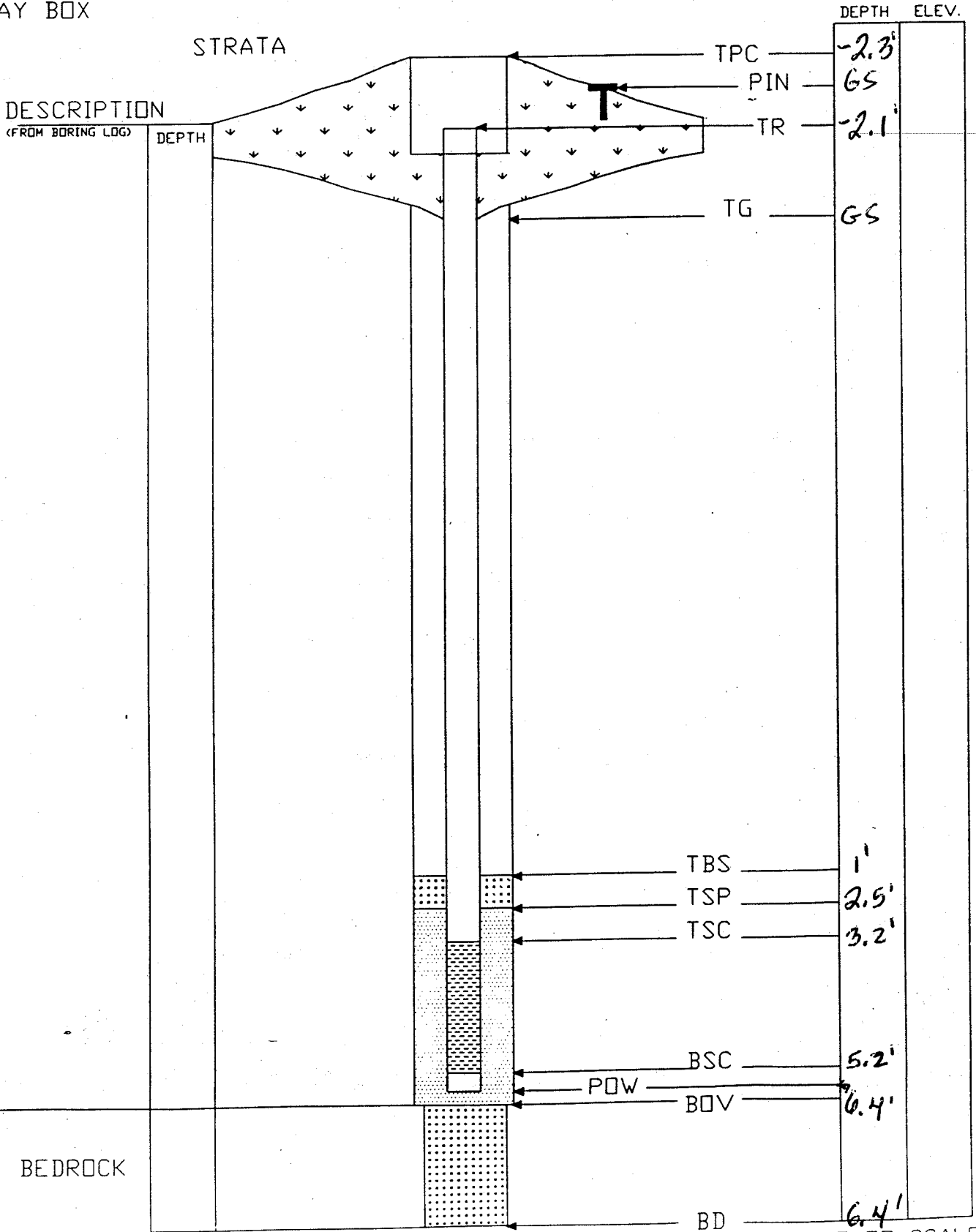
TBS-TOPOF BENTONITE SEAL  
TSP-TOP OF SANDPACK  
TSC-TOP OF SCREEN  
BSC-BOTTOM OF SCREEN  
POW-POINT OF WELL

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/20/98

ROADWAY BOX



\* NOT TO SCALE

Parsons ES Inc.

WELL NUMBER: MW4-8

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734539-01001  
INSPECTOR: LJB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Reeds  
DRILLING COMPLETED: 12/19/98  
BORING DEPTH: 10'  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 9.9'  
INSTALLATION STARTED: 12/19/98  
INSTALLATION COMPLETED: 12/19/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Reeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: Sead  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 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: 9.5' POW: 10'

SURFACE SEAL: TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT: TG: GS TYPE: Sand & Gravel LENGTH: 2'

SEAL: TBS: 2' TYPE: Bentonite LENGTH: 2'

SAND PACK: TSP: 4.0', 4.6' TYPE: #00, #0 LENGTH: 6.0'

COMMENTS:

LEGEND (DEPTH TO):

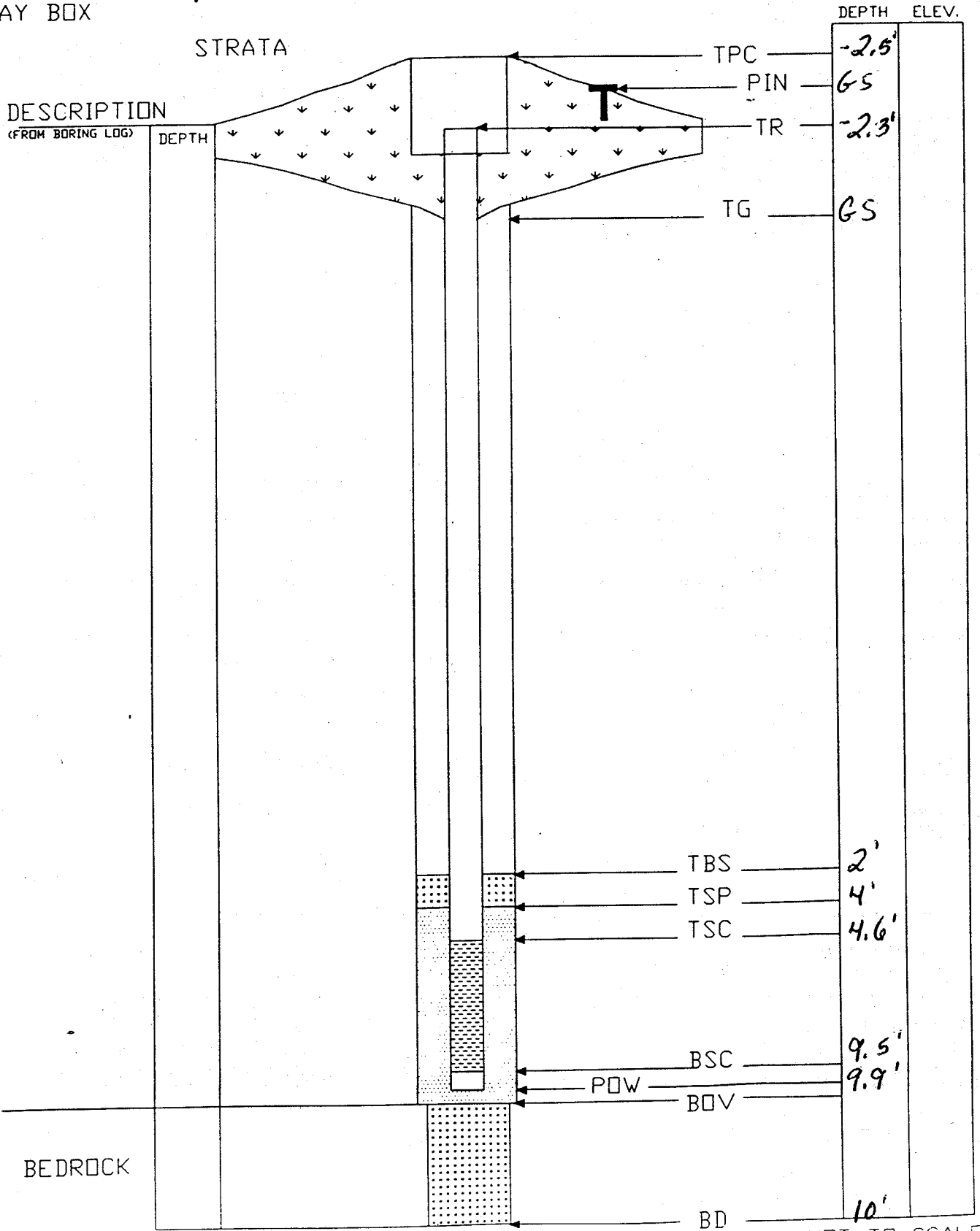
TPC-TOP OF PROTECTIVE CASING:  
TR-TOP OF RISER  
PIN-SURVEYED GROUND SURFACE  
TG-TOP OF GROUT  
BD-BOTTOM OF DRILL HOLE  
BOV-BASE OF OVERBURDEN

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

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/19/98  
ROADWAY BOX



\* NOT TO SCALE

Parsons ES Inc.

WELL NUMBER: MW4-9

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734539-01001  
INSPECTOR: Lib  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/20/98  
BORING DEPTH: 6.2  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 3"

POW DEPTH: 6.5'  
INSTALLATION STARTED: 12/20/98  
INSTALLATION COMPLETED: 12/20/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: SEAD  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:  
TR: -2.3' TYPE: PVC DIAMETER: 2" LENGTH: 5.7'

SCREEN:  
TSC: 3.4' TYPE: PVC DIAMETER: 2" LENGTH: 2' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)  
TYPE: PVC BSC: 5.4' POW: 6.2'

SURFACE SEAL:  
TYPE: Grout DIAMETER: 2' THICKNESS: 1"

GROUT: TG: GS TYPE: Sand + Gravel LENGTH: 1'

SEAL: TBS: 1' TYPE: Bentonite LENGTH: 1.5'

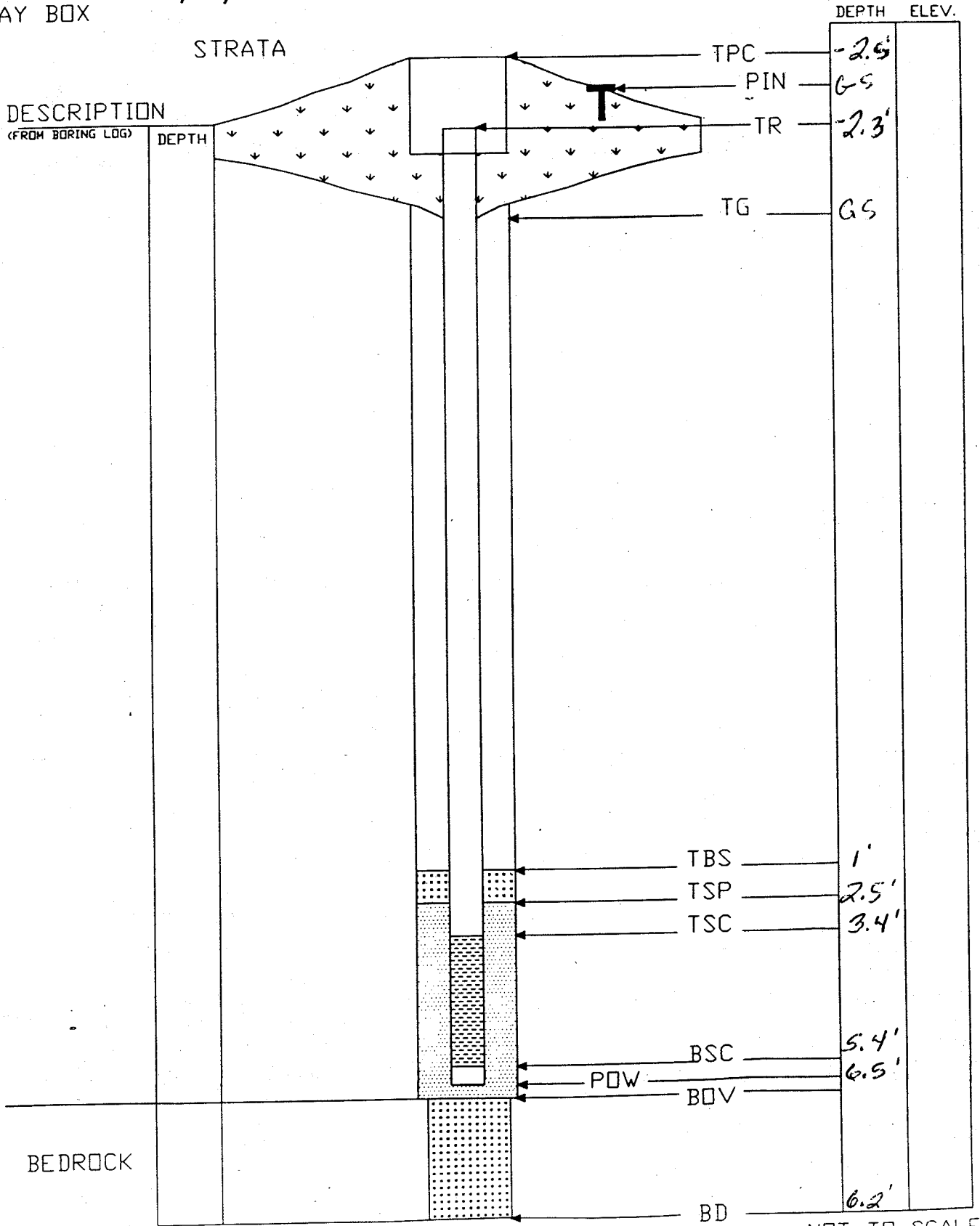
SAND PACK: TSP: 2.5', 3.0' TYPE: #00, #0 LENGTH: 3.8'

COMMENTS:

LEGEND (DEPTH TO):  
TPC-TOP OF PROTECTIVE CASING: TBS-TOPOF BENTONITE SEAL  
TR-TOP OF RISER TSP-TOP OF SANDPACK  
PIN-SURVEYED GROUND SURFACE TSC-TOP OF SCREEN  
TG-TOP OE GROUT BSC-BOTTOM OF SCREEN  
BD-BOTTOM OF DRILL HOLE POW-POINT OF WELL  
NOV-BASE OF OVERBURDEN \* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/20/98  
ROADWAY BOX



\* NOT TO SCALE

Parsons ES Inc.

WELL NUMBER: MW4-10

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead4

PROJECT NO: 734539-01001  
INSPECTOR: LLB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/17/98  
BORING DEPTH: 8.0'  
DRILLING METHOD(S): 4 1/2" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 8.1"  
INSTALLATION STARTED: 12/17/98  
INSTALLATION COMPLETED: 12/17/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: SEAD  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:  
TR: -2.1' TYPE: PVC DIAMETER: 2" LENGTH: 4.7'

SCREEN:  
TSC: 2.6' TYPE: Pvc DIAMETER: 2" LENGTH: 4.9' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)  
TYPE: PVC BSC: 7.5' POW: 8.0'

SURFACE SEAL: TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT: TG: 6.5 TYPE: Sand & Gravel LENGTH: 1.0'

SEAL: TBS: 1.0' TYPE: Bentonite LENGTH: 1.0'

SAND PACK: TSP: 2.0', 2.5' TYPE: #00, #0 LENGTH: 6.0'

COMMENTS:

LEGEND (DEPTH TO):

TPC - TOP OF PROTECTIVE CASING  
TR - TOP OF RISER  
PIN - SURVEYED GROUND SURFACE  
TG - TOP OF GROUT  
BD - BOTTOM OF DRILL HOLE  
BOV - BASE OF OVERBURDEN

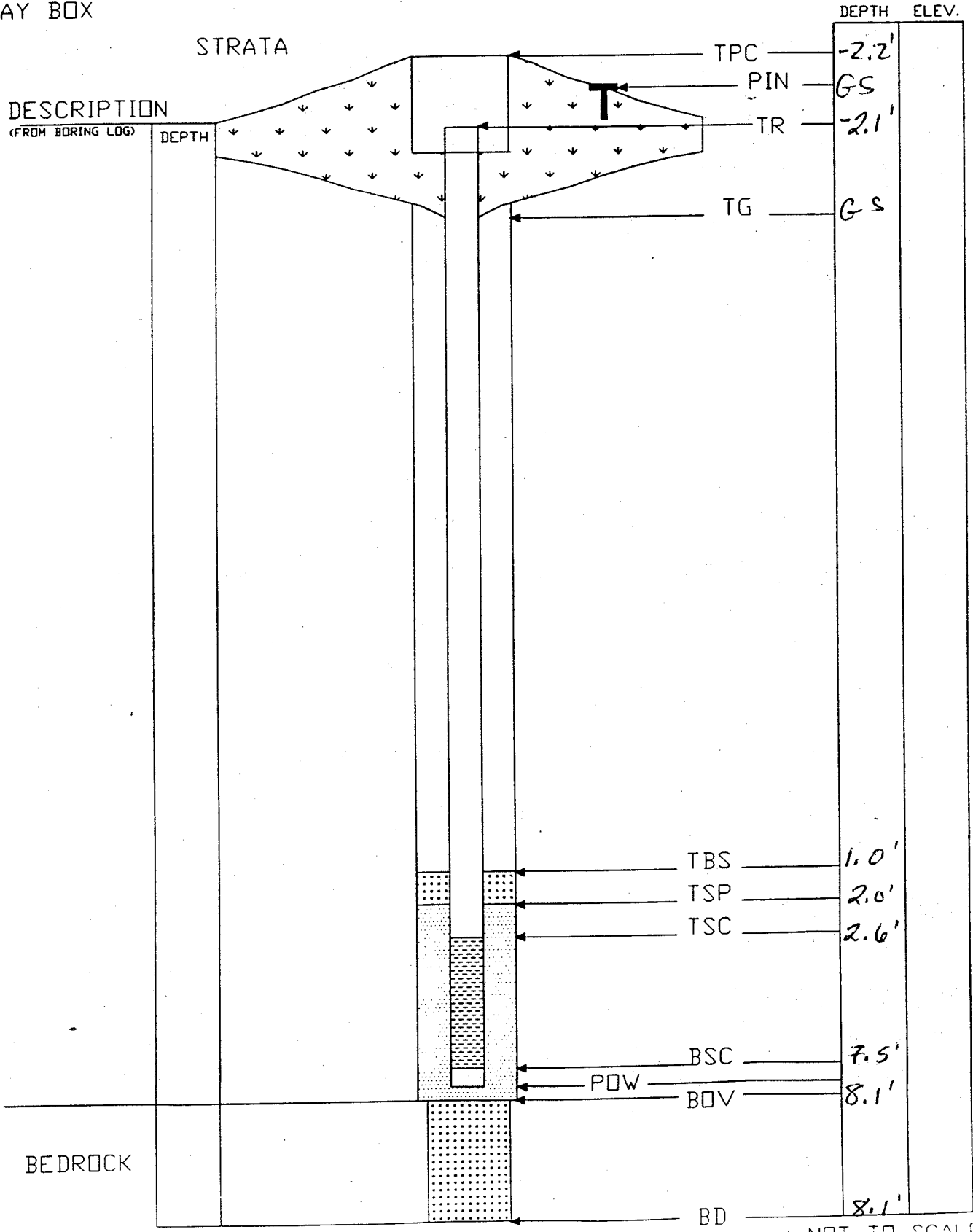
TBS - TOPOF BENTONITE SEAL  
TSP - TOP OF SANDPACK  
TSC - TOP OF SCREEN  
BSC - BOTTOM OF SCREEN  
POW - POINT OF WELL

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE



OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/17/98  
ROADWAY BOX



Parsons ES Inc.

WELL NUMBER: MW4-11

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734539-01001  
INSPECTOR: CLB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/20/98  
BORING DEPTH: 9'  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 9'  
INSTALLATION STARTED: 12/20/98  
INSTALLATION COMPLETED: 12/20/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: SEAD  
COORDINATE SYSTEM: \_\_\_\_\_ NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
DATUM: \_\_\_\_\_ NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_ TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:  
TR: -2.5' TYPE: PVC DIAMETER: 2" LENGTH: 6.1'

SCREEN:  
TSC: 3.6' TYPE: PVC DIAMETER: 2" LENGTH: 4.6' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)  
TYPE: PVC BSC: 8.2' POW: 9'

SURFACE SEAL: TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT: TG: 65 TYPE: Sand & Gravel LENGTH: 1.5'

SEAL: TBS: 1.5' TYPE: Bentonite LENGTH: 1.5'

SAND PACK: TSP: 3.0', 3.5' TYPE: #00, #0 LENGTH: 6.0'

COMMENTS:

LEGEND (DEPTH TO):

TPC - TOP OF PROTECTIVE CASING:  
TR - TOP OF RISER  
PIN - SURVEYED GROUND SURFACE  
TG - TOP OF GROUT  
BD - BOTTOM OF DRILL HOLE  
OV - BASE OF OVERBURDEN

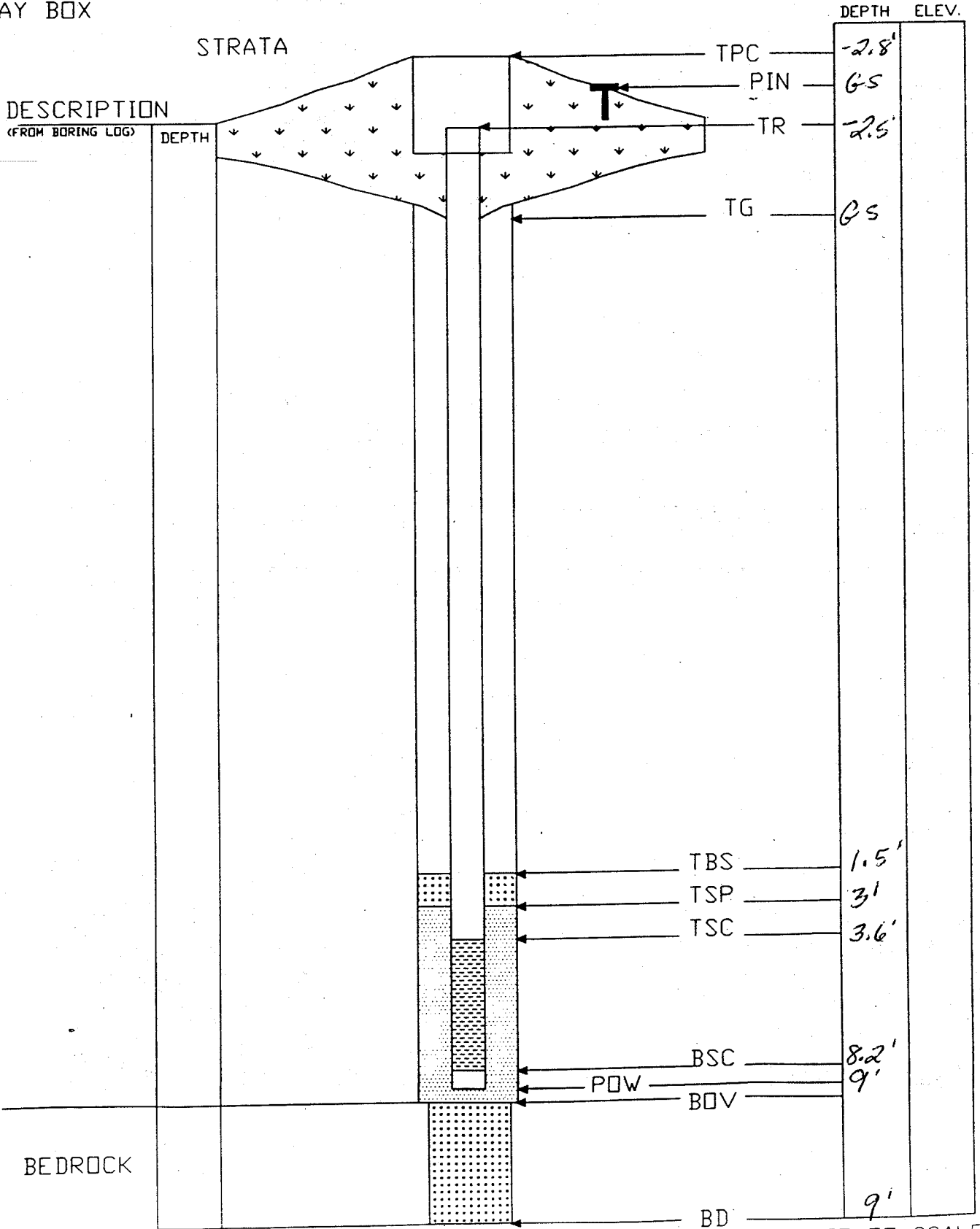
TBS - TOP OF BENTONITE SEAL  
TSP - TOP OF SANDPACK  
TSC - TOP OF SCREEN  
BSC - BOTTOM OF SCREEN  
POW - POINT OF WELL

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/20/98

ROADWAY BOX



\* NOT TO SCALE

Parsons ES Inc.

WELL NUMBER: MW 4-12

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sead 4

PROJECT NO: 734539-01001  
INSPECTOR: LLR  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/21/98  
BORING DEPTH: 11'  
DRILLING METHOD(S): 4 1/4" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 11'  
INSTALLATION STARTED: 12/21/98  
INSTALLATION COMPLETED: 12/21/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: SEAD  
COORDINATE SYSTEM: \_\_\_\_\_  
DATUM: NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_

NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:  
TR: -2.4' TYPE: PVC DIAMETER: 2" LENGTH: 8.0'

SCREEN:  
TSC: 5.6' TYPE: PVC DIAMETER: 2" LENGTH: 4.6' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)  
TYPE: PVC BSC: 10.2' POW: 11'

SURFACE SEAL: TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT: TG: 65 TYPE: Sand & Gravel LENGTH: 2.6'

SEAL: TBS: 2.6' TYPE: Bentonite LENGTH: 2.0'

SAND PACK: TSP: 4.6', 5.6' TYPE: #00, #0 LENGTH: 6.4'

COMMENTS:

LEGEND (DEPTH TO):

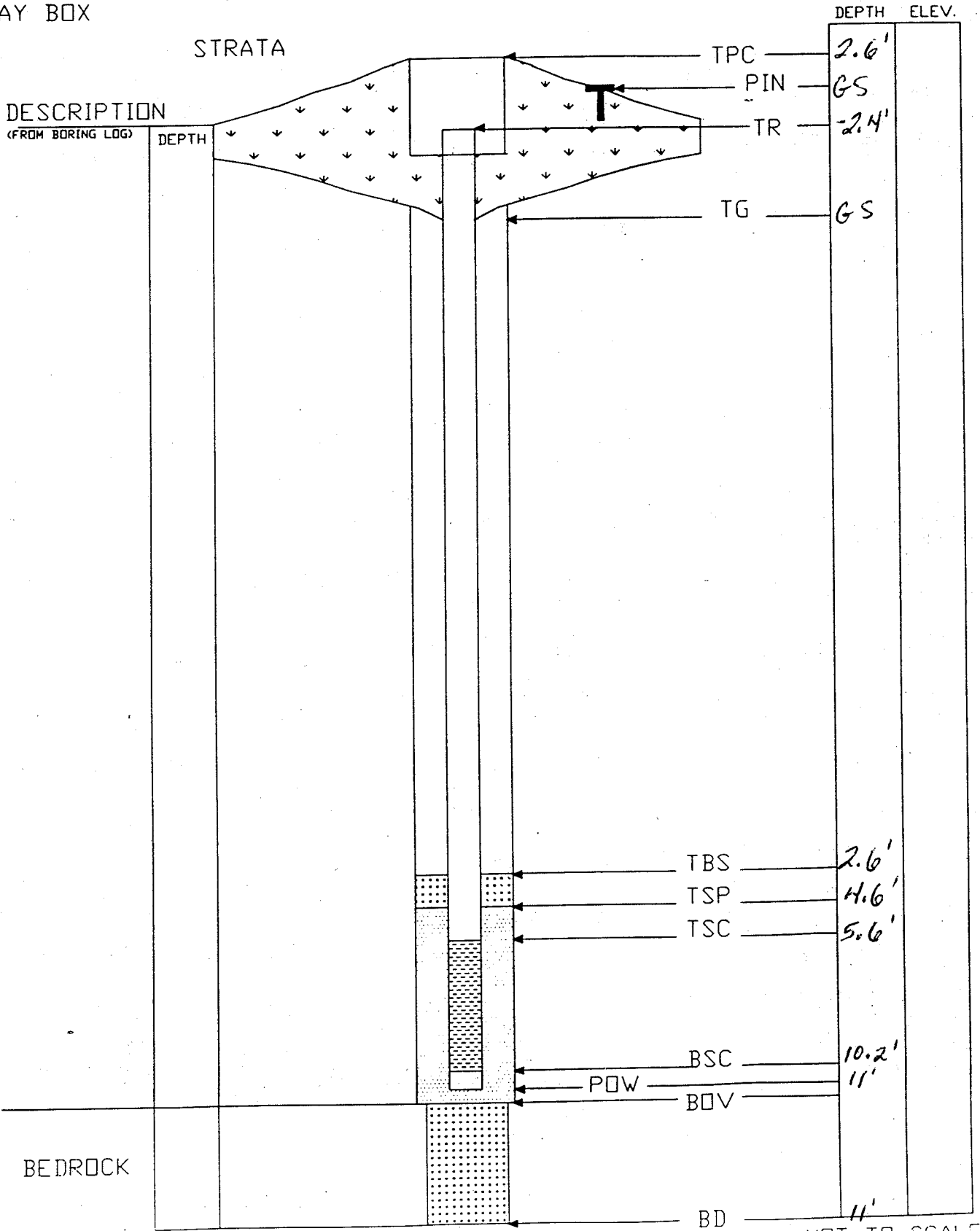
TPC-TOP OF PROTECTIVE CASING:  
TR-TOP OF RISER  
PIN-SURVEYED GROUND SURFACE  
TG-TOP OF GROUT  
BD-BOTTOM OF DRILL HOLE  
BOV-BASE OF OVERBURDEN

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

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/21/98  
ROADWAY BOX



Parsons ES Inc.

WELL NUMBER: MW 4-13

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

CLIENT/PROJECT: Seneca Army Depot  
LOCATION: Sec 4

PROJECT NO: 734539-01001  
INSPECTOR: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Maxim  
DRILLER: S. Breeds  
DRILLING COMPLETED: 12/20/98  
BORING DEPTH: 6.7'  
DRILLING METHOD(S): 4 1/2" HSA  
BORING DIAMETER(S): 8"

POW DEPTH: 6.8'  
INSTALLATION STARTED: 12/20/98  
INSTALLATION COMPLETED: 12/20/98  
SURFACE COMPLETION DATE: 1/7/99  
COMPLETION CONTRACTOR/CREW: Maxim/Breeds  
BEDROCK CONFIRMED: Y

ASSOCIATED SWMU/AOC: SEAD  
COORDINATE SYSTEM: \_\_\_\_\_ NORTHING: \_\_\_\_\_ EASTING: \_\_\_\_\_  
DATUM: \_\_\_\_\_ NGVD 1929  
ELEVATIONS: PIN: \_\_\_\_\_ TOC: \_\_\_\_\_ TPC: \_\_\_\_\_

PROTECTIVE CASING:  
TYPE: Steel DIAMETER: 4" LENGTH: 5'

RISER:  
TR: -2.3' TYPE: PVC DIAMETER: 2" LENGTH: 6.2'

SCREEN:  
TSC: 3.9' TYPE: PVC DIAMETER: 2" LENGTH: 2' SLOT SIZE: 10

POINT OF WELL:(SILT SUMP)  
TYPE: PVC BSC: 5.9' POW: 6.7'

SURFACE SEAL: TYPE: Grout DIAMETER: 2' THICKNESS: 1'

GROUT: TG: GS TYPE: Sand + Gravel LENGTH: 1'

SEAL: TBS: 1' TYPE: Bentonite LENGTH: 1.5'

SAND PACK: TSP: 2.5', 3.0' TYPE: #00, #0 LENGTH: 4.2'

COMMENTS:

LEGEND (DEPTH TO):

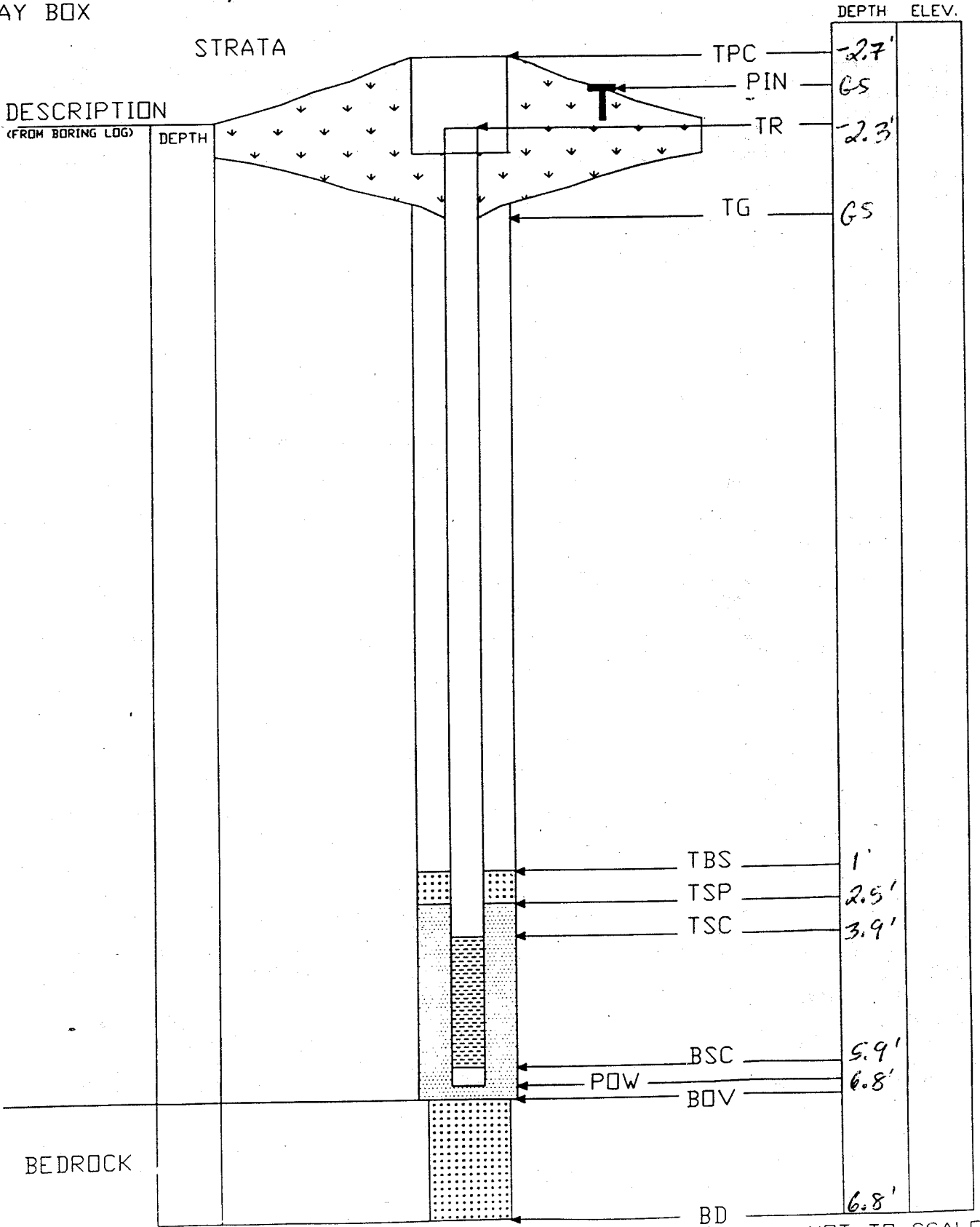
TPC - TOP OF PROTECTIVE CASING  
TR - TOP OF RISER  
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TG - TOP OF GROUT  
BD - BOTTOM OF DRILL HOLE  
POV - BASE OF OVERBURDEN

TBS - TOP OF BENTONITE SEAL  
TSP - TOP OF SANDPACK  
TSC - TOP OF SCREEN  
BSC - BOTTOM OF SCREEN  
POW - POINT OF WELL

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

OVERBURDEN MONITORING WELL  
COMPLETION REPORT & INSTALLATION DETAIL

DATE INSTALLED: 12/20/98  
ROADWAY BOX



\* NOT TO SCALE

# COMPLETION REPORT OF WELL No. MW5-1

<p>PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b></p> <p>PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b></p> <p>DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b></p> <p>DRILLING METHOD: <b>HOLLOW STEM AUGER</b></p> <p>WELL INSTALLATION STARTED: <b>03/16/94</b></p> <p>WELL INSTALLATION COMPLETED: <b>03/16/94</b></p>	<p>WELL LOCATION (N/E): <b>998728.7 750506.4</b></p> <p>REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b></p> <p>GROUND SURFACE ELEVATION (ft): <b>738.4</b></p> <p>DATUM: <b>NAD 1983</b></p> <p>GEOLOGIST: <b>F. O'LOUGHLIN</b></p> <p>CHECKED BY: <b>KK</b></p>
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STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																																	
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 3.8 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 2, 4																																																	
				TR																																																		
				TC																																																		
			0.0	GS 738.4																																																		
OL					<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.5 <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b> <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 1.4 <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: <b>8.95</b>																																																	
GM																																																						
ML			1.5	TBS 736.9																																																		
-																																																						
ML			2.9	TSP 735.5																																																		
CL																																																						
ML-CL			4.3	TSC 734.1																																																		
ML-CL																																																						
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ML																																																						
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SM			11.0	BSC 727.4																																																		
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			POW POINT OF WELL																																																			



# COMPLETION REPORT OF WELL No. MW5-2

PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b> PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b> DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b> DRILLING METHOD: <b>HOLLOW STEM AUGER</b> WELL INSTALLATION STARTED: <b>03/04/94</b> WELL INSTALLATION COMPLETED: <b>03/04/94</b>	WELL LOCATION (N/E): <b>998755.5 750226.3</b> REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b> GROUND SURFACE ELEVATION (ft): <b>736.0</b> DATUM: <b>NAD 1983</b> GEOLOGIST: <b>F. O'LOUGHLIN</b> CHECKED BY: <b>KK</b>
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STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																										
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5																										
				TR																											
				TC																											
			0.0	GS		736.0																									
PT					<b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 4																										
ML-CL			1.8	TBS		734.2																									
SM					<b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 4, .9																										
-			2.8	TSP		733.2																									
ML					<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.8  <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>  <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 1																										
ML			3.3	TSC		732.7																									
ML						<b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 7.2																									
ML			9.1	BSC			726.9																								
ML					<b>WELL DEVELOPMENT DATA</b> Date: <b>3/8/94</b> Method: <b>BAIL</b> Duration: <b>85 MIN</b> Rate: <b>2.1 L/MIN</b> Final Measurements:																										
ML			10.0	POW		726.0																									
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					<b>LEGEND</b> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">  SURFACE SEAL   GROUT   SEAL   SANDPACK                 </td> <td style="width: 33%;">  GRAVEL   SAND   SILT   CLAY   NO RECOVERY                 </td> <td style="width: 33%;">                     TPC TOP OF PROTECTIVE CASING                      TR TOP OF WELL RISER                      GS GROUND SURFACE                      TG TOP OF GROUT                      TBS TOP BENTONITE SEAL                      TSP TOP OF SANDPACK                      TSC TOP OF SCREEN                      BSC BOTTOM OF SCREEN                      TD TOTAL DEPTH                      POW POINT OF WELL                 </td> </tr> </table>	SURFACE SEAL GROUT SEAL SANDPACK	GRAVEL SAND SILT CLAY NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TG TOP OF GROUT TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL																							
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# COMPLETION REPORT OF WELL No. MW5-3

PROJECT:	EIGHT MODERATELY LOW PRIORITY AOCs	WELL LOCATION (N/E):	998884.9 750255.7
PROJECT LOCATION:	SENECA ARMY DEPOT, ROMULUS NY	REFERENCE COORDINATE SYSTEM:	NEW YORK STATE PLAN
DRILLING CONTRACTOR:	EMPIRE SOILS INVESTIGATIONS	GROUND SURFACE ELEVATION (ft):	736.9
DRILLING METHOD:	HOLLOW STEM AUGER	DATUM:	NAD 1983
WELL INSTALLATION STARTED:	03/17/94	GEOLOGIST:	F. O'LOUGHLIN
WELL INSTALLATION COMPLETED:	03/17/94	CHECKED BY:	KK

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																								
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																																												
				TPC	<b>PROTECTIVE COVER</b> Diameter: 8 Type: ROADWAY BOX Interval: 1 <b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 2.9 <b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 3.95																																								
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				TC																																									
			0.0	GS 736.9																																									
ML			0.8	TBS 736.1	<b>SURFACE SEAL</b> Type: CEMENT Interval: .8 <b>GROUT</b> Type: N/A Interval: N/A <b>SEAL</b> Type: BENTONITE Interval: 1.7 <b>SANDPACK</b> Type: #1, #3 Interval: 6																																								
ML			2.5	TSP 734.4																																									
SM ML ML-CL			3.5	TSC 733.4																																									
CL-ML			7.4	BSC 729.5																																									
GM-GC CL	5				<b>WELL DEVELOPMENT DATA</b> Date: 3/20/94 Method: BAIL/PUMP Duration: 2 DAYS Rate: .100 L/MIN Final Measurements:																																								
CL			8.5	POW 728.4		<b>WATER LEVELS</b> <table border="1" style="font-size: small;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>3/19</td> <td>1430</td> <td>3.33</td> </tr> <tr> <td>3/19</td> <td>1550</td> <td>6.06</td> </tr> <tr> <td>3/20</td> <td>1020</td> <td>5.3</td> </tr> </tbody> </table>	Date	Time	Depth, TR	3/19	1430	3.33	3/19	1550	6.06	3/20	1020	5.3																											
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pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)																																										
7.00	5	900	11.6																																										
					<b>LEGEND</b> <table border="0" style="font-size: x-small;"> <tr> <td></td> <td>GRAVEL</td> <td>TPC</td> <td>TOP OF PROTECTIVE CASING</td> </tr> <tr> <td></td> <td>SURFACE SEAL</td> <td>TR</td> <td>TOP OF WELL RISER</td> </tr> <tr> <td></td> <td>GROUT</td> <td>GS</td> <td>GROUND SURFACE</td> </tr> <tr> <td></td> <td>SEAL</td> <td>TG</td> <td>TOP OF GROUT</td> </tr> <tr> <td></td> <td>SANDPACK</td> <td>TBS</td> <td>TOP BENTONITE SEAL</td> </tr> <tr> <td></td> <td>SAND</td> <td>TSP</td> <td>TOP OF SANDPACK</td> </tr> <tr> <td></td> <td>SILT</td> <td>TSC</td> <td>TOP OF SCREEN</td> </tr> <tr> <td></td> <td>CLAY</td> <td>BSC</td> <td>BOTTOM OF SCREEN</td> </tr> <tr> <td></td> <td>NO RECOVERY</td> <td>TD</td> <td>TOTAL DEPTH</td> </tr> <tr> <td></td> <td></td> <td>POW</td> <td>POINT OF WELL</td> </tr> </table>		GRAVEL	TPC	TOP OF PROTECTIVE CASING		SURFACE SEAL	TR	TOP OF WELL RISER		GROUT	GS	GROUND SURFACE		SEAL	TG	TOP OF GROUT		SANDPACK	TBS	TOP BENTONITE SEAL		SAND	TSP	TOP OF SANDPACK		SILT	TSC	TOP OF SCREEN		CLAY	BSC	BOTTOM OF SCREEN		NO RECOVERY	TD	TOTAL DEPTH			POW	POINT OF WELL
	GRAVEL	TPC	TOP OF PROTECTIVE CASING																																										
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	SAND	TSP	TOP OF SANDPACK																																										
	SILT	TSC	TOP OF SCREEN																																										
	CLAY	BSC	BOTTOM OF SCREEN																																										
	NO RECOVERY	TD	TOTAL DEPTH																																										
		POW	POINT OF WELL																																										



**ENGINEERING-SCIENCE, INC.**

UNITED STATES ARMY  
CORPS OF ENGINEERS  
Seneca Army Depot  
Romulus, New York

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

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

ENGINEERING-SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW11-1</u>	
PROJECT: <u>10 SWMU -</u>		PROJECT NO: _____		
LOCATION: <u>SEAD -11</u>		INSPECTOR: <u>ES/LB</u>		
		CHECKED BY: _____		
DRILLING CONTRACTOR: <u>Empire</u>		POW DEPTH: <u>14.2'</u>		
DRILLER: <u>Alan</u>		INSTALLATION STARTED: <u>11/3/93</u>		
DRILLING COMPLETED: <u>11/3/93</u>		INSTALLATION COMPLETED: <u>11/3/93</u>		
BORING DEPTH: <u>14.2'</u>		SURFACE COMPLETION DATE: <u>11/3/93</u>		
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>Empire</u>		
BORING DIAMETER(S): <u>8 1/2"</u>		BEDROCK CONFIRMED (Y/N?): _____		
ASSOCIATED SWMU/AOC: _____		ESTIMATED GROUND ELEVATION: _____		
PROTECTIVE SURFACE CASING:				
		DIAMETER: <u>4" x 4" steel</u>	LENGTH: <u>5'</u>	
RISER:				
TR: _____		TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: _____
SCREEN:				
TSC: <u>6.1'</u>		TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>3'</u> SLOT SIZE: <u>0.01"</u>
POINT OF WELL (SILT SUMP)				
TYPE: <u>PVC point</u>		BSC: <u>13.5'</u>	POW: <u>14.2'</u>	<u>0.5' point</u>
GROUT:				
TG: <u>0.0</u>		TYPE: <u>cem 3</u>	LENGTH: <u>3.0</u>	
SEAL: TBS: <u>3.6'</u>		TYPE: <u>Portland</u>	LENGTH: <u>1.0</u>	
SAND PACK: TSP: <u>4.6' #1</u>		TYPE: <u>#3 Silica</u>	LENGTH: <u>0</u>	
SURFACE COLLAR:				
TYPE: <u>grout</u>		RADIUS: <u>2.2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS				
DEPTH 1: <u>-</u>		DEPTH 2: <u>-</u>	DEPTH 3: _____	DEPTH 4: _____
COMMENTS:				

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

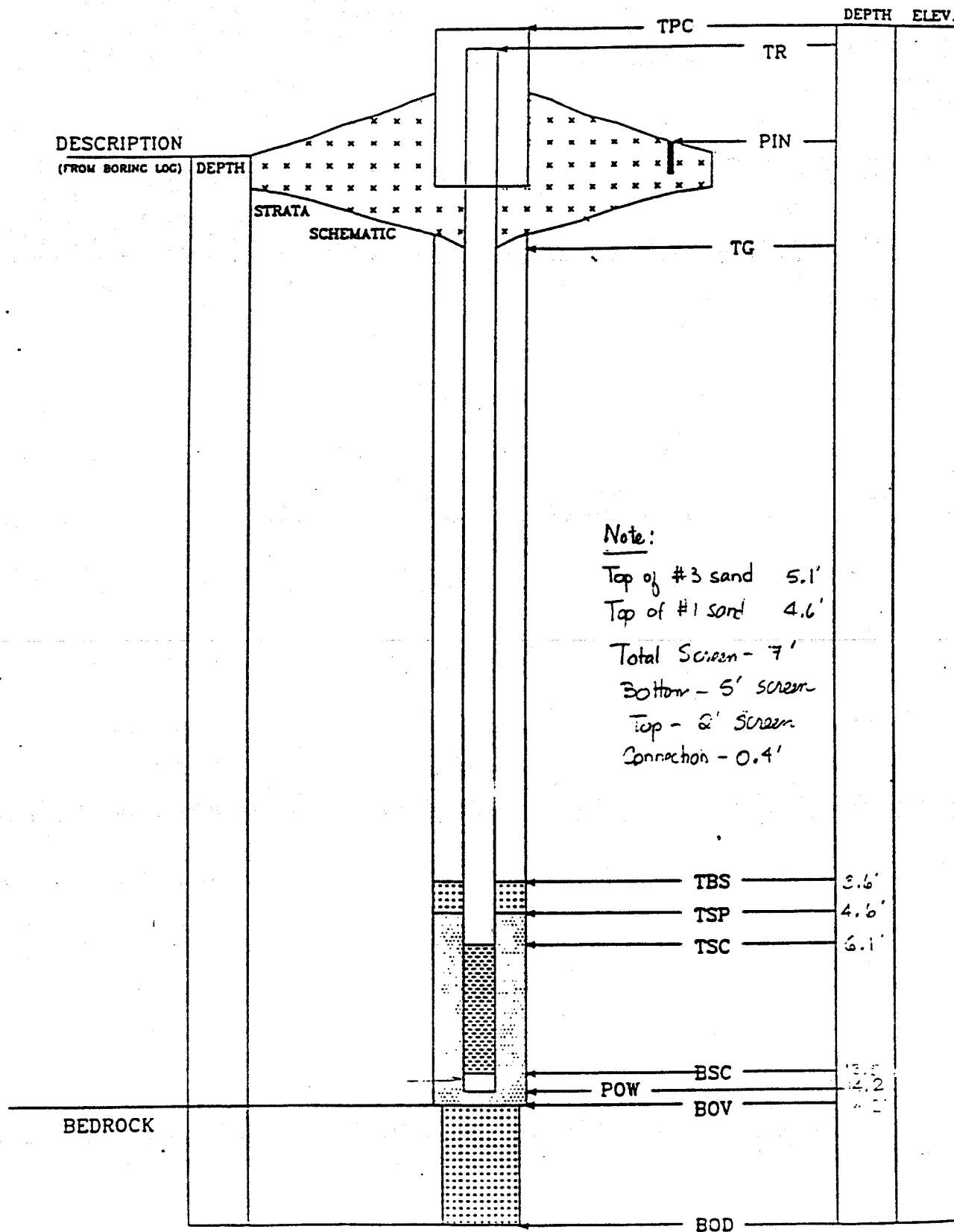
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW11-1*

DATE: \_\_\_\_\_



*depths measured from ground surface.*

• NOT TO SCALE

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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>MW11-2</u>
PROJECT: <u>10 SWMU</u>	PROJECT NO: _____	
LOCATION: <u>SEAD 11</u>	INSPECTOR: <u>ES</u>	
		CHECKED BY: _____

DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>8.5'</u>
DRILLER: <u>John W.</u>	INSTALLATION STARTED: <u>11/16/93</u>
DRILLING COMPLETED: <u>11/16/93</u>	INSTALLATION COMPLETED: <u>11/16/93</u>
BORING DEPTH: <u>8.5'</u>	SURFACE COMPLETION DATE: <u>11/16/93</u>
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire</u>
BORING DIAMETER(S): <u>8 1/2"</u>	BEDROCK CONFIRMED (Y/N?): _____
ASSOCIATED SWMU/AOC: <u>11</u>	ESTIMATED GROUND ELEVATION: _____

PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel LENGTH: \_\_\_\_\_

RISER:

TR: \_\_\_\_\_ TYPE: PVC-40 DIAMETER: 2" LENGTH: \_\_\_\_\_

SCREEN:

TSC: 34 TYPE: PVC-40 DIAMETER: 1 1/2" LENGTH: 4' SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 7.4 POW: 8.5'

GROUT:

TG: Ground TYPE: Cement-bentonite LENGTH: 1.8'

SEAL:

TBS: 1.8' TYPE: bentonite pellets LENGTH: 0.6'

SAND PACK:

TSP: 2.4 TYPE: #3 + #1 LENGTH: 6.7'

SURFACE COLLAR:

TYPE: Cement RADIUS: 2' x 2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

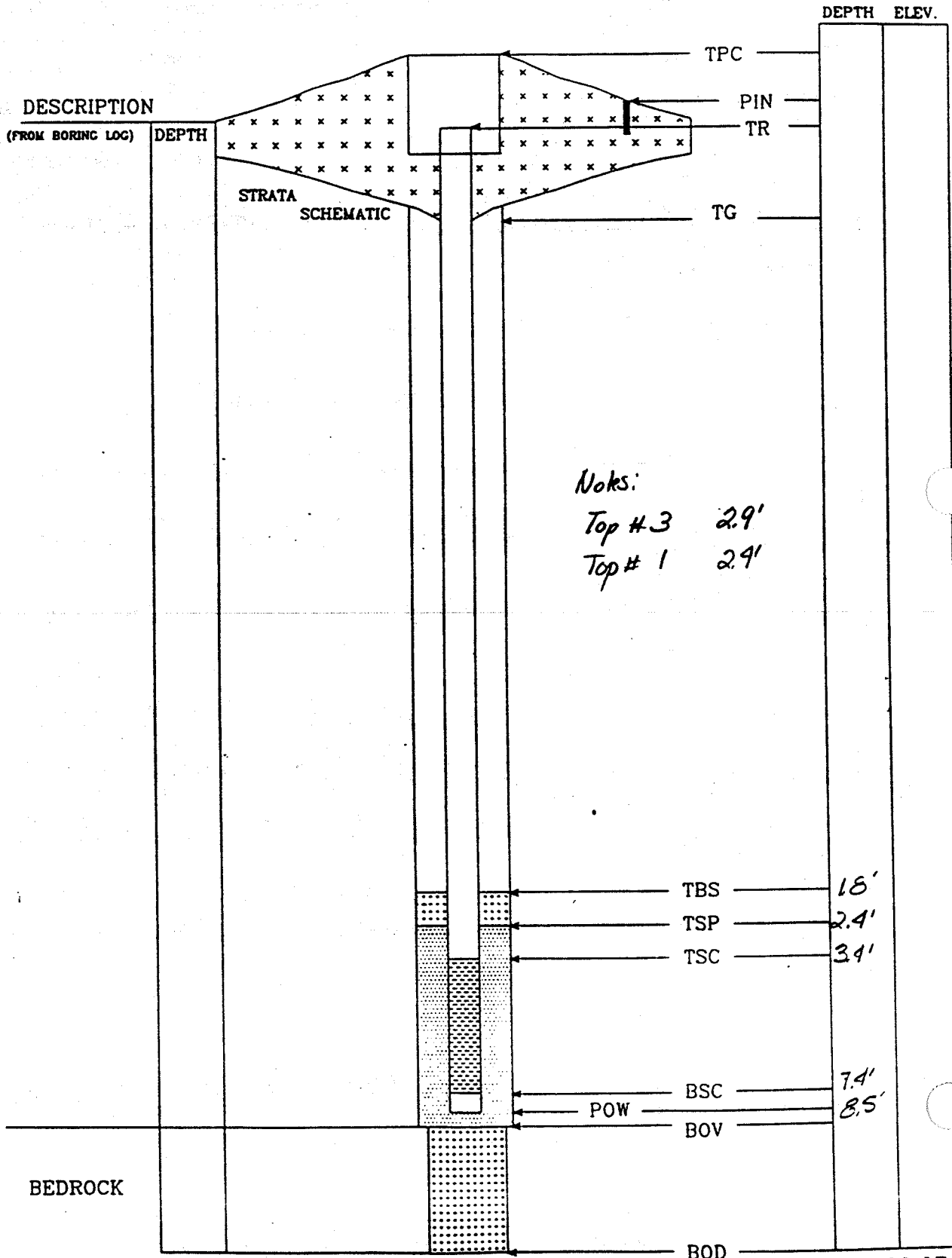
**OVERBURDEN MONITORING WELL  
ROADWAY BOX INSTALLATION DETAIL**

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW11-2*

DATE: *11/16/93*



*Note: All depths to ground surface.*

**\* NOT TO SCALE**

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

ENGINEERING-SCIENCE, INC. CLIENT:		WELL #: MW-11-3	
PROJECT: <u>10-SWmu</u>		PROJECT NO: _____	
LOCATION: <u>SEAD .11</u>		INSPECTOR: <u>ES/LB</u>	
		CHECKED BY: _____	
DRILLING CONTRACTOR: <u>Empire</u>		POW DEPTH: <u>9.0'</u>	
DRILLER: <u>A1</u>		INSTALLATION STARTED: <u>11/4/93</u>	
DRILLING COMPLETED: <u>11/4/93</u>		INSTALLATION COMPLETED: <u>11/5/93</u>	
BORING DEPTH: <u>9.0'</u>		SURFACE COMPLETION DATE: <u>11/5/93</u>	
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: _____	
BORING DIAMETER(S): <u>8 1/2"</u>		BEDROCK CONFIRMED (Y/N?): _____	
ASSOCIATED SWMU/AOC: <u>11</u>		ESTIMATED GROUND ELEVATION: _____	
PROTECTIVE SURFACE CASING:			
DIAMETER: <u>4" x 4" Steel</u>		LENGTH: <u>4'- total length</u>	
RISER:			
TR: _____	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: _____
SCREEN:			
TSC: <u>39'</u>	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>4.0'</u> SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)			
TYPE: <u>PVC point</u>	BSC: <u>7.9'</u>	POW: <u>9.0'</u>	<u>11' betw. POW and BSC.</u>
GROUT:			
TG: <u>NA</u>	TYPE: _____	LENGTH: _____	
SEAL:			
TBS: <u>near surface</u>	TYPE: <u>bentonite pellets</u>	LENGTH: <u>24'</u>	
SAND PACK:			
TSP: <u>2.4' → #1 29 #3</u>	TYPE: <u>#3 sand #1</u>	LENGTH: <u>6.6'</u>	
SURFACE COLLAR:			
TYPE: <u>Cement</u>	RADIUS: <u>2' x 2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS			
DEPTH 1: _____	DEPTH 2: _____	DEPTH 3: _____	DEPTH 4: _____
COMMENTS:			
<p><u>Well screen is 4.0'</u>  <u>Depth to POW from BSC 11'</u> } <u>note change</u></p>			
* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE			

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

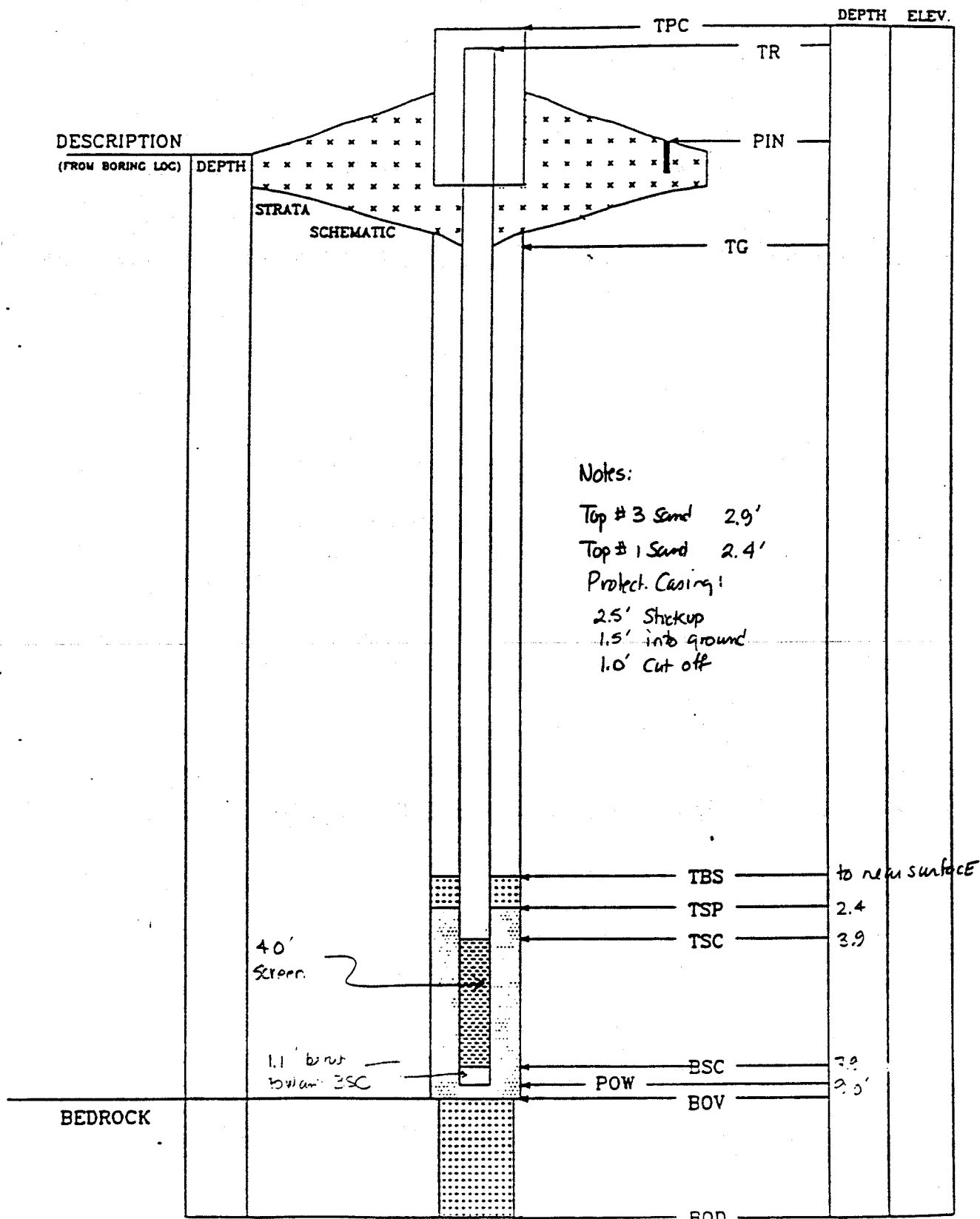
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW11-3

DATE: \_\_\_\_\_



**Notes:**

- Top # 3 Sand 2.9'
- Top # 1 Sand 2.4'
- Protect. Casing!
- 2.5' Shetkup
- 1.5' into ground
- 1.0' Cut off

*All depths measured from ground surface*

• NOT TO SCALE



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

ENGINEERING-SCIENCE, INC. CLIENT: \_\_\_\_\_ WELL #: MW11-4

PROJECT: 10 SWMU  
LOCATION: SEAD-11

PROJECT NO: \_\_\_\_\_  
INSPECTOR: E/S / LB  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: EMPIRE  
DRILLER: AL  
DRILLING COMPLETED: 11/4/93  
BORING DEPTH: 10.5'  
DRILLING METHOD(S): HSA  
BORING DIAMETER(S): 8 1/2"  
ASSOCIATED SWMU/AOC: 11

POW DEPTH: 10.5'  
INSTALLATION STARTED: 11/4/93  
INSTALLATION COMPLETED: \_\_\_\_\_  
SURFACE COMPLETION DATE: \_\_\_\_\_  
COMPLETION CONTRACTOR/CREW: Empire  
BEDROCK CONFIRMED (Y/N?): Y  
ESTIMATED GROUND ELEVATION: \_\_\_\_\_

### PROTECTIVE SURFACE CASING:

DIAMETER: 4"x4" Steel LENGTH: '2.9' Stickup

### RISER:

TR: \_\_\_\_\_ TYPE: PVC-40 DIAMETER: 2" LENGTH: 2.5'

### SCREEN:

TSC: 4.8' TYPE: PVC-40 DIAMETER: 2" LENGTH: 5.0' SLOT SIZE: 0.01"

### POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 9.8' POW: 10.5' 0.5' point

### GROUT:

TG: 0.0 TYPE: Cem-bentonite LENGTH: 2.8'

SEAL: TBS: 2.6' TYPE: bentonite pellets LENGTH: 0.5'

SAND PACK: TSP: 3.3' TYPE: #3 and #1 LENGTH: 7.2'

### SURFACE COLLAR:

TYPE: Cement RADIUS: 2' 0" THICKNESS CENTER: 1' THICKNESS EDGE: 1'

### CENTRALIZER DEPTHS

DEPTH 1: — DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

### COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

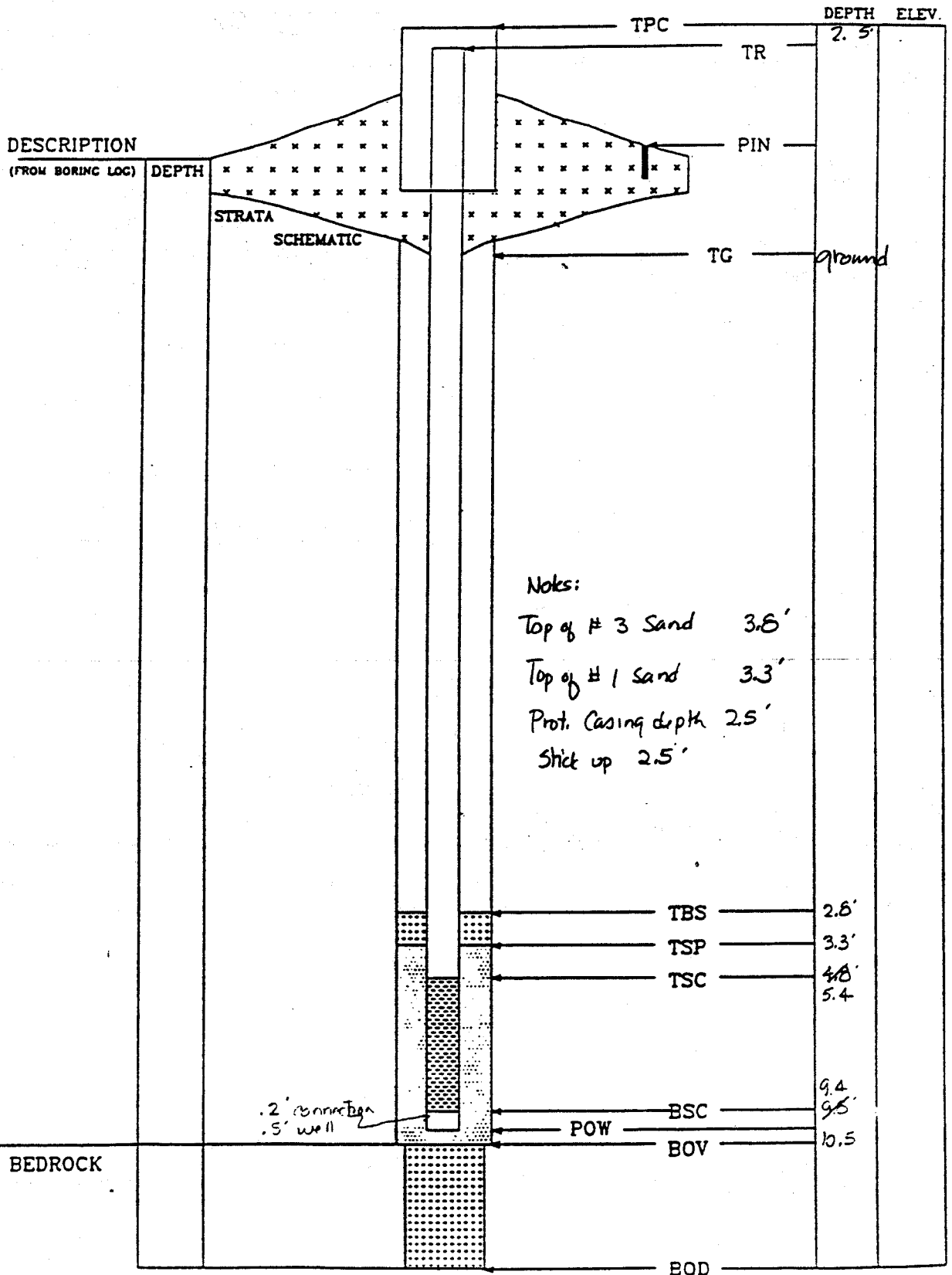
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW11-4*

DATE: \_\_\_\_\_



*Notes:*  
 Top of # 3 Sand 3.6'  
 Top of # 1 Sand 3.3'  
 Prot. casing depth 2.5'  
 Stick up 2.5'

*.2' connection  
.5' well*

BEDROCK

*depths measured from ground surface*

• NOT TO SCALE

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

PARSONS ENGINEERING SCIENCE, INC.		CLIENT:		WELL #: MW11-5	
PROJECT: <u>SEAD-11 ee/ca</u>			PROJECT NO: <u>734543-01001</u>		
LOCATION: <u>Seneca Army Depot</u>			INSPECTOR: <u>KKS</u>		
			CHECKED BY:		
DRILLING CONTRACTOR: <u>Parnet + Wolfe</u>		POW DEPTH: <u>9.5'</u>			
DRILLER: <u>Todd Mench</u>		INSTALLATION STARTED: <u>10/26/00</u>			
DRILLING COMPLETED: <u>10/26/00</u>		INSTALLATION COMPLETED: <u>10/26/00</u>			
BORING DEPTH: <u>11.0'</u>		SURFACE COMPLETION DATE: <u>10/27/00</u>			
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>Parnet + Wolfe</u>			
BORING DIAMETER(S): <u>10.0"</u>		BEDROCK CONFIRMED (Y/N?): <u>Y</u>			
ASSOCIATED SWMU/AOC: <u>SEAD-11</u>		ESTIMATED GROUND ELEVATION:			
PROTECTIVE SURFACE CASING:					
DIAMETER: <u>4.0"</u>		LENGTH: <u>4', 2"</u>		TOR: <u>+2.6</u>	
RISER:					
TOC: <u>+2.5</u>		TYPE: <u>2" Sched. 40</u>		DIAMETER: <u>2"</u> LENGTH: <u>6.74</u>	
SCREEN:					
TSC: <u>-4.24</u>		TYPE: <u>PVC wire wrap</u>		DIAMETER: <u>2"</u> LENGTH: <u>4.58</u> SLOT SIZE: <u>0.010</u>	
POINT OF WELL: (SILT SUMP)					
YPE: <u>Point - PVC</u>		BSC: <u>-8.82</u>		POW: <u>-9.5</u>	
GROUT:					
TG: <u>+0.5'</u>		TYPE: <u>Quickcrete</u>		LENGTH: <u>2.25'</u>	
SEAL: TBS: <u>-1.75</u>		TYPE: <u>Bentonite</u>		LENGTH: <u>2.0'</u>	
SAND PACK: TSP: <u>-3.75</u> <u>-4.25</u>		TYPE: <u>00</u>		LENGTH: <u>0.83'</u> (Above TSC)	
SURFACE COLLAR:					
TYPE: <u>Quickcrete</u>		RADIUS: <u>2.0'</u>		THICKNESS CENTER: <u>1.35</u> THICKNESS EDGE: <u>+0.25</u>	
CENTRALIZER DEPTHS					
DEPTH 1: <u>N/A</u>		DEPTH 2: <u>N/A</u>		DEPTH 3: <u>N/A</u> DEPTH 4: <u>N/A</u>	
COMMENTS:					

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

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

PARSONS ENGINEERING SCIENCE, INC.		CLIENT:	WELL #: MW11-6
PROJECT: SEAD-11 ee/ca	PROJECT NO: 734543-01001		INSPECTOR: KRS
LOCATION: Seneca Army Depot	CHECKED BY:		
DRILLING CONTRACTOR: Parret Wolfe	POW DEPTH: 8.08'	DRILLER: Todd Mench	INSTALLATION STARTED: 10/26/00
DRILLING COMPLETED: 10/26/00	INSTALLATION COMPLETED: 10/26/00	BORING DEPTH: 8.5'	SURFACE COMPLETION DATE: 10/27/00
DRILLING METHOD(S): HSA	COMPLETION CONTRACTOR/CREW: P+W - Todd Mench	BORING DIAMETER(S): 10"	BEDROCK CONFIRMED (Y/N?): Y
ASSOCIATED SWMU/AOC: SEAD-11	ESTIMATED GROUND ELEVATION:		

PROTECTIVE SURFACE CASING:

DIAMETER: 4" ID      LENGTH: 4' 2"      TOR: +2.52

RISER:

TOC: +2.42'      TYPE: PVC      DIAMETER: 2"      LENGTH: 5.25 (TOC)

SCREEN:

TSC: -2.82'      TYPE: PVC wire wrap      DIAMETER: 2"      LENGTH: 4.58'      SLOT SIZE: 0.010

POINT OF WELL: (SILT SUMP)

YPE: PVC Point      BSC: -7.40'      POW: 8.08'

GROUT:

TG: +0.25'      TYPE: Quikcrete      LENGTH: 1.5'

SEAL: <sup>Envelope chips</sup> TBS: -1.32'      TYPE: Bentonite      LENGTH: 1.0'

SAND PACK:

TSP: <sup>-2.60</sup> -2.32'      TYPE: 0/00      LENGTH: <sup>Above TSC</sup> 0.5'

SURFACE COLLAR:

TYPE: Quikcrete      RADIUS: 2.0'      THICKNESS CENTER: 1.5'      THICKNESS EDGE: 0.5'

CENTRALIZER DEPTHS

DEPTH 1: N/A      DEPTH 2: N/A      DEPTH 3: N/A      DEPTH 4: N/A

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

8.08  
- 2.42  
-----  
10.50

10.4

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

PARSONS ENGINEERING SCIENCE, INC.		CLIENT:		WELL #: MW 11-7	
PROJECT: <u>SEAD-11 00/00</u>			PROJECT NO: <u>734543-01001</u>		
LOCATION: <u>Seneca Army Depot</u>			INSPECTOR: <u>KKS</u>		
			CHECKED BY:		
DRILLING CONTRACTOR: <u>Parnet + Wolfe</u>		POW DEPTH: <u>5.25'</u>			
DRILLER: <u>Todd March</u>		INSTALLATION STARTED: <u>10/26/00</u>			
DRILLING COMPLETED: <u>10/26/00</u>		INSTALLATION COMPLETED: <u>10/26/00</u>			
BORING DEPTH: <u>6.0'</u>		SURFACE COMPLETION DATE: <u>10/27/00</u>			
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>P+W Todd</u>			
BORING DIAMETER(S): <u>10"</u>		BEDROCK CONFIRMED (Y/N?): <u>Y</u>			
ASSOCIATED SWMU/AOC: <u>SEAD-11</u>		ESTIMATED GROUND ELEVATION:			
PROTECTIVE SURFACE CASING:					
DIAMETER: <u>4.0" ID</u>		LENGTH: <u>4' 2"</u>		TOR: <u>2.66'</u>	
RISER:					
TOC: <u>+2.55</u>		TYPE: <u>PVC Sched. 40</u>		DIAMETER: <u>2"</u> LENGTH: <u>5.05</u>	
SCREEN:					
TSC: <u>2.5'</u>		TYPE: <u>PVC wire wrap</u>		DIAMETER: <u>2"</u> LENGTH: <u>2.6'</u> SLOT SIZE: <u>0.010</u>	
POINT OF WELL: (SILT SUMP)					
YPE: <u>PVC-Flat Cap</u>		BSC: <u>5.10'</u>		POW: <u>-5.25'</u>	
GROUT:					
TG: <u>+0.25'</u>		TYPE: <u>Quickcrete</u>		LENGTH: <u>1.35'</u>	
SEAL: TBS: <u>-1.1'</u>		TYPE: <u>Bentonite</u>		LENGTH: <u>1.5'</u>	
SAND PACK: TSP: <u>-1.6</u> <u>-1.4</u>		TYPE: <u>00</u>		LENGTH: <u>1.1'</u> ( <u>Above TSC</u> )	
SURFACE COLLAR:					
TYPE: <u>Quickcrete</u>		RADIUS: <u>2.0'</u>		THICKNESS CENTER: <u>1.35</u> THICKNESS EDGE: <u>+0.25'</u>	
CENTRALIZER DEPTHS					
DEPTH 1: <u>N/A</u>		DEPTH 2: <u>N/A</u>		DEPTH 3: <u>N/A</u> DEPTH 4: <u>N/A</u>	
COMMENTS:					

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

# COMPLETION REPORT OF WELL No. MW12A-1

PROJECT:	EIGHT MODERATELY LOW PRIORITY AOCs	WELL LOCATION (N/E):	1015496.7 745165.9
PROJECT LOCATION:	SENECA ARMY DEPOT, ROMULUS NY	REFERENCE COORDINATE SYSTEM:	New York State Plane
DRILLING CONTRACTOR:	EMPIRE SOILS INVESTIGATIONS	GROUND SURFACE ELEVATION (ft):	656.9
DRILLING METHOD:	HOLLOW STEM AUGER	DATUM:	NAD 1983
WELL INSTALLATION STARTED:	06/10/94	GEOLOGIST:	F. O'LOUGHLIN
WELL INSTALLATION COMPLETED:	06/11/94	CHECKED BY:	KK

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																																								
					<p><b>PROTECTIVE COVER</b>                      Diameter: 4                      Type: RISER                      Interval: 3.5</p> <p><b>RISER</b>                      Diameter: 2                      Type: SCH. 40-PVC                      Interval: 5</p> <p><b>SCREEN</b>                      Diameter: 2                      Type: SCH. 40-PVC/0.010                      Interval: 9</p> <p><b>SURFACE SEAL</b>                      Type: CEMENT                      Interval: 1.5</p> <p><b>GROUT</b>                      Type: N/A                      Interval: N/A</p> <p><b>SEAL</b>                      Type: BENTONITE PELLETS                      Interval: 1.4</p> <p><b>SANDPACK</b>                      Type: #1, #3                      Interval: 11.1</p>																																																								
			0.0	656.9																																																									
ML			1.5	655.4																																																									
ML			2.9	654.0																																																									
-			4.0	653.0																																																									
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ML			13.0	644.0																																																									
SM			14.0	642.9																																																									
-			14.0																																																										
					<p><b>WELL DEVELOPMENT DATA</b></p> <p>Date: 6/22/94                      Method: BAIL                      Duration: 170 MIN                      Rate: 1.4 L/MIN</p> <p>Final Measurements:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Temperature (degrees C)</th> <th colspan="2">Conductivity (micromhos/cm)</th> <th colspan="2">Turbidity (NTU)</th> </tr> </thead> <tbody> <tr> <td>6/22</td> <td>6/22</td> <td>7.24</td> <td>9.5</td> <td>1130</td> <td>26.1</td> </tr> <tr> <td>6/22</td> <td>6/22</td> <td></td> <td></td> <td>1525</td> <td>6.42</td> </tr> </tbody> </table> <p><b>WATER LEVELS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>6/22</td> <td>1130</td> <td>6.30</td> </tr> <tr> <td>6/22</td> <td>1525</td> <td>6.42</td> </tr> </tbody> </table>	Temperature (degrees C)		Conductivity (micromhos/cm)		Turbidity (NTU)		6/22	6/22	7.24	9.5	1130	26.1	6/22	6/22			1525	6.42	Date	Time	Depth, TR	6/22	1130	6.30	6/22	1525	6.42																													
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					<p><b>LEGEND</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"></td> <td style="width: 30%;">SURFACE SEAL</td> <td style="width: 30%;"></td> <td>GRAVEL</td> </tr> <tr> <td></td> <td>GROUT</td> <td></td> <td>SAND</td> </tr> <tr> <td></td> <td>SEAL</td> <td></td> <td>SILT</td> </tr> <tr> <td></td> <td>SANDPACK</td> <td></td> <td>CLAY</td> </tr> <tr> <td></td> <td>NO RECOVERY</td> <td></td> <td>TPC TOP OF PROTECTIVE CASING</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TR TOP OF WELL RISER</td> </tr> <tr> <td></td> <td></td> <td></td> <td>GS GROUND SURFACE</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TG TOP OF GROUT</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TBS TOP BENTONITE SEAL</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TSP TOP OF SANDPACK</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TSC TOP OF SCREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td>BSC BOTTOM OF SCREEN</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TD TOTAL DEPTH</td> </tr> <tr> <td></td> <td></td> <td></td> <td>POW POINT OF WELL</td> </tr> </table>		SURFACE SEAL		GRAVEL		GROUT		SAND		SEAL		SILT		SANDPACK		CLAY		NO RECOVERY		TPC TOP OF PROTECTIVE CASING				TR TOP OF WELL RISER				GS GROUND SURFACE				TG TOP OF GROUT				TBS TOP BENTONITE SEAL				TSP TOP OF SANDPACK				TSC TOP OF SCREEN				BSC BOTTOM OF SCREEN				TD TOTAL DEPTH				POW POINT OF WELL
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**ENGINEERING-SCIENCE, INC.**

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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

# COMPLETION REPORT OF WELL No. MW12A-2

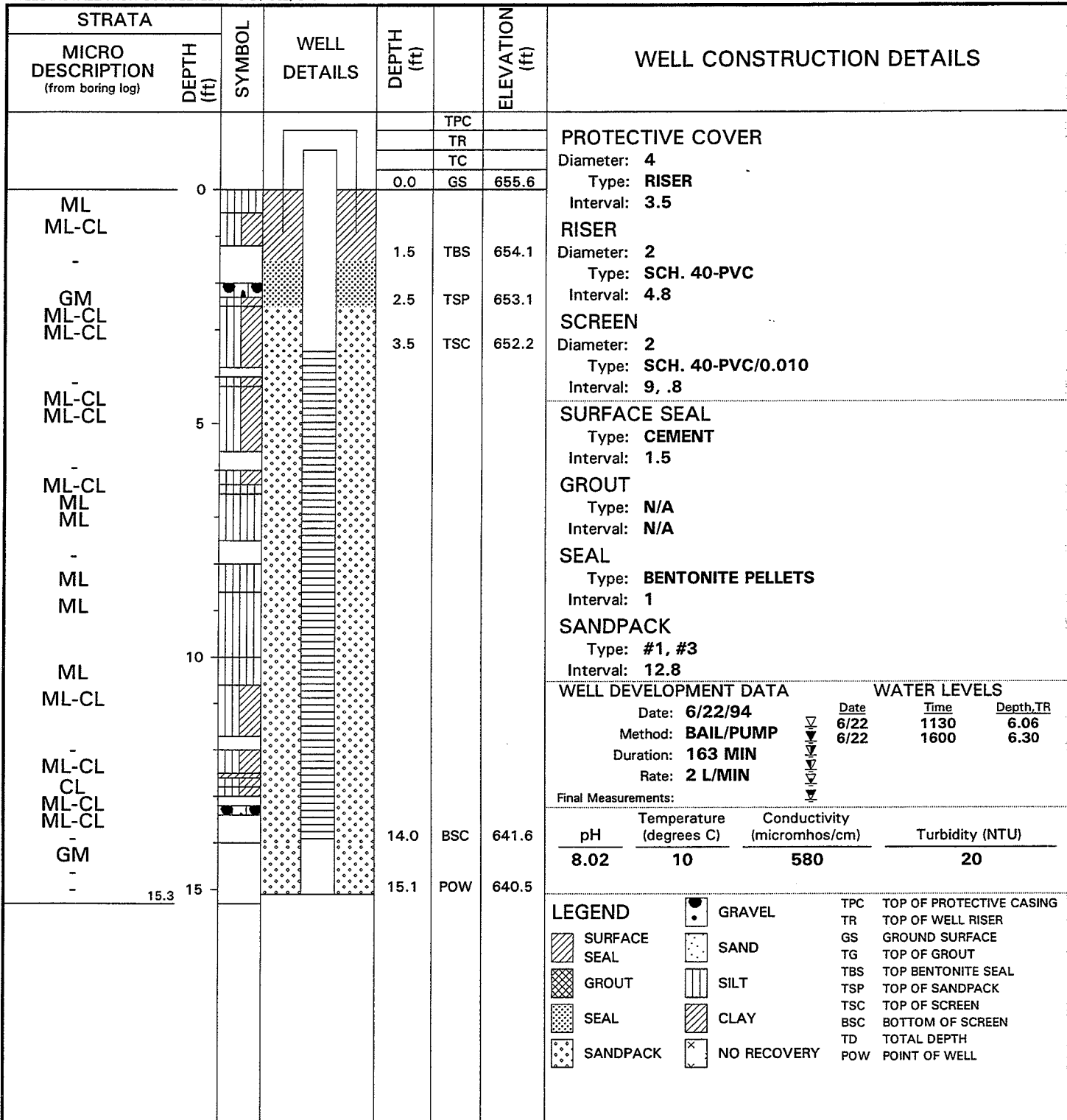
PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b>	WELL LOCATION (N/E): <b>1015117.5 744926.6</b>
PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b>	REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b>
DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b>	GROUND SURFACE ELEVATION (ft): <b>656.3</b>
DRILLING METHOD: <b>HOLLOW STEM AUGER</b>	DATUM: <b>NAD 1983</b>
WELL INSTALLATION STARTED: <b>06/11/94</b>	GEOLOGIST: <b>F. O'LOUGHLIN</b>
WELL INSTALLATION COMPLETED: <b>06/11/94</b>	CHECKED BY: <b>KK</b>

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																									
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 5.35 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 3.95, 1.95																									
				TR																										
				TC																										
			0.0	GS 656.3																										
SM ML			1.5	TBS 654.8	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.5 <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b> <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 1.7 <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 8.8																									
ML-CL ML-CL			3.2	TSP 653.1																										
ML-CL			4.3	TSC 652.0																										
SM ML-CL			5																											
ML-CL CL SM ML-CL			10		<b>WELL DEVELOPMENT DATA</b> <table border="1" style="float: right; margin-top: 10px;"> <thead> <tr> <th colspan="2"></th> <th colspan="3">WATER LEVELS</th> </tr> <tr> <th>Date</th> <th>6/23/94</th> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>Method:</td> <td><b>BAIL</b></td> <td>6/23</td> <td>0930</td> <td>5.30</td> </tr> <tr> <td>Duration:</td> <td><b>130 MIN</b></td> <td>6/23</td> <td>1230</td> <td>5.36</td> </tr> <tr> <td>Rate:</td> <td><b>.1140 L/MIN</b></td> <td>6/23</td> <td>1430</td> <td>5.85</td> </tr> </tbody> </table>			WATER LEVELS			Date	6/23/94	Date	Time	Depth, TR	Method:	<b>BAIL</b>	6/23	0930	5.30	Duration:	<b>130 MIN</b>	6/23	1230	5.36	Rate:	<b>.1140 L/MIN</b>	6/23	1430	5.85
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ML-CL			11.1	BSC 645.3																										
ML			12.0	POW 644.3																										
			12.0		Final Measurements: <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>pH</th> <th>Temperature (degrees C)</th> <th>Conductivity (micromhos/cm)</th> <th>Turbidity (NTU)</th> </tr> </thead> <tbody> <tr> <td>7.11</td> <td>8.5</td> <td>425</td> <td>4.94</td> </tr> </tbody> </table>	pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	7.11	8.5	425	4.94																	
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7.11	8.5	425	4.94																											

SURFACE SEAL	SAND	TPC TOP OF PROTECTIVE CASING
GROUT	SILT	TR TOP OF WELL RISER
SEAL	CLAY	GS GROUND SURFACE
SANDPACK	NO RECOVERY	TG TOP OF GROUT
		TBS TOP BENTONITE SEAL
		TSP TOP OF SANDPACK
		TSC TOP OF SCREEN
		BSC BOTTOM OF SCREEN
		TD TOTAL DEPTH
		POW POINT OF WELL

# COMPLETION REPORT OF WELL No. MW12A-3

PROJECT:	EIGHT MODERATELY LOW PRIORITY AOCs	WELL LOCATION (N/E):	1015521.5 744532.2
PROJECT LOCATION:	SENECA ARMY DEPOT, ROMULUS NY	REFERENCE COORDINATE SYSTEM:	New York State Plane
DRILLING CONTRACTOR:	EMPIRE SOILS INVESTIGATIONS	GROUND SURFACE ELEVATION (ft):	655.6
DRILLING METHOD:	HOLLOW STEM AUGER	DATUM:	NAD 1983
WELL INSTALLATION STARTED:	06/12/94	GEOLOGIST:	F. O'LOUGHLIN
WELL INSTALLATION COMPLETED:	06/12/94	CHECKED BY:	KK





# COMPLETION REPORT OF WELL No. MW12B-1

PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b> PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b> DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b> DRILLING METHOD: <b>HOLLOW STEM AUGER</b> WELL INSTALLATION STARTED: <b>06/13/94</b> WELL INSTALLATION COMPLETED: <b>06/13/94</b>	WELL LOCATION (N/E): <b>1015934.0 743739.7</b> REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b> GROUND SURFACE ELEVATION (ft): <b>652.0</b> DATUM: <b>NAD 1983</b> GEOLOGIST: <b>F. O'LOUGHLIN</b> CHECKED BY: <b>KK</b>
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STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS	
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 6.25 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 8.9, 1.95 <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.5 <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b> <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 2.75 <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 13.55	
			0.0	GS		652.0
ML ML			1.5	TBS		650.5
ML-CL ML -			4.3	TSP		647.8
ML			5.3	TSC	646.8	
ML						
ML						
ML						
ML						
ML						
GP			17.0	BSC	635.1	
GP			17.8	POW	634.2	
-						
-			18.0			

<b>WELL DEVELOPMENT DATA</b> Date: <b>6/25/94</b> Method: <b>BAIL</b> Duration: <b>110 MIN</b> Rate: <b>.1890 L/MIN</b> Final Measurements:	<b>WATER LEVELS</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>6/25</td> <td>0900</td> <td>10.22</td> </tr> <tr> <td>6/25</td> <td>1045</td> <td>10.38</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>pH</th> <th>Temperature (degrees C)</th> <th>Conductivity (micromhos/cm)</th> <th>Turbidity (NTU)</th> </tr> </thead> <tbody> <tr> <td>6.96</td> <td>10</td> <td>1100</td> <td>13.7</td> </tr> </tbody> </table>	Date	Time	Depth, TR	6/25	0900	10.22	6/25	1045	10.38	pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	6.96	10	1100	13.7
Date	Time	Depth, TR																
6/25	0900	10.22																
6/25	1045	10.38																
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)															
6.96	10	1100	13.7															

<b>LEGEND</b> SURFACE SEAL GROUT SEAL SANDPACK	GRAVEL SAND SILT CLAY NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TG TOP OF GROUT TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL
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# COMPLETION REPORT OF WELL No. MW12B-2

<p>PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b>          PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b>          DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b>          DRILLING METHOD: <b>HOLLOW STEM AUGER</b>          WELL INSTALLATION STARTED: <b>06/12/94</b>          WELL INSTALLATION COMPLETED: <b>06/12/94</b></p>	<p>WELL LOCATION (N/E): <b>1015919.8 743522.9</b>          REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b>          GROUND SURFACE ELEVATION (ft): <b>648.1</b>          DATUM: <b>NAD 1983</b>          GEOLOGIST: <b>F. O'LOUGHLIN</b>          CHECKED BY: <b>KK</b></p>
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STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS													
				TPC	<b>PROTECTIVE COVER</b> Diameter: <b>4</b> Type: <b>RISER</b> Interval: <b>3.5</b>													
				TR														
				TC														
			0.0	GS		648.1												
ML			1.5	TBS	646.6	<b>RISER</b> Diameter: <b>2</b> Type: <b>SCH. 40-PVC</b> Interval: <b>5</b>												
-			3.0	TSP	645.1													
ML			3.9	TSC	644.2	<b>SCREEN</b> Diameter: <b>2</b> Type: <b>SCH. 40-PVC/0.010</b> Interval: <b>9</b>												
-			5															
ML			10			<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>1.5</b>												
-																		
ML						<b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>												
-																		
ML						<b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: <b>1.55</b>												
-																		
ML						<b>SANDPACK</b> Type: <b>#1, #3</b> Interval: <b>11</b>												
ML																		
ML						<b>WELL DEVELOPMENT DATA</b>												
ML																		
SP						<b>WATER LEVELS</b> <table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>6/23</td> <td>1545</td> <td>7.15</td> </tr> <tr> <td>6/24</td> <td>1030</td> <td>7.36</td> </tr> <tr> <td>6/24</td> <td>1235</td> <td>7.20</td> </tr> </tbody> </table>	Date	Time	Depth, TR	6/23	1545	7.15	6/24	1030	7.36	6/24	1235	7.20
Date	Time	Depth, TR																
6/23	1545	7.15																
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SP																		
GP			12.9	BSC	635.2	Final Measurements: <table border="1" style="width: 100%; font-size: small;"> <thead> <tr> <th>pH</th> <th>Temperature (degrees C)</th> <th>Conductivity (micromhos/cm)</th> <th>Turbidity (NTU)</th> </tr> </thead> <tbody> <tr> <td>7.15</td> <td>9.5</td> <td>800</td> <td>43.3</td> </tr> </tbody> </table>	pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	7.15	9.5	800	43.3				
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)															
7.15	9.5	800	43.3															
-			14.0	POW	634.1													

<b>LEGEND</b>	GRAVEL	TPC	TOP OF PROTECTIVE CASING
SURFACE SEAL	SAND	TR	TOP OF WELL RISER
GROUT	SILT	GS	GROUND SURFACE
SEAL	CLAY	TG	TOP OF GROUT
SANDPACK	NO RECOVERY	TBS	TOP BENTONITE SEAL
		TSP	TOP OF SANDPACK
		TSC	TOP OF SCREEN
		BSC	BOTTOM OF SCREEN
		TD	TOTAL DEPTH
		POW	POINT OF WELL

# 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 INSTALLATION COMPLETED: 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  
 CHECKED BY: KK

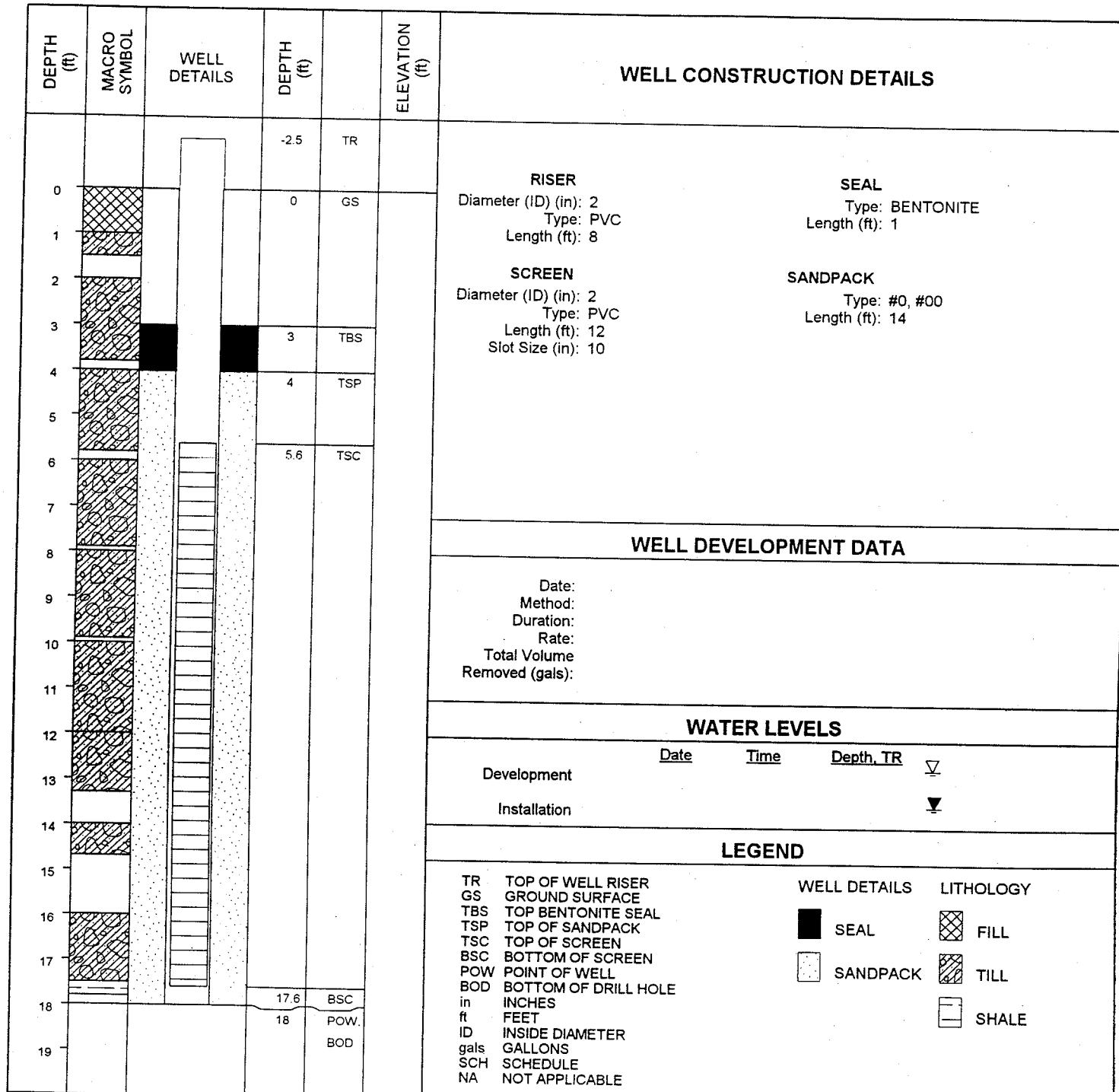
STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAILS													
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																			
					TPC		<b>PROTECTIVE COVER</b> Diameter: 4 Type: RISER Interval: 3.5 <b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 5.55 <b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 8.9													
	0				TR															
					TC															
				0.0	GS	655.6														
ML ML ML ML-CL				1.5	TBS	654.1	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1.5 <b>GROUT</b> Type: N/A Interval: N/A <b>SEAL</b> Type: BENTONITE PELLETS Interval: 2 <b>SANDPACK</b> Type: #1, #3 Interval: 11.1													
ML-CL				3.5	TSP	652.1														
ML-CL ML-CL				4.6	TSC	651.1														
ML-CL	5																			
ML ML ML							<b>WELL DEVELOPMENT DATA</b> Date: 6/26/94 Method: BAIL Duration: 235 MIN Rate: .1030 L/MIN Final Measurements: pH: 7.19 Temperature (degrees C): 12 Conductivity (micromhos/cm): 850 Turbidity (NTU): 15.8													
ML				13.5	BSC	642.2														
ML ML SP ML ML	10																			
ML ML ML				14.6	POW	641.0														
	14.8						<b>WATER LEVELS</b> <table border="1"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>6/26</td> <td>1010</td> <td>7.34</td> </tr> <tr> <td>6/26</td> <td>1310</td> <td>7.66</td> </tr> <tr> <td>6/26</td> <td>1445</td> <td>7.46</td> </tr> </tbody> </table>		Date	Time	Depth, TR	6/26	1010	7.34	6/26	1310	7.66	6/26	1445	7.46
Date	Time	Depth, TR																		
6/26	1010	7.34																		
6/26	1310	7.66																		
6/26	1445	7.46																		

	SURFACE SEAL		GRAVEL	TPC	TOP OF PROTECTIVE CASING
	GROUT		SAND	TR	TOP OF WELL RISER
	SEAL		SILT	GS	GROUND SURFACE
	SANDPACK		CLAY	TG	TOP OF GROUT
			NO RECOVERY	TBS	TOP OF BENTONITE SEAL
				TSP	TOP OF SANDPACK
				TSC	TOP OF SCREEN
				BSC	BOTTOM OF SCREEN
				TD	TOTAL DEPTH
				POW	POINT OF WELL

# 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:**



NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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

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

<b>1</b>	Parsons ES Inc.	CLIENT: <u>Seneca Army Depot</u>	WELL #: <u>mw12-4</u>
PROJECT:	<u>Sead-12 RI/FS</u>	PROJECT NO:	<u>730047-01001</u>
LOCATION:	<u>Background, North end</u>	INSPECTOR:	<u>EAF</u>
		CHECKED BY:	_____

DRILLING CONTRACTOR:	<u>Maxim Tech</u>	POW DEPTH:	<u>12.4 (BGS)</u>
DRILLER:	<u>John Warner</u>	INSTALLATION STARTED:	<u>11/5/97</u>
DRILLING COMPLETED:	<u>11/4/97</u>	INSTALLATION COMPLETED:	<u>11/5/97</u>
BORING DEPTH:	<u>12.4 (BGS)</u>	SURFACE COMPLETION DATE:	<u>11/7/99</u>
DRILLING METHOD(S):	<u>4Y4 HSA</u>	COMPLETION CONTRACTOR/CREW:	<u>Maxim Tech</u>
BORING DIAMETER(S):	<u>8"</u>	BEDROCK CONFIRMED (Y/N?):	<u>Y</u>
ASSOCIATED SWMU/AOC:	<u>Sead-12</u>	ESTIMATED GROUND ELEVATION:	_____

PROTECTIVE SURFACE CASING:

DIAMETER: 4"      LENGTH: 5'

RISER:

TR: -2.5      TYPE: Sch 40 pu      DIAMETER: 2"      LENGTH: 4.8' <sup>1626</sup> 7.27

SCREEN:

TSC: 4.77      TYPE: Sch 40 PVC      DIAMETER: 2"      LENGTH: 7.21'      SLOT SIZE: 0.010"

POINT OF WELL: (SILT SUMP)

TYPE: Sump      BSC: 11.98      POW: 12.2

GROUT:

None      TG: \_\_\_\_\_      TYPE: \_\_\_\_\_      LENGTH: \_\_\_\_\_

SEAL:

TBS: 2.4'      TYPE: Bentonite chip      LENGTH: 1'

SAND PACK:

TSP: 3.4' / 3.9'      TYPE: none # 20 / none # 0      LENGTH: 0.5' / 8.3'

SURFACE COLLAR:

TYPE: Concrete      RADIUS: 2'      THICKNESS CENTER: 1'      THICKNESS EDGE: 4"

CENTRALIZER DEPTHS

None

DEPTH 1: \_\_\_\_\_      DEPTH 2: \_\_\_\_\_      DEPTH 3: \_\_\_\_\_      DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

# TEMPORARY WELL COMPLETION REPORT: MW12-7

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																													
0			-2.55	TR	<p><b>RISER</b>                      Diameter (ID) (in): 2                      Type: PVC                      Length (ft): 8.55</p> <p><b>SEAL</b>                      Type: BENTONITE                      Length (ft): 2</p> <p><b>SCREEN</b>                      Diameter (ID) (in): 2                      Type: PVC                      Length (ft): 6                      Slot Size (in): 10</p> <p><b>SANDPACK</b>                      Type: #0, #00                      Length (ft): 9.8</p>																																													
0			0	GS																																														
2			2	TBS																																														
4			4	TSP																																														
6			6	TSC																																														
12			12	BSC																																														
13.6			13.6	POW	<p style="text-align: center;"><b>WELL DEVELOPMENT DATA</b></p> <p>Date: Method: Duration: Rate: Total Volume Removed (gals):</p> <p style="text-align: center;"><b>WATER LEVELS</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;"><u>Date</u></th> <th style="width: 15%;"><u>Time</u></th> <th style="width: 15%;"><u>Depth, TR</u></th> <th style="width: 25%;"></th> </tr> </thead> <tbody> <tr> <td>Development</td> <td></td> <td></td> <td></td> <td style="text-align: center;">▽</td> </tr> <tr> <td>Installation</td> <td></td> <td></td> <td></td> <td style="text-align: center;">▽</td> </tr> </tbody> </table> <p style="text-align: center;"><b>LEGEND</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">WELL DETAILS</th> <th style="width: 50%;">LITHOLOGY</th> </tr> </thead> <tbody> <tr> <td>TR TOP OF WELL RISER</td> <td>█ SEAL</td> </tr> <tr> <td>GS GROUND SURFACE</td> <td>▨ FILL</td> </tr> <tr> <td>TBS TOP BENTONITE SEAL</td> <td>▨ TILL</td> </tr> <tr> <td>TSP TOP OF SANDPACK</td> <td>▨ SHALE</td> </tr> <tr> <td>TSC TOP OF SCREEN</td> <td></td> </tr> <tr> <td>BSC BOTTOM OF SCREEN</td> <td></td> </tr> <tr> <td>POW POINT OF WELL</td> <td></td> </tr> <tr> <td>BOD BOTTOM OF DRILL HOLE</td> <td></td> </tr> <tr> <td>in INCHES</td> <td></td> </tr> <tr> <td>ft FEET</td> <td></td> </tr> <tr> <td>ID INSIDE DIAMETER</td> <td></td> </tr> <tr> <td>gals GALLONS</td> <td></td> </tr> <tr> <td>SCH SCHEDULE</td> <td></td> </tr> <tr> <td>NA NOT APPLICABLE</td> <td></td> </tr> </tbody> </table>		<u>Date</u>	<u>Time</u>	<u>Depth, TR</u>		Development				▽	Installation				▽	WELL DETAILS	LITHOLOGY	TR TOP OF WELL RISER	█ SEAL	GS GROUND SURFACE	▨ FILL	TBS TOP BENTONITE SEAL	▨ TILL	TSP TOP OF SANDPACK	▨ SHALE	TSC TOP OF SCREEN		BSC BOTTOM OF SCREEN		POW POINT OF WELL		BOD BOTTOM OF DRILL HOLE		in INCHES		ft FEET		ID INSIDE DIAMETER		gals GALLONS		SCH SCHEDULE		NA NOT APPLICABLE	
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NOTES:

**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
**Seneca Army Depot**  
**Romulus, New York**

**TEMPORARY WELL**  
**COMPLETION REPORT: MW12-7**

# TEMPORARY WELL COMPLETION REPORT: MW12-8

**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"  
**SAMPLING METHOD:** Split Spoon

**TOTAL DEPTH:** 12  
**DEPTH TO WATER:**  
**BORING LOCATION:**  
**COORDINATE SYSTEM:** NAD83  
**GROUND SURFACE ELEVATION:**  
**ELEVATION DATUM:** NAVD1927  
**INSPECTOR:** TGH  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-2.6	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.6</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.5</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 6.85 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 9</p>															
0			0	GS																
1																				
2			2	TBS																
3																				
3.5			3.5	TSP																
4.6			4.6	TSC																
5																				
6																				
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<b>WELL DEVELOPMENT DATA</b>																				
Date: Method: Duration: Rate: Total Volume Removed (gals):																				
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-8**

# TEMPORARY WELL COMPLETION REPORT: MW12-9

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.5	TR																
0	[Cross-hatch]		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.3															
1	[Cross-hatch]				<b>SEAL</b> Type: BENTONITE Length (ft): 2															
2	[Diagonal lines]		2.2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.1 Slot Size (in): 10															
3	[Diagonal lines]				<b>SANDPACK</b> Type: #0, #00 Length (ft): 9.9															
4	[Diagonal lines]		4.2	TSP																
5	[Diagonal lines]																			
6	[Diagonal lines]		6.2	TSC																
7	[Diagonal lines]																			
8	[Diagonal lines]																			
9	[Diagonal lines]																			
10	[Diagonal lines]																			
11	[Diagonal lines]																			
12	[Diagonal lines]																			
13	[Diagonal lines]		13.3	BSC																
14	[Diagonal lines]		14.1	POW, BOD																
15																				
16																				
17																				
18																				
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Date: Method: Duration: Rate: Total Volume Removed (gals):																				
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Development			▽																	
Installation			▼																	
<b>LEGEND</b>																				
TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE		<b>WELL DETAILS</b> [Solid black] SEAL [Dotted] SANDPACK		<b>LITHOLOGY</b> [Cross-hatch] FILL [Diagonal lines] TILL [Horizontal lines] SHALE																

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-9**



# TEMPORARY WELL COMPLETION REPORT: MW12-10

**PROJECT:** 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"  
**SAMPLING METHOD:** Split Spoon

**TOTAL DEPTH:** 17.1  
**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 (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-2.5	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 9</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 10 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 12.5</p>															
0			0	GS																
2.5			2.5	TBS																
4.5			4.5	TSP																
6.5			6.5	TSC																
16.5			16.5	BSC																
17			17	POW, BOD																
18																				
19																				
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-10**

# TEMPORARY WELL COMPLETION REPORT: MW12-11

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			-2.5	TR	
0			0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.9
1					<b>SEAL</b> Type: BENTONITE Length (ft): 2
2					<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 5.5 Slot Size (in): 10
3					<b>SANDPACK</b> Type: #0, #00 Length (ft): 7
4			3.6	TBS	
5					
6			5.6	TSP	
7					
8			7.6	TSC	
9					
10					
11					
12					
13			13.1	BSC, POW, BOD	
14					
15					
16					
17					
18					
19					

### WELL DEVELOPMENT DATA

Date:  
 Method:  
 Duration:  
 Rate:  
 Total Volume  
 Removed (gals):

### WATER LEVELS

	Date	Time	Depth, TR	
Development				▽
Installation				▼

### LEGEND

TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	<b>WELL DETAILS</b> ■ SEAL □ SANDPACK	<b>LITHOLOGY</b> ▨ FILL ▩ TILL □ SHALE
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-11**

# TEMPORARY WELL COMPLETION REPORT: MW12-12

**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  
**INSPECTOR:** ITR  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
0			-2.5	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft):</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 8.5</p>
0			0	GS	
1					
2			2.5	TBS	
3					
4			4.5	TSP	
5			5.5	TSC	
6					
7					
8					
9					
10					
11					
12					
12.5			12.5	BSC	
13			13	POW, BOD	
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:	Method:	Duration:	Rate:
Total Volume Removed (gals):			

WATER LEVELS			
	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u> ▽
Development			▽
Installation			▽

LEGEND		
TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	<b>WELL DETAILS</b> SEAL SANDPACK	<b>LITHOLOGY</b> FILL TILL SHALE

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-12**

# TEMPORARY WELL COMPLETION REPORT: MW12-13

**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:** 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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-2.8	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 10.3</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.5 Slot Size (in): 10</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 9</p>															
0			0	GS																
2			2	TBS																
4			4	TSP																
5.5			5.5	TSC																
<b>WELL DEVELOPMENT DATA</b>																				
Date: Method: Duration: Rate: Total Volume Removed (gals):																				
<b>WATER LEVELS</b>																				
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Installation				▼																
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WELL DETAILS	LITHOLOGY																			
■ SEAL	▨ FILL																			
□ SANDPACK	▩ TILL																			
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-13**

# TEMPORARY WELL COMPLETION REPORT: MW12-14

**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"  
**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.5	TR																
0	[Cross-hatch]		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.6															
1	[Cross-hatch]				<b>SEAL</b> Type: BENTONITE Length (ft): 2.1															
2	[Cross-hatch]		2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 6.8 Slot Size (in): 10															
3	[Cross-hatch]				<b>SANDPACK</b> Type: #0, #00 Length (ft): 9.9															
4	[Diagonal lines]		4.1	TSP																
5	[Diagonal lines]																			
6	[Diagonal lines]		6.1	TSC																
7	[Diagonal lines]																			
8	[Diagonal lines]																			
9	[Diagonal lines]																			
10	[Diagonal lines]																			
11	[Diagonal lines]																			
12	[Diagonal lines]																			
13	[Diagonal lines]		12.9	BSC																
14	[Diagonal lines]		14	POW, BOD																
15	[Diagonal lines]																			
16	[Diagonal lines]																			
17	[Diagonal lines]																			
18	[Diagonal lines]																			
19	[Diagonal lines]																			
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<b>LEGEND</b>																				
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-14**

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

<b>1</b>	Parsons ES Inc.	CLIENT: <u>Seneca Army Depot</u>	WELL #: <u>MW12-15</u>
PROJECT:	<u>Seneca Sead-12 RI/FS</u>	PROJECT NO:	<u>730047-01001</u>
LOCATION:	<u>North of disposal pit X<sup>100</sup>C</u>	INSPECTOR:	<u>DRG/ITR</u>
		CHECKED BY:	<u>DRG</u>

DRILLING CONTRACTOR: <u>Maxim Tech.</u> DRILLER: <u>Rodney Bush</u> DRILLING COMPLETED: <u>10/1/98</u> BORING DEPTH: <u>13.1 (BGS)</u> DRILLING METHOD(S): <u>4 1/4 HSA</u> BORING DIAMETER(S): <u>8"</u> ASSOCIATED SWMU/AOC: <u>SEAD-12</u>	POW DEPTH: <u>13.1</u> INSTALLATION STARTED: <u>10/1/98</u> INSTALLATION COMPLETED: <u>10/1/98</u> SURFACE COMPLETION DATE: <u>10/5/98</u> COMPLETION CONTRACTOR/CREW: <u>Maxim</u> BEDROCK CONFIRMED (Y/N?): <u>Y</u> ESTIMATED GROUND ELEVATION: _____
---	--

PROTECTIVE SURFACE CASING:

DIAMETER: 8"      LENGTH: 5'

RISER:

TR: 2.6'      TYPE: PVC sub 40      DIAMETER: 2"      LENGTH: 10'

SCREEN:

TSC: 5.4 (BGS)      TYPE: Sub 40 PVC      DIAMETER: 2"      LENGTH: 7.2'      SLOT SIZE: 0.010"

POINT OF WELL: (SILT SUMP)

TYPE: Sump      BSC: 12.6 (BGS)      POW: 13.1 (BGS)

GROUT:

None      TG: 1.9' (BGS) DRG      TYPE: Bentonite clay DRG      LENGTH: 3.9' DRG

SEAL:

TBS: 1.9 BGS      TYPE: Bentonite clay      LENGTH: 2'

SAND PACK:

TSP: 3.9' CRS      TYPE: marie sand      LENGTH: 0.5'

SURFACE COLLAR:

TYPE: concrete/Bentonite      RADIUS: 2'      THICKNESS CENTER: 1'      THICKNESS EDGE: 4"

CENTRALIZER DEPTHS      None

DEPTH 1: \_\_\_\_\_      DEPTH 2: \_\_\_\_\_      DEPTH 3: \_\_\_\_\_      DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

# 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:**  
**BORING LOCATION:**  
**COORDINATE SYSTEM:** NAD83  
**GROUND SURFACE ELEVATION:**  
**ELEVATION DATUM:** NAVD1927  
**INSPECTOR:** ITR  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																																						
0			-2.45	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.85</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 9.8</p>																																																						
0			0	GS																																																							
1																																																											
2			2.4	TBS																																																							
3																																																											
4			4.4	TSP																																																							
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**NOTES:**

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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

# TEMPORARY WELL COMPLETION REPORT: MW12-17

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
0			-2.9	TR	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.3</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 12.2 Slot Size (in): 10</p> </div> <div style="width: 45%;"> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.8</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 14.6</p> </div> </div>
1			0	GS	
2			2	TBS	
3			3.8	TSP	
4			5.4	TSC	
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18			17.6	BSC	
19			18.4	POW, BOD	

### WELL DEVELOPMENT DATA

Date:  
 Method:  
 Duration:  
 Rate:  
 Total Volume  
 Removed (gals):

### WATER LEVELS

	Date	Time	Depth, TR	
Development				▽
Installation				▼

### LEGEND

<p>           TR TOP OF WELL RISER            GS GROUND SURFACE            TBS TOP BENTONITE SEAL            TSP TOP OF SANDPACK            TSC TOP OF SCREEN            BSC BOTTOM OF SCREEN            POW POINT OF WELL            BOD BOTTOM OF DRILL HOLE            in INCHES            ft FEET            ID INSIDE DIAMETER            gals GALLONS            SCH SCHEDULE            NA NOT APPLICABLE         </p>	<p> <b>WELL DETAILS</b>    <b>LITHOLOGY</b> </p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><span style="display: inline-block; width: 15px; height: 15px; background-color: black; margin-right: 5px;"></span> SEAL</p> <p><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; margin-right: 5px;"></span> SANDPACK</p> </div> <div style="width: 45%;"> <p><span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed black; margin-right: 5px;"></span> FILL</p> <p><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></span> TILL</p> <p><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></span> SHALE</p> </div> </div>
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**NOTES:**

**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
 Seneca Army Depot  
 Romulus, New York

**TEMPORARY WELL**  
**COMPLETION REPORT: MW12-17**



# TEMPORARY WELL COMPLETION REPORT: MW12-18

**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 SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.5	TR																
0			0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.5															
1	X				<b>SEAL</b> Type: BENTONITE Length (ft): 2															
2	X				<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.3 Slot Size (in): 10															
3	X		2.5	TBS	<b>SANDPACK</b> Type: #0, #00 Length (ft): 10															
4	X																			
5	X		4.5	TSP																
6	X		6	TSC																
7	X																			
8	X																			
9	X																			
10	X																			
11	X																			
12	X																			
13	X																			
14	X		13.3	BSC																
15			14.5	POW, BOD																
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19																				
<b>WELL DEVELOPMENT DATA</b>																				
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<b>WATER LEVELS</b>																				
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Development				▽																
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<b>LEGEND</b>																				
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**NOTES:**

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-18**

# TEMPORARY WELL COMPLETION REPORT: MW12-19

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
0			-2.7	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.8 Slot Size (in): 10</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 7</p>
0			0	GS	
1					
2			2	TBS	
3					
4			4	TSP	
5					
6			5.5	TSC	
7					
8					
9					
10			10.3	BSC	
11			11	POW, BOD	
12					
13					
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:			
Method:			
Duration:			
Rate:			
Total Volume Removed (gals):			

WATER LEVELS			
Development	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u> ▽
Installation			▾

LEGEND			
TR	TOP OF WELL RISER	WELL DETAILS	LITHOLOGY
GS	GROUND SURFACE	█	▣
TBS	TOP BENTONITE SEAL	█	▣
TSP	TOP OF SANDPACK	▣	▣
TSC	TOP OF SCREEN	▣	▣
BSC	BOTTOM OF SCREEN	▣	▣
POW	POINT OF WELL	▣	▣
BOD	BOTTOM OF DRILL HOLE	▣	▣
in	INCHES		
ft	FEET		
ID	INSIDE DIAMETER		
gals	GALLONS		
SCH	SCHEDULE		
NA	NOT APPLICABLE		

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-19**

# TEMPORARY WELL COMPLETION REPORT: MW12-20

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			-2.7	TR	
0	GS		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.5
1	FILL				<b>SEAL</b> Type: BENTONITE Length (ft): 2
2	TBS		2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7 Slot Size (in): 10
3	TSP		4	TSP	<b>SANDPACK</b> Type: #0, #00 Length (ft): 10.4
4	TSC		5.8	TSC	
5	TSP				
6	TSC				
7	TSP				
8	TSC				
9	TSP				
10	TSC				
11	TSP				
12	TSC				
13	TSP				
14	TSC		13.8	BSC	
15	POW, BOD		14.4	POW, BOD	
16					
17					
18					
19					

### WELL DEVELOPMENT DATA

Date:  
 Method:  
 Duration:  
 Rate:  
 Total Volume Removed (gals):

### WATER LEVELS

	Date	Time	Depth, TR	
Development				▽
Installation				▽

### LEGEND

TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	<b>WELL DETAILS</b> ■ SEAL ▨ SANDPACK	<b>LITHOLOGY</b> ▩ FILL ▨ TILL □ SHALE
---	---	---

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-20**

# TEMPORARY WELL COMPLETION REPORT: MW12-21

**PROJECT:** SEDA  
**PROJECT LOCATION:** Seneca Army Depot, Romulus, New York  
**ASSOCIATED AREA/UNIT:** SEAD 12  
**PROJECT NO.:** 730047  
**WELL INSTALLATION STARTED:** 10/3/98  
**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 SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.9	TR																
0	[Cross-hatch]		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.3															
1	[Cross-hatch]				<b>SEAL</b> Type: BENTONITE Length (ft): 2															
2	[Cross-hatch]		2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.75 Slot Size (in): 10															
3	[Cross-hatch]				<b>SANDPACK</b> Type: #0, #00 Length (ft): 7															
4	[Diagonal lines]		4	TSP																
5	[Diagonal lines]																			
6	[Diagonal lines]		5.6	TSC																
7	[Diagonal lines]																			
8	[Diagonal lines]																			
9	[Diagonal lines]																			
10	[Diagonal lines]																			
11	[Diagonal lines]		10.35	BSC																
12	[Diagonal lines]		11.2	POW, BOD																
13	[Diagonal lines]																			
14	[Diagonal lines]																			
15	[Diagonal lines]																			
16	[Diagonal lines]																			
17	[Diagonal lines]																			
18	[Diagonal lines]																			
19	[Diagonal lines]																			
<b>WELL DEVELOPMENT DATA</b>																				
Date: Method: Duration: Rate: Total Volume Removed (gals):																				
<b>WATER LEVELS</b>																				
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Development				▽																
Installation				▼																
<b>LEGEND</b>																				
TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE		<b>WELL DETAILS</b> [Solid black] SEAL [Dotted] SANDPACK		<b>LITHOLOGY</b> [Cross-hatch] FILL [Diagonal lines] TILL [Horizontal lines] SHALE																

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-21**

# 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:** 10/4/98  
**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 (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																																						
0			-2.9	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.3</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.5</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 6.7 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 9.4</p>																																																						
0			0	GS																																																							
1																																																											
2			1.7	TBS																																																							
3			3.2	TSP																																																							
4			4.4	TSC																																																							
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**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-22**

# TEMPORARY WELL COMPLETION REPORT: MW12-23

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																													
0			-2.4	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.1</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.5</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.2 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 8.6</p>																																													
1			0	GS																																														
2			2	TBS																																														
3			3.5	TSP																																														
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-23**

# TEMPORARY WELL COMPLETION REPORT: MW12-24

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			-2.5	TR	
0	GS		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.2
1	TBS		1.5	TBS	<b>SEAL</b> Type: BENTONITE Length (ft): 1.5
2	TSP		3.1	TSP	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.9 Slot Size (in): 10
3	TSC		4.7	TSC	<b>SANDPACK</b> Type: #0, #00 Length (ft): 6.9
4					
5					
6					
7					
8					
9					
9.6	BSC		10	POW, BOD	
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:	Method:	Duration:	Rate:
Total Volume Removed (gals):			

WATER LEVELS			
Development	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u> ▽
Installation			▾

LEGEND			
TR	TOP OF WELL RISER	WELL DETAILS	LITHOLOGY
GS	GROUND SURFACE	SEAL	FILL
TBS	TOP BENTONITE SEAL	SANDPACK	TILL
TSP	TOP OF SANDPACK		SHALE
TSC	TOP OF SCREEN		
BSC	BOTTOM OF SCREEN		
POW	POINT OF WELL		
BOD	BOTTOM OF DRILL HOLE		
in	INCHES		
ft	FEET		
ID	INSIDE DIAMETER		
gals	GALLONS		
SCH	SCHEDULE		
NA	NOT APPLICABLE		

NOTES:

**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
**Seneca Army Depot**  
**Romulus, New York**

**TEMPORARY WELL**  
**COMPLETION REPORT: MW12-24**

# 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  
**INSPECTOR:** ITR  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-2.9	TR	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.85</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.9 Slot Size (in): 10</p> </div> <div style="width: 45%;"> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.95</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 7.4</p> </div> </div>															
0			0	GS																
2			2	TBS																
3.95			3.95	TSP																
4.95			4.95	TSC																
9.85			9.85	BSC																
10.3			10.3	POW, BOD																
<b>WELL DEVELOPMENT DATA</b>																				
Date: Method: Duration: Rate: Total Volume Removed (gals):																				
<b>WATER LEVELS</b>																				
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<b>LEGEND</b>																				
TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE		<b>WELL DETAILS</b> ■ SEAL □ SANDPACK		<b>LITHOLOGY</b> ▨ FILL ▩ TILL □ SHALE																

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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



# TEMPORARY WELL COMPLETION REPORT: MW12-26

**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:** 10.1  
**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 (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
0			-2.6	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.35</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.5</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.85 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 6.4</p>
1			0	GS	
2			2.25	TBS	
3			3.75	TSP	
4			4.75	TSC	
5					
6					
7					
8					
9					
10			9.6	BSC	
11			10.1	POW, BOD	
12					
13					
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:	Method:	Duration:	Rate:
Total Volume Removed (gals):			

WATER LEVELS			
	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u>
Development			▽
Installation			▼

LEGEND			
TR	TOP OF WELL RISER	WELL DETAILS	LITHOLOGY
GS	GROUND SURFACE	█	▣
TBS	TOP BENTONITE SEAL	▣	▣
TSP	TOP OF SANDPACK	▣	▣
TSC	TOP OF SCREEN	▣	▣
BSC	BOTTOM OF SCREEN	▣	▣
POW	POINT OF WELL	▣	▣
BOD	BOTTOM OF DRILL HOLE	▣	▣
in	INCHES	▣	▣
ft	FEET	▣	▣
ID	INSIDE DIAMETER	▣	▣
gals	GALLONS	▣	▣
SCH	SCHEDULE	▣	▣
NA	NOT APPLICABLE	▣	▣

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-26**

# 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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-3	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.5</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.75 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 6.5</p>															
0			0	GS																
1																				
2			2	TBS																
3																				
3.5			3.5	TSP																
4																				
4.5			4.5	TSC																
5																				
9.25			9.25	BSC																
10			10	POW, BOD																
<b>WELL DEVELOPMENT DATA</b>																				
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NOTES:

# TEMPORARY WELL COMPLETION REPORT: MW12-29

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
0			-2.8	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.9</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 1.9</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.1 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 10.1</p>															
0			0	GS																
1			2.1	TBS																
2			4.1	TSP																
3			6.1	TSC																
4			13.2	BSC	<p style="text-align: center;"><b>WELL DEVELOPMENT DATA</b></p> <p>Date: Method: Duration: Rate: Total Volume Removed (gals):</p>															
5			14	POW																
6			14.2	BOD	<p style="text-align: center;"><b>WATER LEVELS</b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 15%;">Date</th> <th style="width: 15%;">Time</th> <th style="width: 15%;">Depth, TR</th> <th style="width: 25%;"></th> </tr> </thead> <tbody> <tr> <td>Development</td> <td></td> <td></td> <td></td> <td style="text-align: center;">▽</td> </tr> <tr> <td>Installation</td> <td></td> <td></td> <td></td> <td style="text-align: center;">▼</td> </tr> </tbody> </table>		Date	Time	Depth, TR		Development				▽	Installation				▼
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7			<b>LEGEND</b>																	
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	▭ SHALE																			
9			<b>NOTES:</b>																	

**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
 Seneca Army Depot  
 Romulus, New York

**TEMPORARY WELL**  
**COMPLETION REPORT: MW12-29**

# 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:** 10/16/98  
**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.7	TR																
0			0	GS																
1					<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.5															
2			2	TBS	<b>SEAL</b> Type: BENTONITE Length (ft): 2															
3					<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.2 Slot Size (in): 10															
4			4	TSP	<b>SANDPACK</b> Type: #0, #00 Length (ft): 10.1															
5																				
6			5.8	TSC																
7																				
8																				
9																				
10																				
11																				
12																				
13			13	BSC																
14			14.1	POW, BOD																
15																				
16																				
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<b>WELL DEVELOPMENT DATA</b>																				
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-30**

# TEMPORARY WELL COMPLETION REPORT: MW12-31

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																							
0			-2.7	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.6</p> <p><b>SEAL</b> Type: BENTONITE Length (ft): 2</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.8 Slot Size (in): 10</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 6.7</p>																																							
0			0	GS																																								
1			1.5	TBS																																								
2			3.5	TSP																																								
3			4.9	TSC																																								
4			9.7	BSC	<p style="text-align: center;"><b>WELL DEVELOPMENT DATA</b></p> <p>Date: Method: Duration: Rate: Total Volume Removed (gals):</p>																																							
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**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
**Seneca Army Depot**  
**Romulus, New York**

**TEMPORARY WELL**  
**COMPLETION REPORT: MW12-31**

# 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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.6	TR																
0	[Cross-hatch]		0	GS	<p><b>RISER</b>                      Diameter (ID) (in): 2                      Type: PVC                      Length (ft): 7.75</p> <p><b>SEAL</b>                      Type: BENTONITE                      Length (ft): 2</p> <p><b>SCREEN</b>                      Diameter (ID) (in): 2                      Type: PVC                      Length (ft): 4.85                      Slot Size (in): 10</p> <p><b>SANDPACK</b>                      Type: #0, #00                      Length (ft): 6.5</p>															
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2	[Diagonal lines]		2	TBS																
3	[Diagonal lines]																			
4			4	TSP																
5			5.15	TSC																
6																				
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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

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

ENGINEERING-SCIENCE, INC.		CLIENT: <u>Seneca Army Depot</u>	WELL #: <u>MW12-35</u>	
PROJECT: <u>Sead-12 RI/FS</u>	LOCATION: <u>North of 804, immediately downgradient of Washat UST</u>		PROJECT NO: <u>730047-01001</u>	INSPECTOR: <u>DRG/JTR</u>
			CHECKED BY: <u>DRG</u>	
DRILLING CONTRACTOR: <u>Maxum Technology</u>	DRILLER: <u>Rodney Bush</u>		POW DEPTH: <u>38' (BGS)</u>	
DRILLING COMPLETED: <u>11/3/98</u>	DEPTH TO BEDROCK: <u>16.8'</u>		OUTER CASING INSTALLATION: <u>10/30/98</u>	
BORING DEPTH: <u>38.8'</u>	BORING METHOD(S): <u>HQ core (2.5")</u>		INNER CASING INSTALLATION: <u>11/3/98</u>	
BORING DIAMETER(S): <u>3 1/2</u>	ASSOCIATED SWMU/AOC: <u>Sead-12</u>		SURFACE COMPLETION DATE: <u>11/4/98</u>	
			COMPLETION CONTRACTOR/CREW: <u>maxum</u>	CORE TYPE/SIZE: <u>HQ (2.5")</u>
			FOOTAGE CORED: <u>2'</u>	ESTIMATED GROUND ELEVATION: _____
PROTECTIVE CASING:				
DIAMETER: <u>6"</u>		LENGTH: <u>19'</u>		
OUTER CASING:				
TC: <u>-2.5'</u>	TYPE: <u>steel</u>	DIAMETER: <u>6"</u>	LENGTH: <u>19'</u>	POC: <u>16.8'</u>
RISER:				
TR: <u>-2.5'</u>	TYPE: <u>pvc sch 40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>30.2'</u>	
SCREEN:				
TSC: <u>27.7' (BGS)</u>	TYPE: <u>sch 40 pvc</u>	DIAMETER: <u>2"</u>	LENGTH: <u>70' <sup>(POC)</sup> 9.8'</u>	SLOT SIZE: <u>0.010"</u>
POINT OF WELL: (SILT SUMP)				
TYPE: <u>Sump</u>	BSC: <u>37.5' (BGS)</u>	POW: <u>38' (BGS)</u>		
GROUT:				
OUTER	TG: <u>2'</u>	TYPE: <u>Cement / Bentonite</u>	LENGTH: <u>14.8'</u>	
INNER	TG: <u>0'</u>	TYPE: <u>Cement / Bentonite</u>	LENGTH: <u>14.8'</u>	
SEAL:				
TBS: <u>14.8'</u>	TYPE: <u>Bentonite chip</u>		LENGTH: <u>9.9'</u>	
SAND PACK:				
TSP: <u>24.7</u>	TYPE: <u>more #00</u>		LENGTH: <u>1.0'</u>	
TSP: <u>25.7</u>	TYPE: <u>more #0</u>		LENGTH: <u>13.1'</u>	
SURFACE COLLAR:				
TYPE: <u>concrete</u>	RADIUS: <u>2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>4"</u>	
CENTRALIZER DEPTHS				
DEPTH 1: <u>38' - 37.5'</u>	DEPTH 2: <u>27.5' - 27.0'</u>	DEPTH 3: _____	DEPTH 4: _____	
COMMENTS: <u>BOD 38.8' Backfill 0.8' with well sand.</u>				

\* ALL MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

# TEMPORARY WELL COMPLETION REPORT: MW12-37

**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:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS															
			-2.4	TR																
0	[Cross-hatch]		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 7.4															
1					<b>SEAL</b> Type: BENTONITE Length (ft): 2															
2	[Cross-hatch]		2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.9 Slot Size (in): 10															
3					<b>SANDPACK</b> Type: #0, #00 Length (ft): 6.4															
4			4	TSP																
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-37**



# TEMPORARY WELL COMPLETION REPORT: MW12-38

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			-2	TR	
0	GS		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.8
1			1.5	TBS	<b>SEAL</b> Type: BENTONITE Length (ft): 2.5
2			3.5	TSP	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.9 Slot Size (in): 10
3			5	TSC	<b>SANDPACK</b> Type: #0, #00 Length (ft): 6.3
4					
5					
6					
7					
8					
9					
10			9.9	BSC	
11			10.5	POW, BOD	
12					
13					
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:	Method:	Duration:	Rate:
Total Volume Removed (gals):			

WATER LEVELS			
	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u> ▽
Development			▽
Installation			▼

LEGEND			
TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN POW POINT OF WELL BOD BOTTOM OF DRILL HOLE in INCHES ft FEET ID INSIDE DIAMETER gals GALLONS SCH SCHEDULE NA NOT APPLICABLE	<b>WELL DETAILS</b> SEAL SANDPACK	<b>LITHOLOGY</b> FILL TILL SHALE	

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-38**

# TEMPORARY WELL COMPLETION REPORT: MW12-39

**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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																																						
-2			-2	TR	<p><b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.8</p> <p><b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.9 Slot Size (in): 10</p> <p><b>SEAL</b> Type: 1.5 Length (ft): 2.5</p> <p><b>SANDPACK</b> Type: #0, #00 Length (ft): 6.3</p>																																																						
0	GS		0	GS																																																							
1.5	TBS		1.5	TBS																																																							
3.5	TSP		3.5	TSP																																																							
5	TSC		5	TSC																																																							
9.9	BSC		9.9	BSC																																																							
10.5	POW, BOD		10.5	POW, BOD																																																							
11																																																											
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NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

**TEMPORARY WELL  
 COMPLETION REPORT: MW12-39**

# 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  
**CHECKED BY:**

DEPTH (ft)	MACRO SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
			-2.7	TR	
0	GS		0	GS	<b>RISER</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 8.4
1	TBS				<b>SEAL</b> Type: BENTONITE Length (ft): 2
2	TSP		2	TBS	<b>SCREEN</b> Diameter (ID) (in): 2 Type: PVC Length (ft): 4.85 Slot Size (in): 10
3	TSC				<b>SANDPACK</b> Type: #0, #00 Length (ft): 6.9
4	TSC		4	TSP	
5	TSC				
6	TSC		5.7	TSC	
7					
8					
9					
10					
11	BSC		10.55	BSC	
12	POW.		10.9	POW.	
13	BOD			BOD	
14					
15					
16					
17					
18					
19					

WELL DEVELOPMENT DATA			
Date:	Method:	Duration:	Rate:
Total Volume Removed (gals):			

WATER LEVELS			
	<u>Date</u>	<u>Time</u>	<u>Depth, TR</u> ▽
Development			▽
Installation			▽

LEGEND			
TR	TOP OF WELL RISER	WELL DETAILS	LITHOLOGY
GS	GROUND SURFACE	█	▣
TBS	TOP BENTONITE SEAL	█	▣
TSP	TOP OF SANDPACK	▣	▣
TSC	TOP OF SCREEN	▣	▣
BSC	BOTTOM OF SCREEN	▣	▣
POW	POINT OF WELL	▣	▣
BOD	BOTTOM OF DRILL HOLE	▣	▣
in	INCHES	▣	▣
ft	FEET	▣	▣
ID	INSIDE DIAMETER	▣	▣
gals	GALLONS	▣	▣
SCH	SCHEDULE	▣	▣
NA	NOT APPLICABLE	▣	▣

NOTES:

**UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York**

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

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

ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW13-1

PROJECT: 10 SWMU PROJECT NO: \_\_\_\_\_  
 LOCATION: SEAD 13 INSPECTOR: ES  
 CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Empire POW DEPTH: 12'  
 DRILLER: John INSTALLATION STARTED: 12-8-93  
 DRILLING COMPLETED: 12-8-93 INSTALLATION COMPLETED: 12-8-93  
 BORING DEPTH: 12' SURFACE COMPLETION DATE: \_\_\_\_\_  
 DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: Empire  
 BORING DIAMETER(S): 8 1/2" BEDROCK CONFIRMED (Y/N)? \_\_\_\_\_  
 ASSOCIATED SWMU/AOC: 13 ESTIMATED GROUND ELEVATION: \_\_\_\_\_

PROTECTIVE SURFACE CASING:  
 DIAMETER: 4" x 4" LENGTH: \_\_\_\_\_

RISER:  
 TR: \_\_\_\_\_ TYPE: PVC 40 DIAMETER: 2" LENGTH: \_\_\_\_\_

SCREEN:  
 TSC: 4.3' TYPE: PVC 40 DIAMETER: 2" LENGTH: 2' + 4' SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)  
 TYPE: PVC point BSC: 11.1' POW: 12.0'

GROUT:  
 TG: Ground TYPE: Cement-bentonite LENGTH: 2.0'

SEAL:  
 TBS: 2.0' TYPE: bentonite pellets LENGTH: 1'

SAND PACK:  
 TSP: 3.0' #1 35 #3 TYPE: #3 and #1 LENGTH: 9.0'

SURFACE COLLAR:  
 TYPE: \_\_\_\_\_ RADIUS: 2' x 2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

CENTRALIZER DEPTHS  
 DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

COMMENTS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

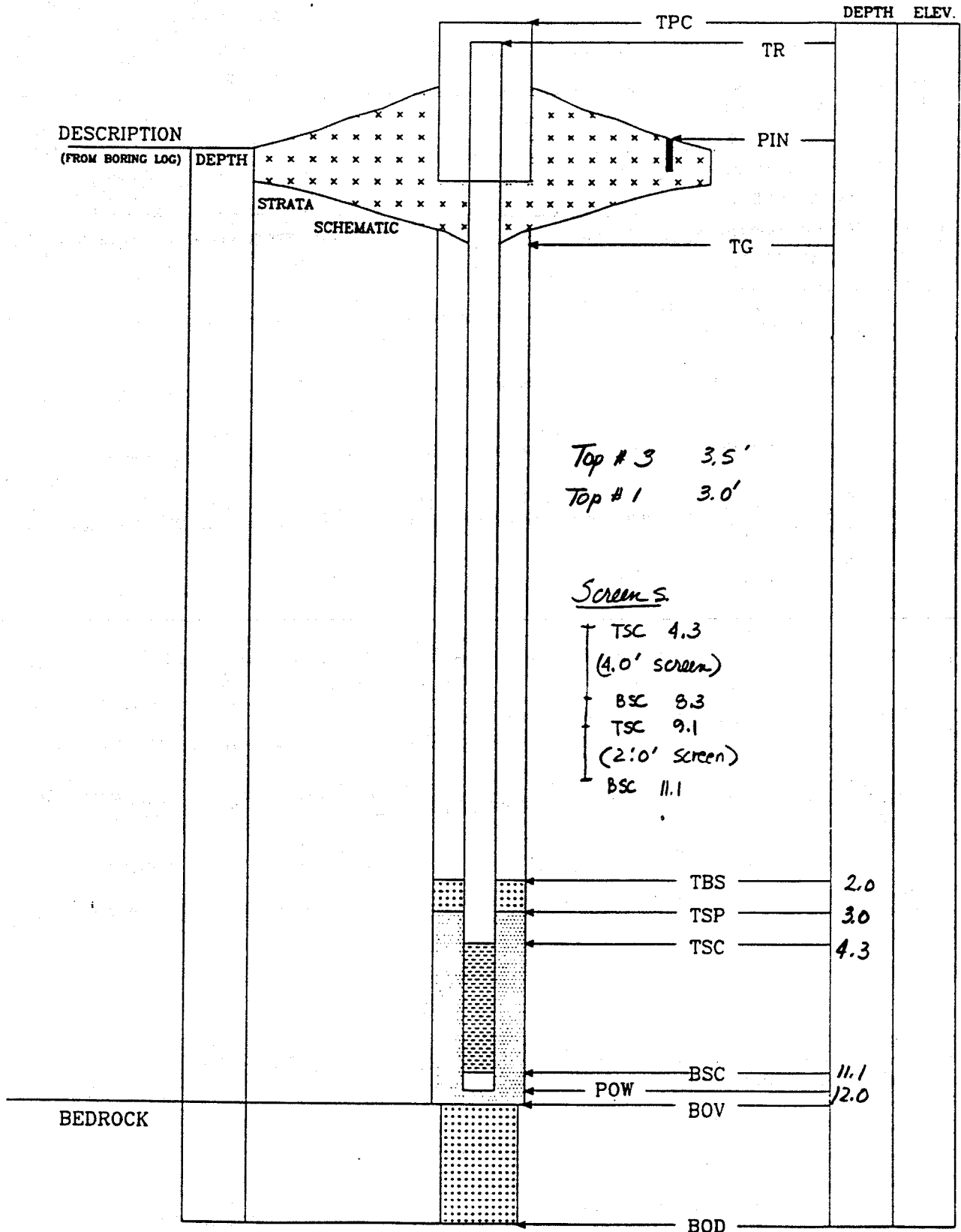
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: 13-1

DATE: 12-8-93



*Note: depth measured from ground.*

• NOT TO SCALE

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

ENGINEERING-SCIENCE, INC. CLIENT: ACOE WELL #: MW 13-2

PROJECT: 10 SWMU PROJECT NO: \_\_\_\_\_  
LOCATION: SEAD 13 INSPECTOR: ES  
CHECKED BY: \_\_\_\_\_

DRILLING CONTRACTOR: Empire POW DEPTH: 160'  
DRILLER: Bob INSTALLATION STARTED: 11/9/93  
DRILLING COMPLETED: 11/9/93 INSTALLATION COMPLETED: 11/9/93  
BORING DEPTH: 160' SURFACE COMPLETION DATE: \_\_\_\_\_  
DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: Empire  
BORING DIAMETER(S): 8 1/2" BEDROCK CONFIRMED (Y/N?): \_\_\_\_\_  
ASSOCIATED SWMU/AOC: 13 ESTIMATED GROUND ELEVATION: \_\_\_\_\_

PROTECTIVE SURFACE CASING:  
DIAMETER: 4"x4" Steel LENGTH: 5' total

RISER:  
TR: \_\_\_\_\_ TYPE: PVC-40 DIAMETER: 2" LENGTH: \_\_\_\_\_

SCREEN:  
TSC: 6.3' TYPE: PVC-40 DIAMETER: 1 1/2" LENGTH: 9.0' SLOT SIZE: 20'

POINT OF WELL: (SILT SUMP)  
TYPE: PVC Cap BSC: 15.3' POW: 16.0'

GROUT:  
TG: Ground TYPE: Cement-bentonite LENGTH: 3.0'

SEAL:  
TBS: 3.0' TYPE: Benton-pellets LENGTH: 1.0'

SAND PACK:  
TSP: #3-5.3' #1-4.5' TYPE: #3 + #15/16" LENGTH: 10.2'

SURFACE COLLAR:  
TYPE: Cement RADIUS: 2'x2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

CENTRALIZER DEPTHS  
DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

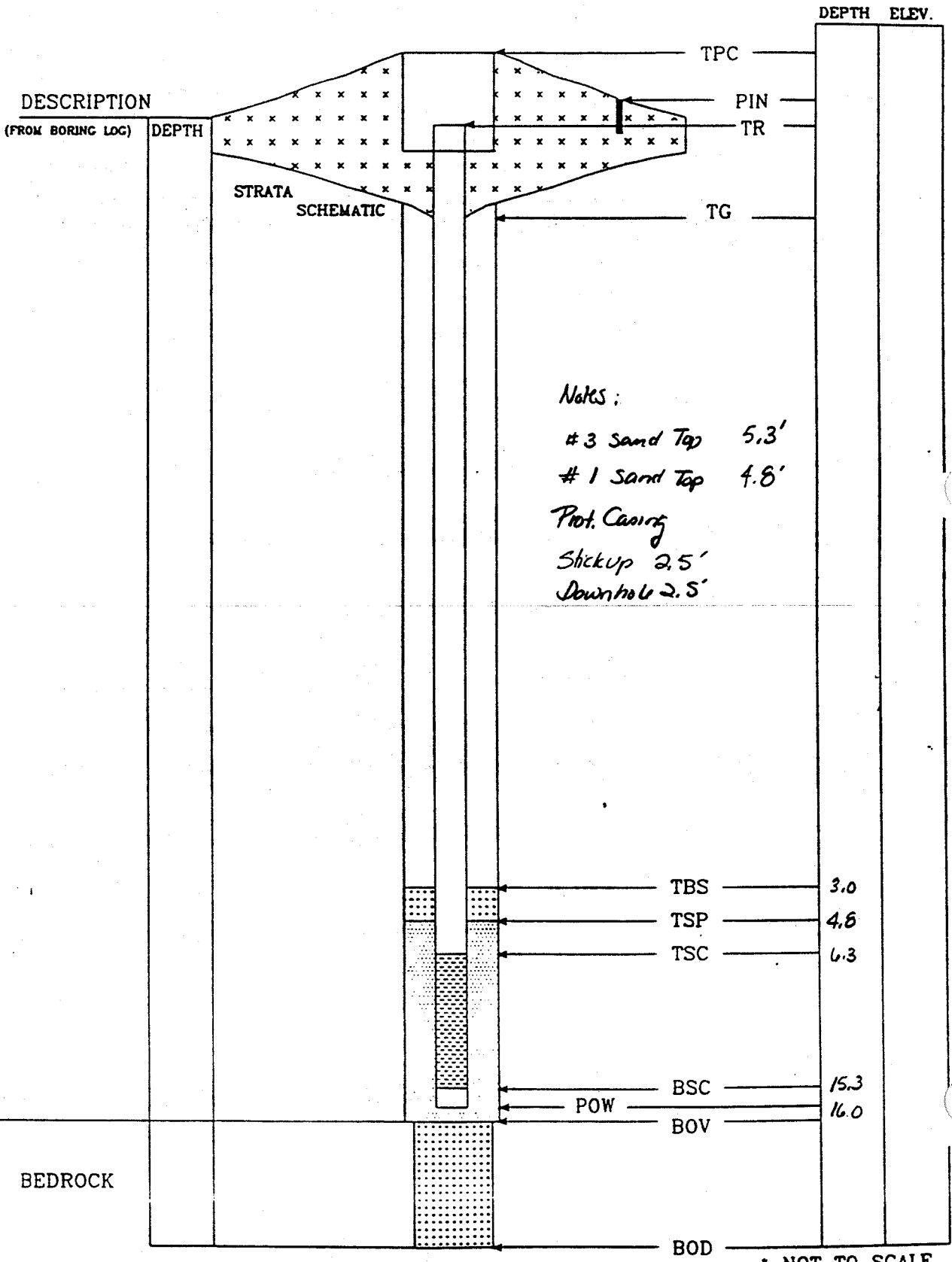
# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW13-2

DATE: 11/9/93



• NOT TO SCALE

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

ENGINEERING-SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW13-3</u>
PROJECT: <u>10 Swmu</u>	PROJECT NO: _____		INSPECTOR: _____
LOCATION: <u>SEAD13</u>	CHECKED BY: _____		
DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>24.0'</u>		
DRILLER: <u>Bob</u>	INSTALLATION STARTED: <u>12-8-93</u>		
DRILLING COMPLETED: <u>12-13-93</u>	INSTALLATION COMPLETED: <u>12-13-93</u>		
BORING DEPTH: <u>24.0'</u>	SURFACE COMPLETION DATE: <u>12-13-93</u>		
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: _____		
BORING DIAMETER(S): <u>8 1/2"</u>	BEDROCK CONFIRMED (Y/N)? <u>N</u>		
ASSOCIATED SWMU/AOC: <u>13</u>	ESTIMATED GROUND ELEVATION: _____		

## PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel      LENGTH: 5'

## RISER:

TR: \_\_\_\_\_ TYPE: PVC-40      DIAMETER: 2"      LENGTH: \_\_\_\_\_

## SCREEN:

Two screens - 4' and 9'

TSC: 8.9'      TYPE: PVC-40      DIAMETER: 2"      LENGTH: 13'      SLOT SIZE: 0.01"

## POINT OF WELL: (SILT SUMP)

TYPE: PVC-point      BSC: 22.9'      POW: 24.0'

## GROUT:

TG: Ground      TYPE: Cem-bentonite      LENGTH: 5.5'

SEAL:      TBS: 5.5'      TYPE: bentonite pellets      LENGTH: 2.0'

SAND PACK:      TSP: #3-8' #1-7.5'      TYPE: #3 + #1      LENGTH: 16.5'

## SURFACE COLLAR:

TYPE: \_\_\_\_\_      RADIUS: 2' x 2'      THICKNESS CENTER: 1'      THICKNESS EDGE: 1'

## CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_      DEPTH 2: Ø      DEPTH 3: \_\_\_\_\_      DEPTH 4: \_\_\_\_\_

## COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2



# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

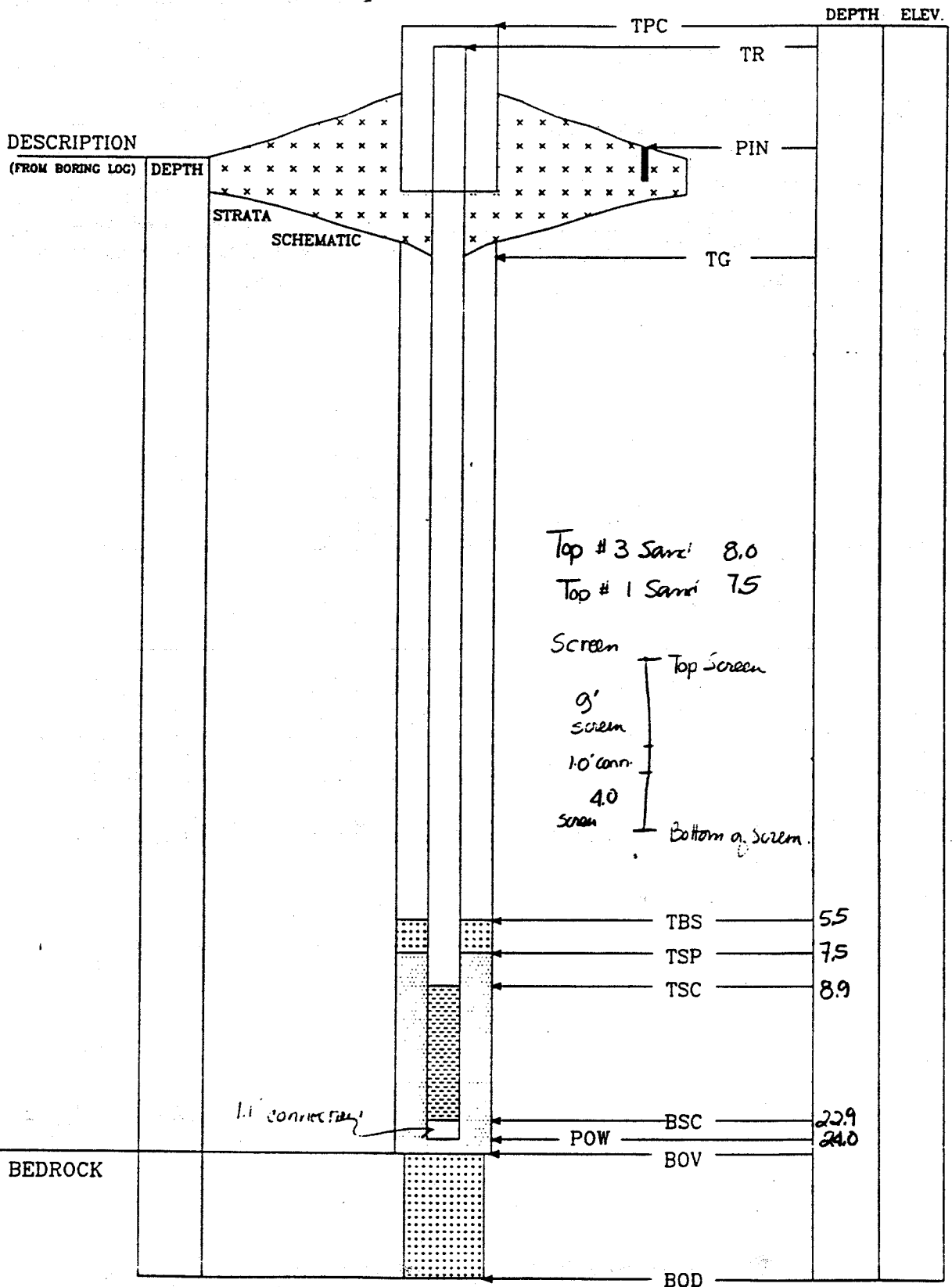
ENGINEERING-SCIENCE, INC.

CLIENT:

ACOE

WELL #: MW13-3

DATE: 12-13-93



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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>MW13-4</u>	
PROJECT: <u>10 SWMU</u>		PROJECT NO: _____	
LOCATION: <u>SEAD 13</u>		INSPECTOR: <u>ES/MB/KK</u>	
		CHECKED BY: _____	
DRILLING CONTRACTOR: <u>Empire</u>		POW DEPTH: <u>8.5'</u>	
DRILLER: <u>Scott</u>		INSTALLATION STARTED: <u>12-15-93</u>	
DRILLING COMPLETED: _____		INSTALLATION COMPLETED: _____	
BORING DEPTH: <u>8.5'</u>		SURFACE COMPLETION DATE: _____	
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>Empire/Scott</u>	
BORING DIAMETER(S): <u>8 1/2"</u>		BEDROCK CONFIRMED (Y/N): _____	
ASSOCIATED SWMU/AOC: <u>13</u>		ESTIMATED GROUND ELEVATION: _____	
PROTECTIVE SURFACE CASING:			
DIAMETER: <u>4" x 4" Steel</u> LENGTH: _____			
RISER:			
TR: _____ TYPE: <u>PVC-40</u> DIAMETER: <u>2"</u> LENGTH: _____			
SCREEN:			
TSC: <u>2.5'</u> TYPE: <u>PVC 40</u> DIAMETER: <u>2"</u> LENGTH: <u>4.0'</u> SLOT SIZE: <u>0.01"</u>			
POINT OF WELL: (SILT SUMP)			
TYPE: <u>PVC point</u> BSC: <u>7.5'</u> POW: <u>8.5'</u>			
GROUT:			
TG: <u>Ground</u> TYPE: <u>Cement-bentonite</u> LENGTH: <u>1.5'</u>			
SEAL:			
TBS: <u>1.5'</u> TYPE: <u>bentonite pellets</u> LENGTH: <u>1.0'</u>			
SAND PACK:			
TSP: <u>#1-2.5' #3-3.0'</u> TYPE: <u>#3 and #1</u> LENGTH: <u>6.0'</u>			
SURFACE COLLAR:			
TYPE: _____ RADIUS: <u>2'x2'</u> THICKNESS CENTER: <u>1'</u> THICKNESS EDGE: <u>1'</u>			
CENTRALIZER DEPTHS			
DEPTH 1: _____ DEPTH 2: _____ DEPTH 3: _____ DEPTH 4: _____			
COMMENTS:			

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

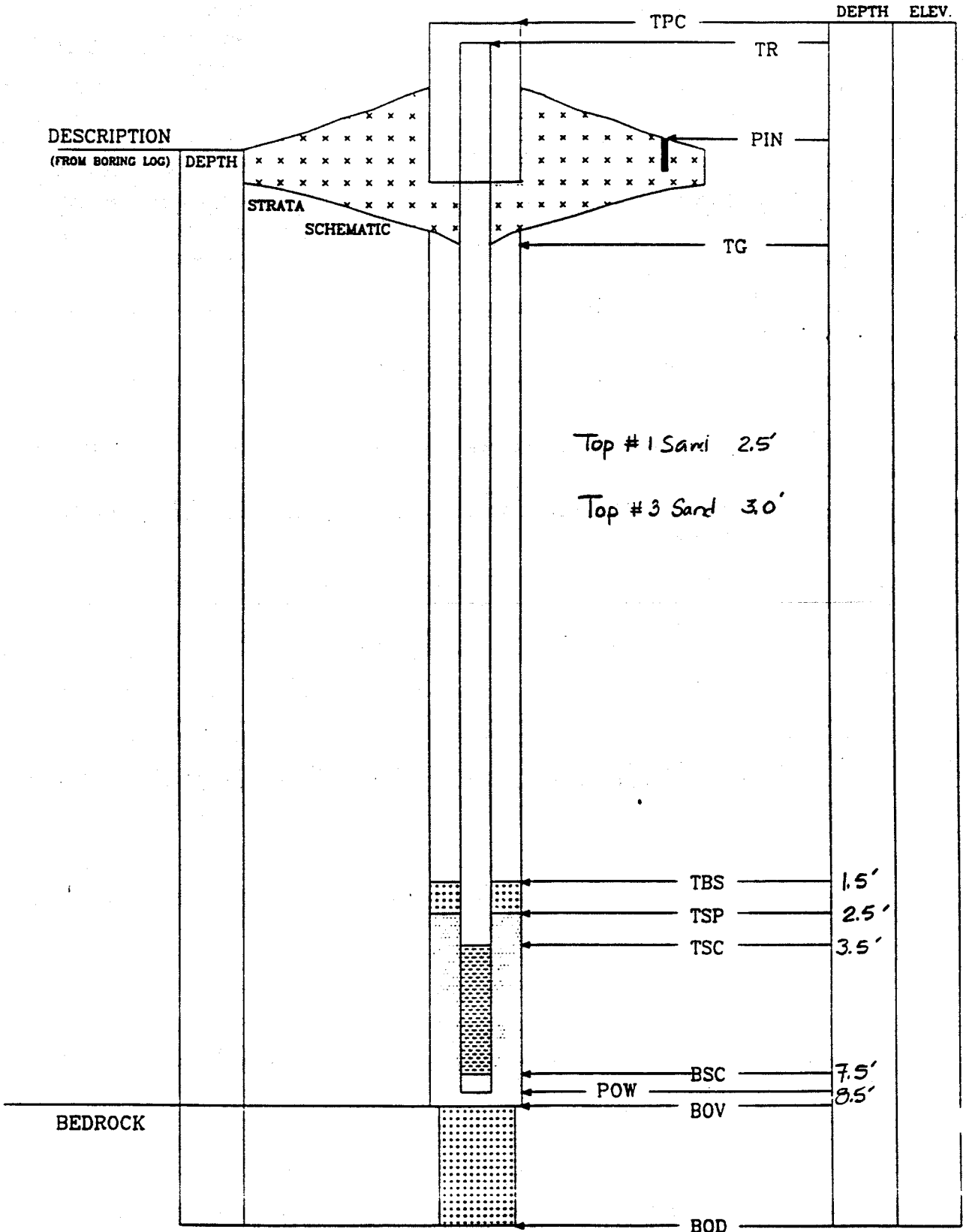
**OVERBURDEN MONITORING WELL  
PROTECTIVE RISER INSTALLATION DETAIL**

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW13-4*

DATE: *12-15-93*



• NOT TO SCALE

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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>MWB-5</u>	
PROJECT: <u>10 SWMU</u>		PROJECT NO: _____	
LOCATION: <u>SEAD 13</u>		INSPECTOR: <u>ES/LB</u>	
		CHECKED BY: _____	
DRILLING CONTRACTOR: <u>Empire</u>		POW DEPTH: <u>16.0'</u>	
DRILLER: <u>Bob</u>		INSTALLATION STARTED: <u>11/8/93</u>	
DRILLING COMPLETED: <u>11/9/93</u>		INSTALLATION COMPLETED: <u>11/9/93</u>	
BORING DEPTH: <u>16.0'</u>		SURFACE COMPLETION DATE: _____	
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>Empire</u>	
BORING DIAMETER(S): <u>8 1/2"</u>		BEDROCK CONFIRMED (Y/N?): _____	
ASSOCIATED SWMU/AOC: <u>13</u>		ESTIMATED GROUND ELEVATION: _____	
PROTECTIVE SURFACE CASING:			
DIAMETER: <u>4" x 4" Steel</u>		LENGTH: <u>5.0' total</u>	
RISER:			
TR: _____	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: _____
SCREEN:			
TSC: <u>16.3'</u>	TYPE: <u>PVC-40</u>	DIAMETER: <u>11.2"</u>	LENGTH: <u>90'</u> SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)			
TYPE: <u>PVC cap</u>	BSC: <u>15.3</u>	POW: <u>16.0'</u>	
GROUT:			
TG: <u>Ground</u>	TYPE: <u>Cement-beatonic</u>	LENGTH: <u>3.0'</u>	
SEAL:	TBS: <u>3.0'</u>	TYPE: <u>Bentonite pellets</u>	LENGTH: <u>1.8'</u>
SAND PACK:	TSP: <u>#3-5.3' #1-4.8'</u>	TYPE: <u>#3, #1 Silica</u>	LENGTH: <u>10.2'</u>
SURFACE COLLAR:			
TYPE: <u>Cement</u>	RADIUS: <u>2' x 2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS			
DEPTH 1: _____	DEPTH 2: _____	DEPTH 3: _____	DEPTH 4: _____
COMMENTS:			
* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE			

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

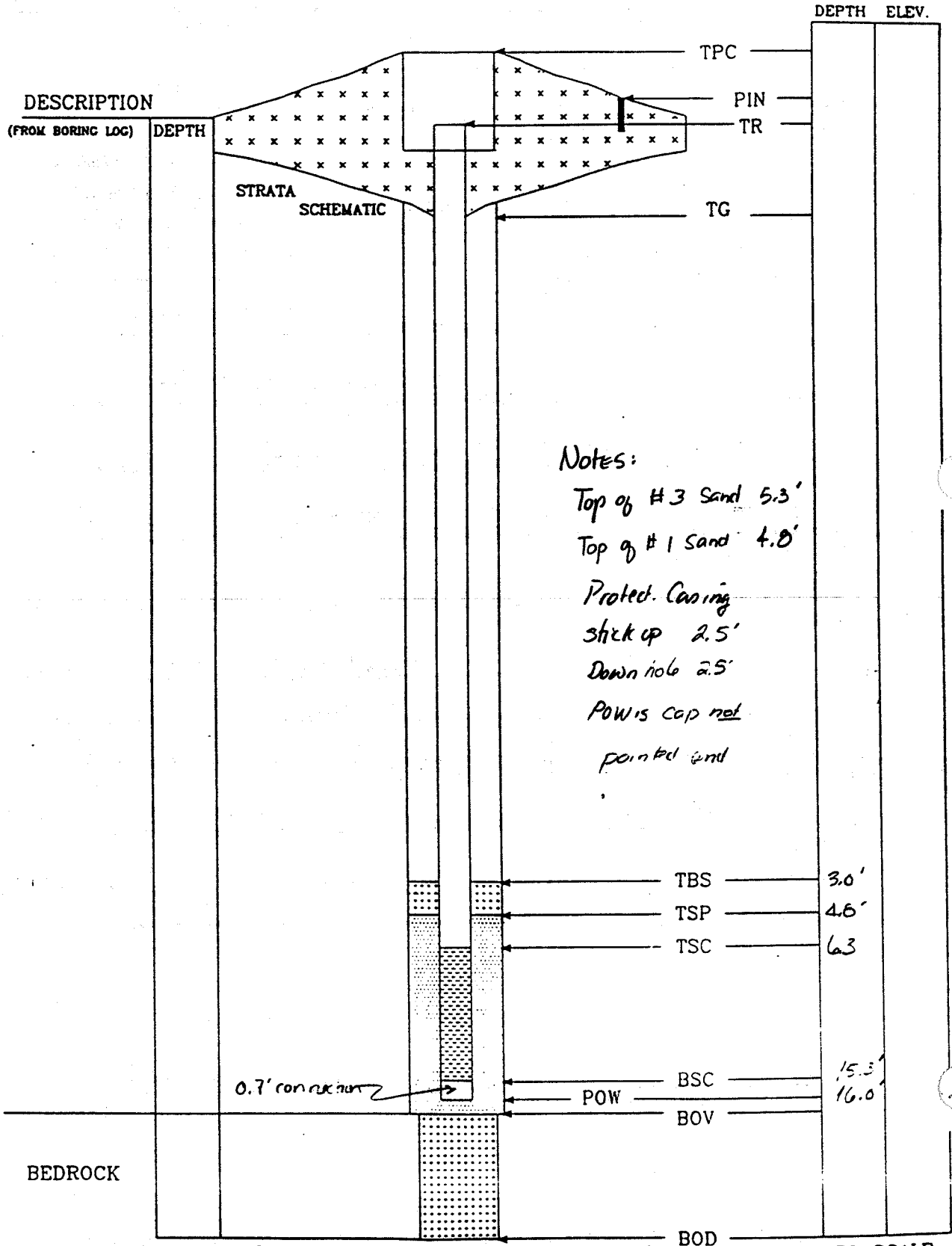
# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW13-5*

DATE *11/9/93*



*Note: All depths measured from ground surface.*

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

ENGINEERING-SCIENCE, INC. CLIENT: <u>ACOE</u>		WELL #: <u>13-6</u>	
PROJECT: <u>10 SWMU</u>	PROJECT NO: _____		
LOCATION: <u>SEAD 13</u>	INSPECTOR: <u>ES/MB/KK</u>		
		CHECKED BY: _____	
DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>10.0'</u>		
DRILLER: <u>Scott</u>	INSTALLATION STARTED: <u>12-15-93</u>		
DRILLING COMPLETED: <u>12-15-93</u>	INSTALLATION COMPLETED: <u>12-15-93</u>		
BORING DEPTH: <u>10.0'</u>	SURFACE COMPLETION DATE: <u>12-17-93</u>		
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire/Scott</u>		
BORING DIAMETER(S): <u>8 1/2"</u>	BEDROCK CONFIRMED (Y/N): _____		
ASSOCIATED SWMU/AOC: <u>13</u>	ESTIMATED GROUND ELEVATION: _____		
PROTECTIVE SURFACE CASING:			
DIAMETER: <u>4" x 4" Steel</u>		LENGTH: _____	
RISER:			
TR: _____	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: _____
SCREEN:			
TSC: <u>5.0'</u>	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>4'</u>
			SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)			
TYPE: <u>PVC point</u>	BSC: <u>9.0'</u>	POW: <u>10.0</u>	
GROUT:			
TG: <u>Ground</u>	TYPE: <u>Cem-bentonite</u>	LENGTH: <u>2.5'</u>	
SEAL:	TBS: <u>2.5'</u>	TYPE: <u>bentonite pills</u>	LENGTH: <u>1.0'</u>
SAND PACK:	TSP: <u>3.5' - #1 90-#3</u>	TYPE: <u>#3 + #1</u>	LENGTH: <u>6.5'</u>
SURFACE COLLAR:			
TYPE: _____	RADIUS: <u>2' x 2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS			
DEPTH 1: _____	DEPTH 2: _____	DEPTH 3: _____	DEPTH 4: _____
COMMENTS:			
* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE			

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

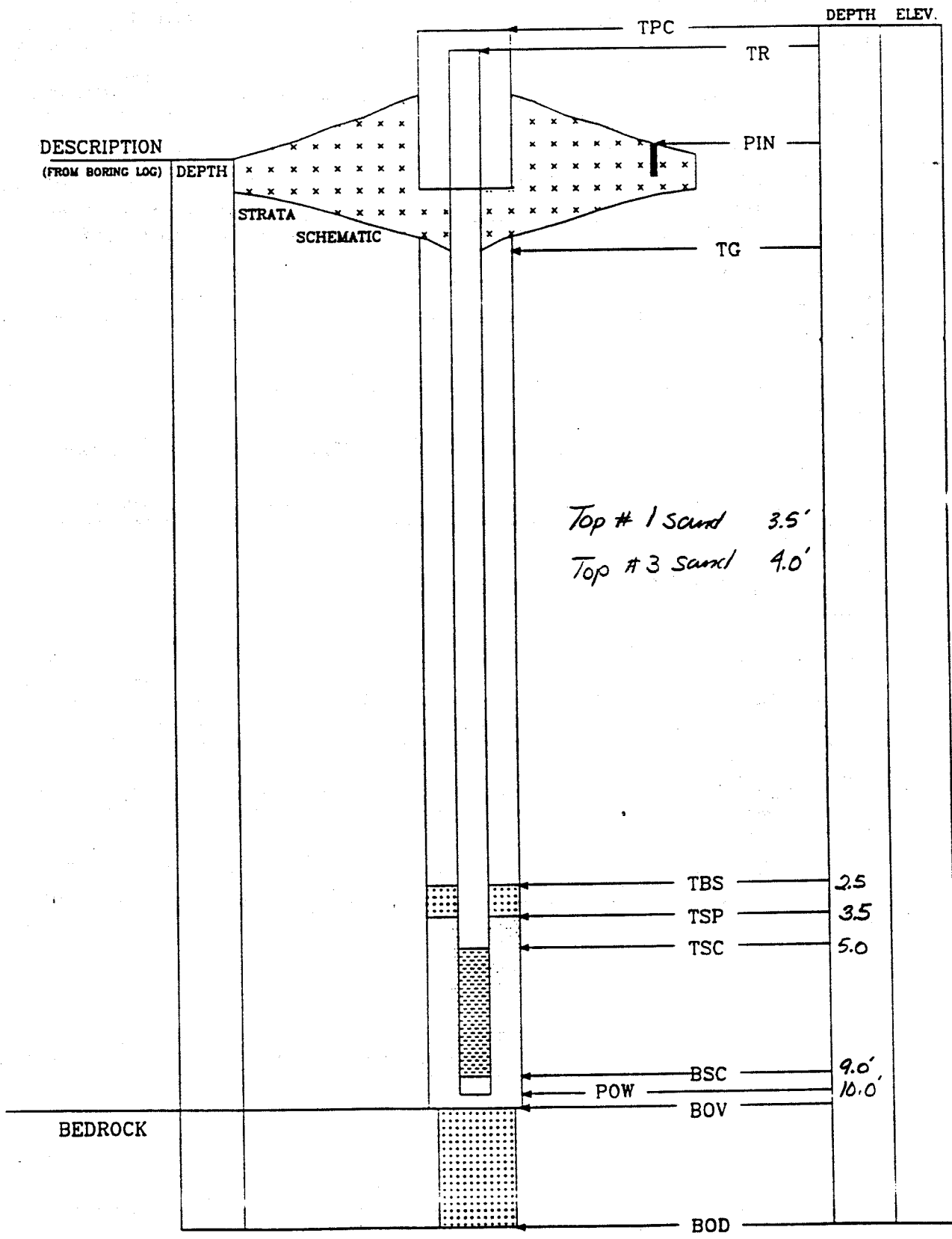
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW13-6*

DATE: \_\_\_\_\_



DESCRIPTION  
(FROM BORING LOG)

DEPTH

STRATA

SCHEMATIC

*Top # 1 sand 3.5'*  
*Top # 3 sand 4.0'*

BEDROCK

• NOT TO SCALE

<b>OVERBURDEN MONITORING WELL COMPLETION REPORT &amp; INSTALLATION DETAIL PROTECTIVE RISER COMPLETION</b>			
ENGINEERING-SCIENCE, INC. CLIENT:		WELL #: MW 13.7	
PROJECT: 10 SWMU ESI		PROJECT NO: 720478-01001	
LOCATION: Seneca Army Depot, Romulus, NY		INSPECTOR: KY BK	
		CHECKED BY: _____	
DRILLING CONTRACTOR: EMPIRE SOILS		POW DEPTH: 8.0 ft	
DRILLER: JOHN ED		INSTALLATION STARTED: 1-24-94	
DRILLING COMPLETED: 1-24-94		INSTALLATION COMPLETED: 1-24-94	
BORING DEPTH: 8.0 ft		SURFACE COMPLETION DATE: 1-25-94	
DRILLING METHOD(S): Hollow Stem Auger		COMPLETION CONTRACTOR/CREW: NA	
BORING DIAMETER(S): 8.5 in		BEDROCK CONFIRMED (Y/N): <input checked="" type="checkbox"/>	
ASSOCIATED SWMU/AOC: SEAD 13		ESTIMATED GROUND ELEVATION: _____	
PROTECTIVE SURFACE CASING:			
DIAMETER: 2 in		LENGTH: _____	
RISER:			
TR: + 2.5 ft		TYPE: PVC	
		DIAMETER: 2 in	
		LENGTH: _____	
SCREEN:			
TSC: 5.0 ft		TYPE: PVC	
		DIAMETER: 2 in	
		LENGTH: 2 ft	
		SLOT SIZE: 1/100 in	
POINT OF WELL: (SILT SLUMP)			
TYPE: PVC		BSC: 7.0 ft	
		POW: 8.0	
GROUT: NA			
TG: _____		TYPE: _____	
		LENGTH: _____	
SEAL:			
TBS: 3.0 ft		TYPE: bentonite pellets	
		LENGTH: 1.0 ft	
SAND PACK:			
TSP: 4.0 ft		TYPE: #3 PCL - 8.0 to 4.5 ft	
		#1 PCL - 4.5 to 4.0 ft	
		LENGTH: _____	
SURFACE COLLAR:			
TYPE: Quikrete		RADIUS: 1 ft	
		THICKNESS CENTER: 3.0 ft	
		THICKNESS EDGE: .5 ft	
CENTRALIZER DEPTHS NA			
DEPTH 1: _____		DEPTH 2: _____	
		DEPTH 3: _____	
		DEPTH 4: _____	
COMMENTS:			

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2



p2 of 3

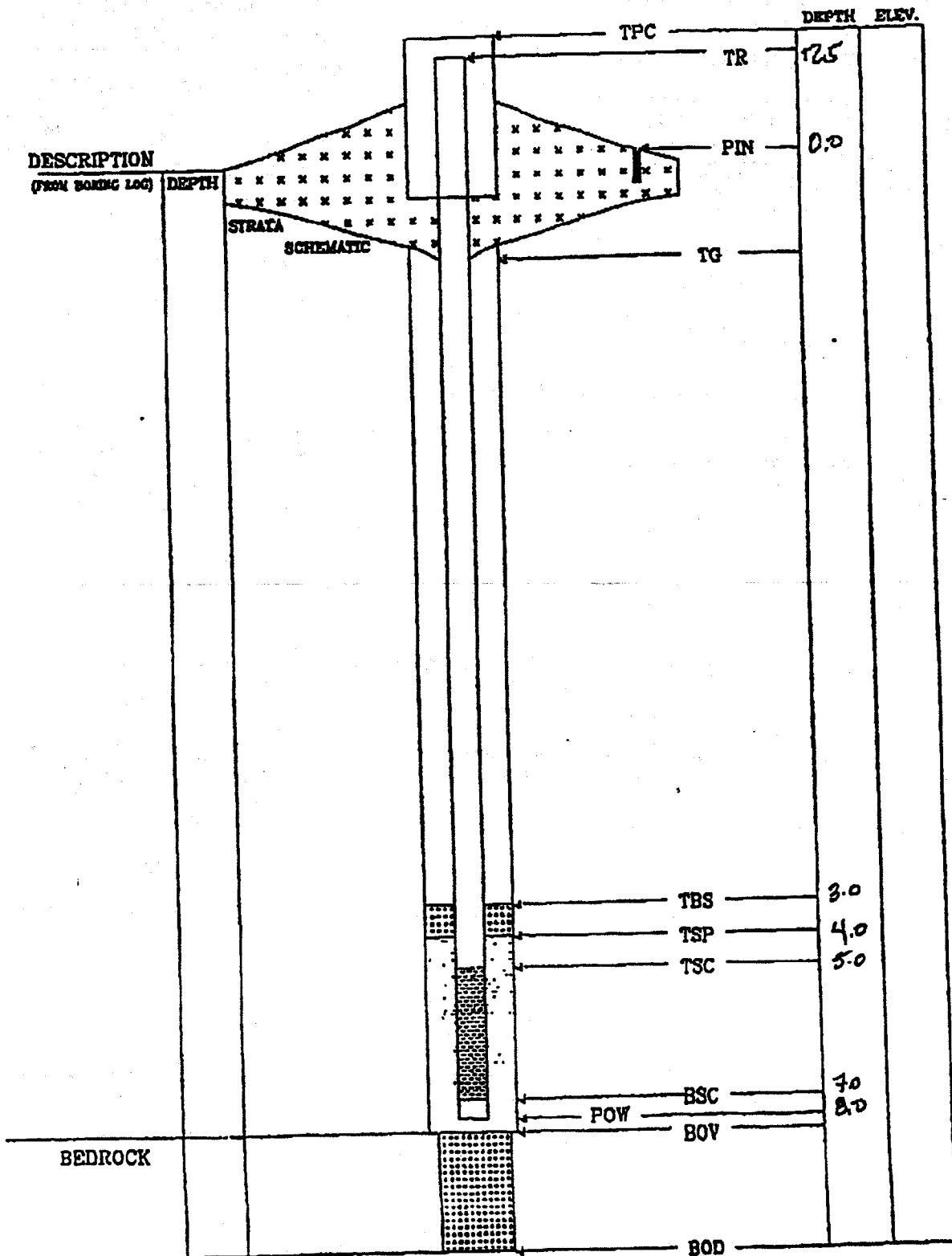
OVERBURDEN MONITORING WELL  
PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT: USAOE

WELL #: MW13-7

DATE: 1-24-94



<b>Contractor:</b> SJB, Inc. <b>Driller:</b> John Warner <b>Inspector:</b> E. Ashton <b>Rig Type:</b> Mobile	<b>PARSONS ENGINEERING SCIENCE, INC.</b> <b>DRILLING RECORD</b>	<b>BORING/ WELL NO.</b> Sheet # 1 of 1 # <b>SB-13-11/MW-13-11</b>
	<b>PROJECT NAME:</b> Seneca Army Depot-SEAD-13	<b>Location Description:</b> SEE SITE PLAN
	<b>PROJECT NUMBER:</b> 736994	

<b>GROUNDWATER OBSERVATIONS</b>				<b>Weather:</b> Cloudy-70' F  <b>Date/Time Start:</b> 8/16/01-0925  <b>Date/Time Finish:</b> 8/16/01-1310	<b>Location Plan</b>
<b>Water Level</b>	Dry	Dry	Dry		SEE SITE PLAN
<b>Date</b>	8/17/01	8/22/01	9/04/01		
<b>Time</b>	0825	1010	1130		
<b>Meas. From</b>	TOC	TOC	TOC		

Sampl Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHMATIC 2.5"-stick-up	COMMENTS	
0	134016 (0-2)	5/9 16/15	50	696	(0'-2') Brown to light Grey, silt with clay, trace of fine sand and fine gravel (weathered shale), roots, dry.-ML/SC		Grout 0-1'	
1							1'	2" PVC Riser
2		14/16 21/21	50	175	(2'-4') Light Brown, fine sand with silt, fine to medium gravel (weathered shale), dry.-SM/SC			Bentonite Pellets 1-3.5'
3								3.5'
4		9/16 22/28	50	190	(4'-6') Brown, silt with clay, fine to medium gravel (weathered shale), trace of fine sand, dry.-ML/SC			4.5'
5								
6		53/60 67/	80	91	(6'-8') Same as above.- ML/SC			Filtered sand (#0) pack-3.5-15'
7		100/4						0.010 Slot Sch. 40 PVC Screen-4.5'-14.5'
8	134017 (8-10)	13/19 24/37	80	264	(8'-10') Light Grey, fine to medium sand, fine to course gravel (weathered shale), silt, dry.-SM/SC			
9								
10		13/37 100/4	80	106	(10'-11.8) Same as above.-SM/SC Refusal at 11.8' bgs. Note: Drilled to 15' bgs with HSAs.			
11								
12								
13								
14								
15							14.5'	
					Terminated soil boring at 15 feet bgs.		15' Sump (14.5-15')	

<b>SAMPLING METHOD</b>  SS - SPLIT SPOON  A - AUGER CUTTINGS  C - CORED	<b>COMMENTS:</b> Collected soil samples 134016 (0'-2) bgs and 134017 (8'-10') bgs for B/N/A SVOCs, TAL Metals, Cyanide, and Nitrate analysis. Additionally, collected soil samples 134017 (8'-10') bgs MS & MSD for same analysis mention above. Installed 2-inch monitoring well.
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# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

## PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW-13-11</u>
PROJECT: <u>10 SWM4</u>		PROJECT NO: <u>736994</u>	
LOCATION: <u>SEAD 13</u>		INSPECTOR: <u>Ed Ashton</u>	
		CHECKED BY: <u>Ed Ashton</u>	
DRILLING CONTRACTOR: <u>STB, Inc.</u>	POW DEPTH: <u>15'</u>		
DRILLER: <u>John Warner</u>	INSTALLATION STARTED: <u>8/16/01 @ 0925</u>		
DRILLING COMPLETED: <u>8/16/01</u>	INSTALLATION COMPLETED: <u>8/16/01 @ 1310</u>		
BORING DEPTH: <u>15'</u>	SURFACE COMPLETION DATE: <u>8/17/01</u>		
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>STB, Inc.</u>		
BORING DIAMETER(S): <u>8 1/2" - in</u>	BEDROCK CONFIRMED (Y/N?): _____		
ASSOCIATED SWMU/AOC: <u>13</u>	ESTIMATED GROUND ELEVATION: _____		
PROTECTIVE SURFACE CASING:			
DIAMETER: <u>4x4" steel</u>		LENGTH: <u>3.5'</u>	TOR: _____
RISER:			
TOC: _____	TYPE: <u>PVC 40</u>	DIAMETER: <u>2"</u>	LENGTH: _____
SCREEN:			
TSC: <u>4.5'</u>	TYPE: <u>PVC 40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>10'</u> SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)			
YPE: <u>PVC Point</u>	BSC: <u>14.5'</u>	POW: <u>15'</u>	
GROUT:			
TG: <u>Ground</u>	TYPE: <u>Cement-Best.</u>	LENGTH: <u>1.0'</u>	
SEAL: _____	TBS: <u>1.0'</u>	TYPE: <u>Bent. pellets</u>	LENGTH: <u>2.5'</u>
SAND PACK: _____	TSP: <u>3.5'</u>	TYPE: <u>40</u>	LENGTH: <u>11.5'</u>
SURFACE COLLAR:			
TYPE: _____	RADIUS: <u>2x2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS			
DEPTH 1: _____	DEPTH 2: _____	DEPTH 3: _____	DEPTH 4: _____
COMMENTS:			

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

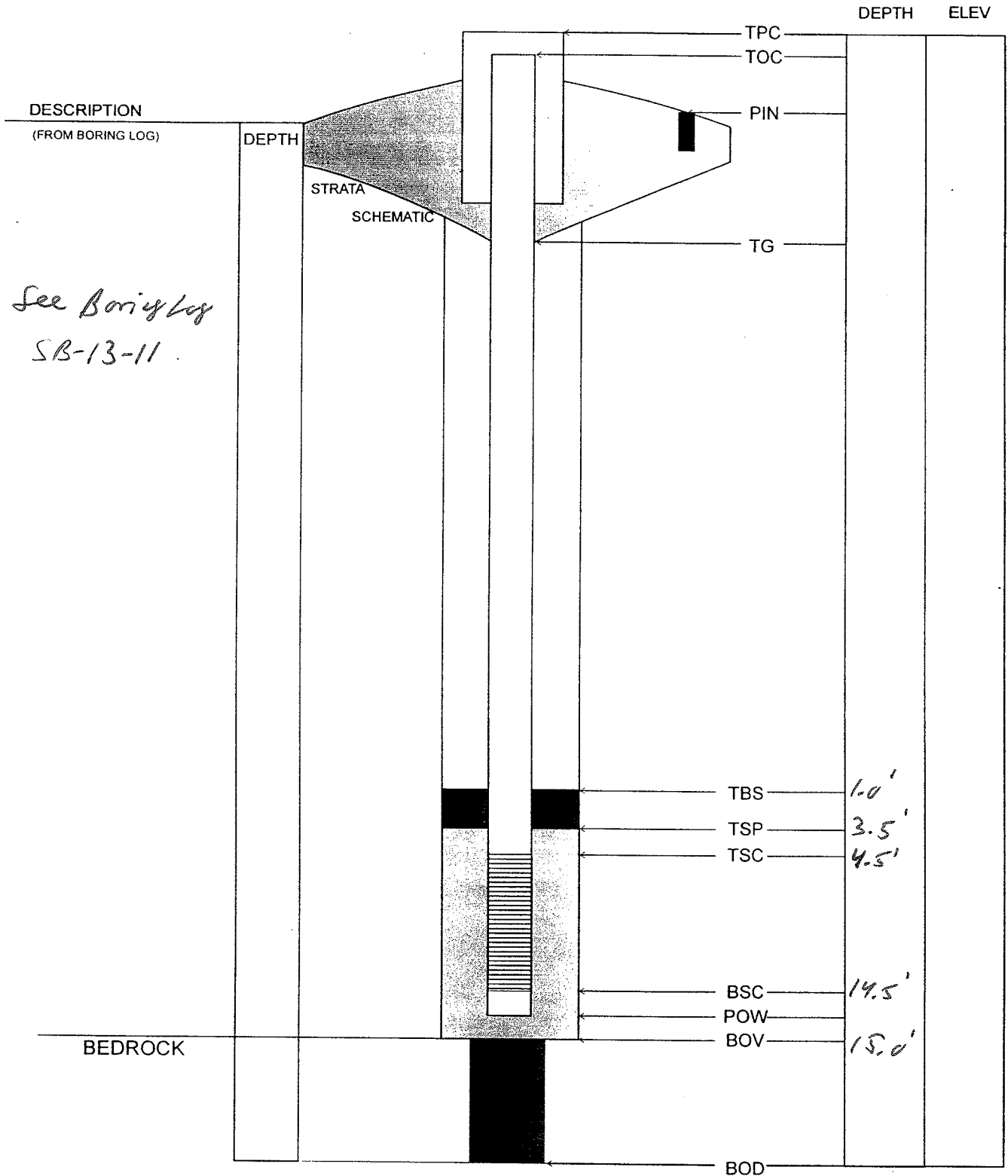
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

PARSONS ENGINEERING SCIENCE, INC.

CLIENT: *ALCOE*

WELL #: *MW-13-11*

DATE: *8/18/01*



<b>Contractor:</b> SJB, Inc. <b>Driller:</b> John Warner <b>Inspector:</b> E. Ashton <b>Rig Type:</b> Mobile	<b>PARSONS ENGINEERING SCIENCE, INC.</b> <b>DRILLING RECORD</b>	<b>BORING/ WELL NO.</b> Sheet # 1 of 1 # SB-13-12/MW-13-12 <b>Location Description:</b> SEE SITE PLAN
<b>PROJECT NAME:</b> Seneca Army Depot-SEAD-13 <b>PROJECT NUMBER:</b> 736994		

<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> Sunny-70°F	<b>Location Plan</b> <input type="checkbox"/>
Water Level	Dry	Dry	9.45		<b>Date/Time Start:</b> 8/15/01-1000	SEE SITE PLAN
Date	8/17/01	8/22/01	9/4/01		<b>Date/Time Finish:</b> 8/15/01-1306	
Time	0830	1020	1233			
Meas. From	TOC	TOC	TOC			

Sampl Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC 2.5'-stick-up	COMMENTS
0	134018 (0-2)	2/3 5/6	80	157	(0'-2') Brown, clay with silt, trace of fine sand, roots, dry to moist. CL/ML		Grout 0-1'
1							2" PVC Riser 1'
2		8/21 18/16	50	74	(2'-3.5') Brown to light Brown, clay with silt, trace of fine sand, dry. CL/ML		Bentonite Pellets 1-1.75' 1.75'
3							2'
4		16/29 35/37	50	90.5	(3.5'-4') Light Grey to light Brown, silt with clay, trace of fine sand and fine to medium gravel (weathered shale), dry.- ML/SC		Filtered sand (#0) pack-1.75-11.3'
5					(4'-6) Grey to Light Grey, silt with clay, trace of fine sand, fine to medium gravel (weathered shale), dry. - ML/SC		
6	134019 (6-8)	62/76 67/67	90	100	(6'-8') Brown to light Grey, silt, trace of clay and fine sand, fine to medium gravel (weathered shale), dry.- ML/SC		0.010 Slot Sch. 40 PVC Screen-2-9.3'
7							
8		16/32 46/66	80	25	(8'-10') Same as above, except for soil Grey in color.		9.3'
9							Sump (9.3'-10')
10		36/58 100/.3	50	82.2	(10'-11.3') Same as above. Refusal at 11.3' bgs. Weathered shale at tip of spoon.		10'
11							
12					Terminated soil boring at 11.3 feet bgs.	11.3'	

**SAMPLING METHOD**  
 SS = SPLIT SPOON  
 A = AUGER CUTTINGS  
 C = CORED

**COMMENTS:**  
 Collected soil samples 134018 (0'-2') bgs and 134019 (6'-8') bgs for B/N/A SVOCs, TAL Metals, Cyanide, and Nitrate analysis.  
 Installed 2-inch monitoring well.

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

## PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW-13-12</u>
PROJECT: <u>10SWMU</u>		PROJECT NO: <u>736994</u>	
LOCATION: <u>SBAD13</u>		INSPECTOR: <u>Ed Ashton</u>	
		CHECKED BY: <u>Ed Ashton</u>	
DRILLING CONTRACTOR: <u>STB, Inc.</u>	POW DEPTH: <u>11.3'</u>		
DRILLER: <u>John Warner</u>	INSTALLATION STARTED: <u>8/15/01 @ 1000</u>		
DRILLING COMPLETED: <u>8/15/01</u>	INSTALLATION COMPLETED: <u>8/15/01 @ 1306</u>		
BORING DEPTH: <u>11.3'</u>	SURFACE COMPLETION DATE: <u>8/17/01</u>		
DRILLING METHOD(S): <u>HSA</u>	COMPLETION CONTRACTOR/CREW: <u>STB, Inc.</u>		
BORING DIAMETER(S): <u>8 1/2" - in</u>	BEDROCK CONFIRMED (Y/N?): _____		
ASSOCIATED SWMU/AOC: <u>13</u>	ESTIMATED GROUND ELEVATION: _____		

## PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" steel    LENGTH: 3.5'    TOR: \_\_\_\_\_

## RISER:

TOC: \_\_\_\_\_    TYPE: PVC 40    DIAMETER: 2"    LENGTH: \_\_\_\_\_

## SCREEN:

TSC: 2'    TYPE: PVC 40    DIAMETER: 2"    LENGTH: 7.3'    SLOT SIZE: 0.01"

## POINT OF WELL: (SILT SUMP)

YPE: PVC Point    BSC: 9.3'    POW: 10.0'

## GROUT:

TG: Ground    TYPE: Cement-Bent.    LENGTH: 1.0'

## SEAL:

TBS: 1.0'    TYPE: Bent. pellets    LENGTH: 0.75'

## SAND PACK:

TSP: 1.75'    TYPE: #0    LENGTH: 9.85'

## SURFACE COLLAR:

TYPE: \_\_\_\_\_    RADIUS: 2' x 2'    THICKNESS CENTER: 1'    THICKNESS EDGE: 1'

## CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_    DEPTH 2: \_\_\_\_\_    DEPTH 3: \_\_\_\_\_    DEPTH 4: \_\_\_\_\_

## COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

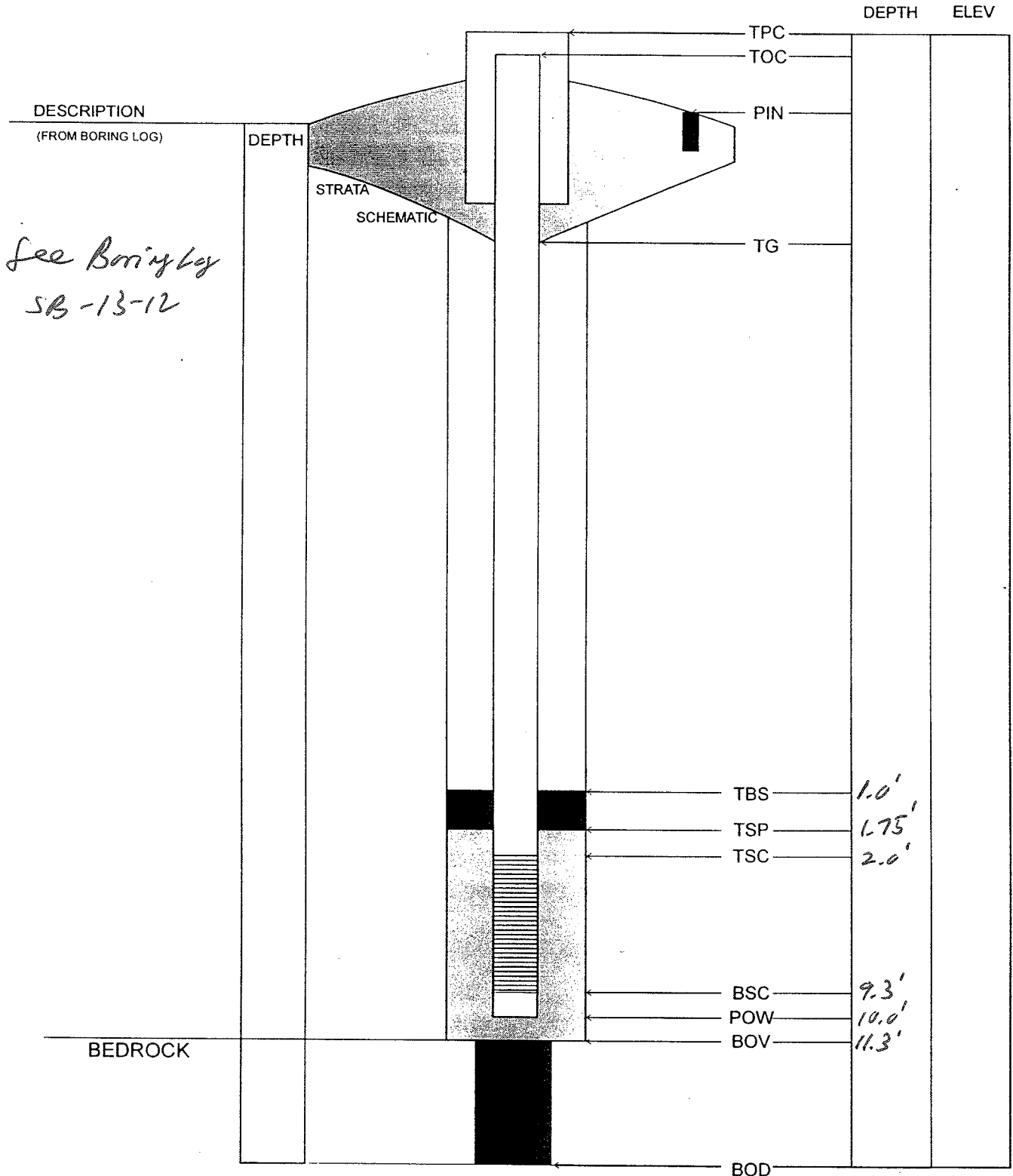
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

PARSONS ENGINEERING SCIENCE, INC.

CLIENT: *ALCOE*

WELL #: *MW-13-12*

DATE: *8/15/01*



<b>Contractor:</b> SJB, Inc. <b>Driller:</b> John Warner <b>Inspector:</b> E. Ashton <b>Rig Type:</b> Mobile	<b>PARSONS ENGINEERING SCIENCE, INC.</b> <b>DRILLING RECORD</b>	<b>BORING/ WELL NO.</b> SB-13-13/MW-13-13 Sheet # 1 of 1 #
	<b>PROJECT NAME:</b> Seneca Army Depot-SEAD-13 <b>PROJECT NUMBER</b> 736994	<b>Location Description:</b> SEE SITE PLAN

<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> Sunny-70°F	<b>Location Plan</b>
<b>Water Level</b> 5.80' 8.10' 9.15 <b>Date</b> 8/17/01 8/22/01 9/04/01 <b>Time</b> 0815 0955 1121 <b>Meas. From</b> TOC TOC TOC	<b>Date/Time Start:</b> 8/15/01-1420 <b>Date/Time Finish:</b> 8/15/01-1741		SEE SITE PLAN			

Sampl Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHMATIC 2.5'-stick-up	COMMENTS
0	134012 (0-2)	5/9 16/15	50	403	(0'-2') Brown, silt with clay, trace of fine sand, roots, dry. -ML/SC		Grout 0-1'
1	134020 (0-2)						1' 2" PVC Riser
2		2/14 16/21	80	46	(2'-4') Same as above.- ML/SC		Bentonite Pellets 1-3.5'
3							3.5'
4		3/9 16/22	90	43.7	(4'-6') Brown, silt, trace of clay and fine sand, dry.- SC/ML		4.5'
5							
6		4/53 60/67	90	20	(6'-8') Same as above.- SC/ML		Filtered sand (#0) pack-3.5-15'
7							0.010 Slot Sch. 40 PVC Screen-4.5'-14.5'
8	134013 (8-10)	5/13 14/24	80	22	(8'-10') Brown to Grey, clay with silt, trace of fine sand and fine, gravel, dry.-CL/ML		
9							
10		13/37 100/3	50	21	(10'-11.5') Grey, clay with silt, fine to course gravel (weathered shale), wet.-CL/ML		
11					Refusal at 11.5' bgs.		
12					Note: Drilled to 15' bgs with HSAs.		
13							
14							
15					Terminated soil boring at 15 feet bgs.		14.5' 15' Sump (14.5-15')

**SAMPLING METHOD**  
 SS - SPLIT SPOON  
 A - AUGER CUTTINGS  
 C - CORED

**COMMENTS:**  
 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

*13*

PARSONS ENGINEERING SCIENCE, INC. CLIENT: ACOE WELL #: MW-13-X

PROJECT: 10 SWMU PROJECT NO: 736994  
 LOCATION: SEA 013 INSPECTOR: Ed Ashton  
 CHECKED BY: Ed Ashton

DRILLING CONTRACTOR: SJB, Inc. POW DEPTH: 15'  
 DRILLER: John Warner INSTALLATION STARTED: 8/15/01 @ 1420  
 DRILLING COMPLETED: 8/15/01 INSTALLATION COMPLETED: 8/15/01 @ 1741  
 BORING DEPTH: 15' SURFACE COMPLETION DATE: 8/17/01  
 DRILLING METHOD(S): HSA COMPLETION CONTRACTOR/CREW: SJB  
 BORING DIAMETER(S): 8 1/2" BEDROCK CONFIRMED (Y/N?): \_\_\_\_\_  
 ASSOCIATED SWMU/AOC: 13 ESTIMATED GROUND ELEVATION: \_\_\_\_\_

PROTECTIVE SURFACE CASING:  
 DIAMETER: 4" x 4" steel LENGTH: 3.5' TOR: \_\_\_\_\_

RISER:  
 TOC: \_\_\_\_\_ TYPE: PVC 40 DIAMETER: 2" LENGTH: \_\_\_\_\_

SCREEN:  
 TSC: 4.5' TYPE: PVC 40 DIAMETER: 2" LENGTH: 10' SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)  
 YPE: PVC Point BSC: 14.5' POW: 15'

GROUT:  
 TG: Gravel TYPE: Cement-Best. LENGTH: 1.0'

SEAL:  
 TBS: 1.0' TYPE: Best. pellets LENGTH: 2.5'

SAND PACK:  
 TSP: 3.5' TYPE: #0 LENGTH: 11.5'

SURFACE COLLAR:  
 TYPE: \_\_\_\_\_ RADIUS: 2' x 2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

CENTRALIZER DEPTHS  
 DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

*CAF*

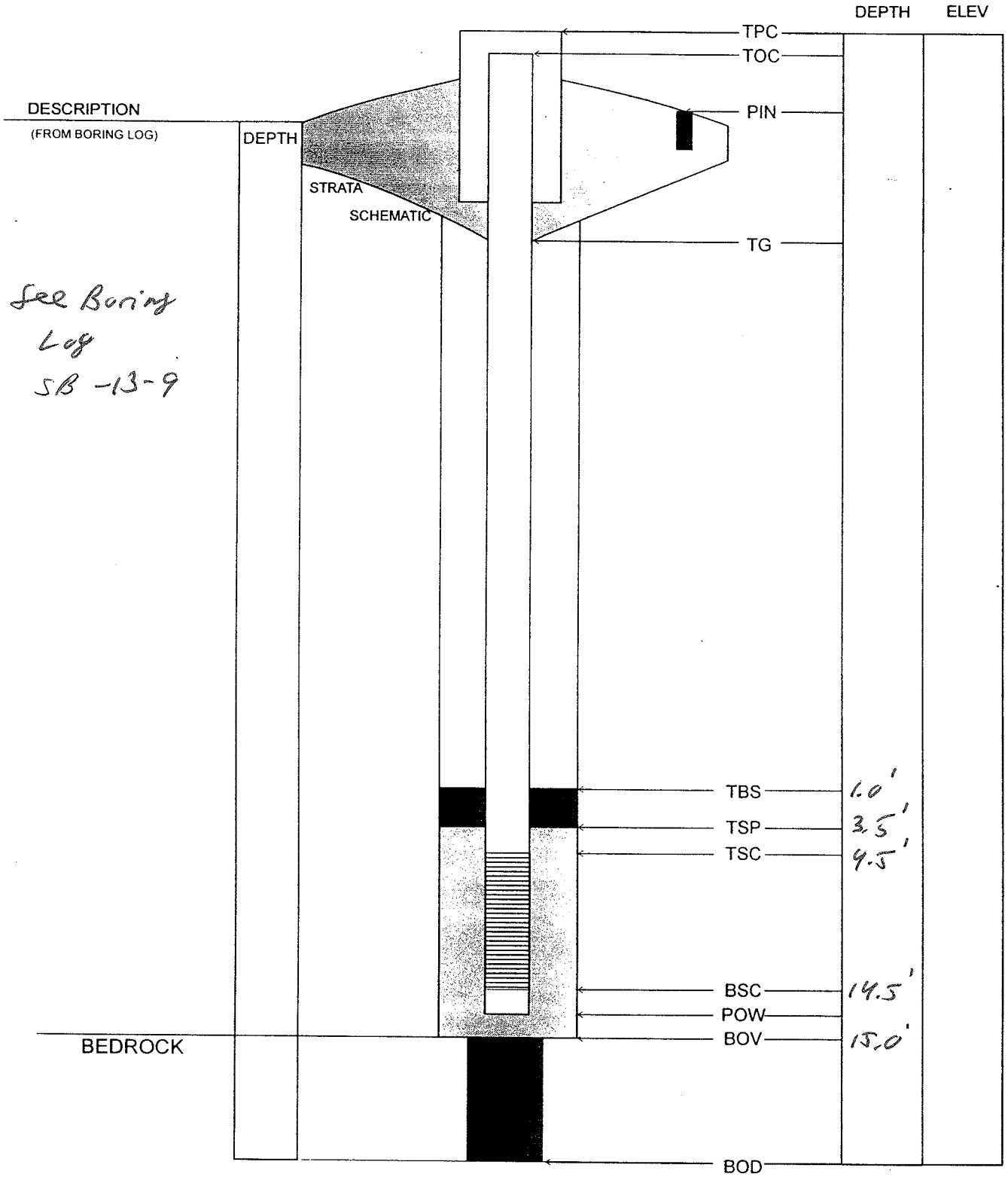
PARSONS ENGINEERING SCIENCE, INC.

CLIENT:

*ACOE*

WELL #: *MW-13-93*

DATE: *8/15/01*



well.cad  
General Forming

<b>Contractor:</b> <u>SJB, Inc.</u> <b>Driller:</b> <u>John Warner</u> <b>Inspector:</b> <u>E. Ashton</u> <b>Rig Type:</b> <u>Mobile</u>	<b>PARSONS ENGINEERING SCIENCE, INC.</b> <b>DRILLING RECORD</b>	<b>BORING/ WELL NO.</b> <u>SB-13-14/MW-13-14</u> <b>Location Description:</b> <u>SEE SITE PLAN</u>
<b>PROJECT NAME:</b> <u>Seneca Army Depot-SEAD-13</u> <b>PROJECT NUMBER:</b> <u>736994</u>		Sheet # <u>1</u> of <u>1</u> #

<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> <u>Cloudy-70°F</u>	<b>Location Plan</b>
Water Level	Dry	Dry	Dry		<b>Date/Time Start:</b> <u>8/16/01-1404</u>	SEE SITE PLAN
Date	8/17/01	8/22/01	9/04/01		<b>Date/Time Finish:</b> <u>8/16/01-1711</u>	
Time	0820	1000	1136			
Meas. From	TOC	TOC	TOC			

Sampl Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC 2.5'-stick-up	COMMENTS
0	134014	7/17	50	383	(0'-2') Brown, silt, fine sand, trace of clay, roots, dry.-ML/SC		Grout 0-1'
1	(0-2)	10/16					1' 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							3.5'
4		21/41	50	55	(4'-5.4') Brown, silt, fine to medium gravel (weathered shale), fine sand, trace of clay, dry.-ML/SC		4.5'
5		100/4			Refusal at 5.4' bgs. Drilled with HSAs to 6' bgs.		
6		10/26	80	50.1	(6'-8') Brown to light Grey, silt, fine sand, clay, fine to medium gravel (weathered shale), dry.-ML/SC	←	Filtered sand (#0 pack-3.5-15'
7		66/82				←	0.010 Slot Sch. 40 PVC Screen-4.5'-14.5'
8		19/	10	80	(8'-9') Same as above.-ML/SC		
9		100/4			Refusal at 9' bgs. Drilled with HSAs to 10' bgs.		
10	134015	27/52	50	90	(10'-11.5') Same as above.-ML/SC		
11	(10-11.5)	103			Refusal at 11.5' bgs. Note: Drilled to 15' bgs with HSAs.		
12							
13							
14							
15							14.5' 15' Sump (14.5-15')
					Terminated soil boring at 15 feet bgs.		

<b>SAMPLING METHOD</b>  SS = SPLIT SPOON  A = AUGER CUTTINGS  C = CORED	<b>COMMENTS:</b> Collected soil samples 134014 (0'-2') bgs and 134015 (10'-11.5') bgs for B/N/A SVOCs, TAL Metals, Cyanide, and Nitrate analysis. Installed 2-inch monitoring well. In field notebook as SB/MW13-10 for work during August and September 2001.
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# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

## PROTECTIVE RISER COMPLETION

PARSONS ENGINEERING SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW-13-10</u>	
PROJECT: <u>10 SWMU</u>		PROJECT NO: <u>736 944</u>		
LOCATION: <u>SEAD 13</u>		INSPECTOR: <u>Ed Ashton</u>		
		CHECKED BY: <u>Ed Ashton</u>		
DRILLING CONTRACTOR: <u>SJB, Inc.</u>		POW DEPTH: <u>15'</u>		
DRILLER: <u>John Warner</u>		INSTALLATION STARTED: <u>8/16/01 c 1909</u>		
DRILLING COMPLETED: <u>8/16/01</u>		INSTALLATION COMPLETED: <u>8/16/01 c</u>		
BORING DEPTH: <u>15'</u>		SURFACE COMPLETION DATE: <u>8/17/01</u>		
DRILLING METHOD(S): <u>HSA</u>		COMPLETION CONTRACTOR/CREW: <u>SJB, Inc.</u>		
BORING DIAMETER(S): <u>8 1/2" - 14"</u>		BEDROCK CONFIRMED (Y/N?): _____		
ASSOCIATED SWMU/AOC: <u>13</u>		ESTIMATED GROUND ELEVATION: _____		
PROTECTIVE SURFACE CASING:				
DIAMETER: <u>4" x 4" steel</u>		LENGTH: <u>3.5'</u>		TOR: _____
RISER:				
TOC: _____		TYPE: <u>PVC 40</u>		DIAMETER: <u>2"</u> LENGTH: _____
SCREEN:				
TSC: <u>4.5'</u>		TYPE: <u>PVC 40</u>		DIAMETER: <u>2"</u> LENGTH: <u>10'</u> SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)				
YPE: <u>PVC Point</u>		BSC: <u>14.5'</u>		POW: <u>15'</u>
GROUT:				
TG: <u>Ground</u>		TYPE: <u>Cement-Bent.</u>		LENGTH: <u>1.0'</u>
SEAL: TBS: <u>1.0'</u>		TYPE: <u>Bent. pellets</u>		LENGTH: <u>2.5'</u>
SAND PACK: TSP: <u>3.5'</u>		TYPE: <u>#0</u>		LENGTH: <u>11.5'</u>
SURFACE COLLAR:				
TYPE: _____		RADIUS: <u>2' x 2'</u>		THICKNESS CENTER: <u>1'</u> THICKNESS EDGE: <u>1'</u>
CENTRALIZER DEPTHS				
DEPTH 1: _____		DEPTH 2: _____		DEPTH 3: _____ DEPTH 4: _____
COMMENTS:				

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

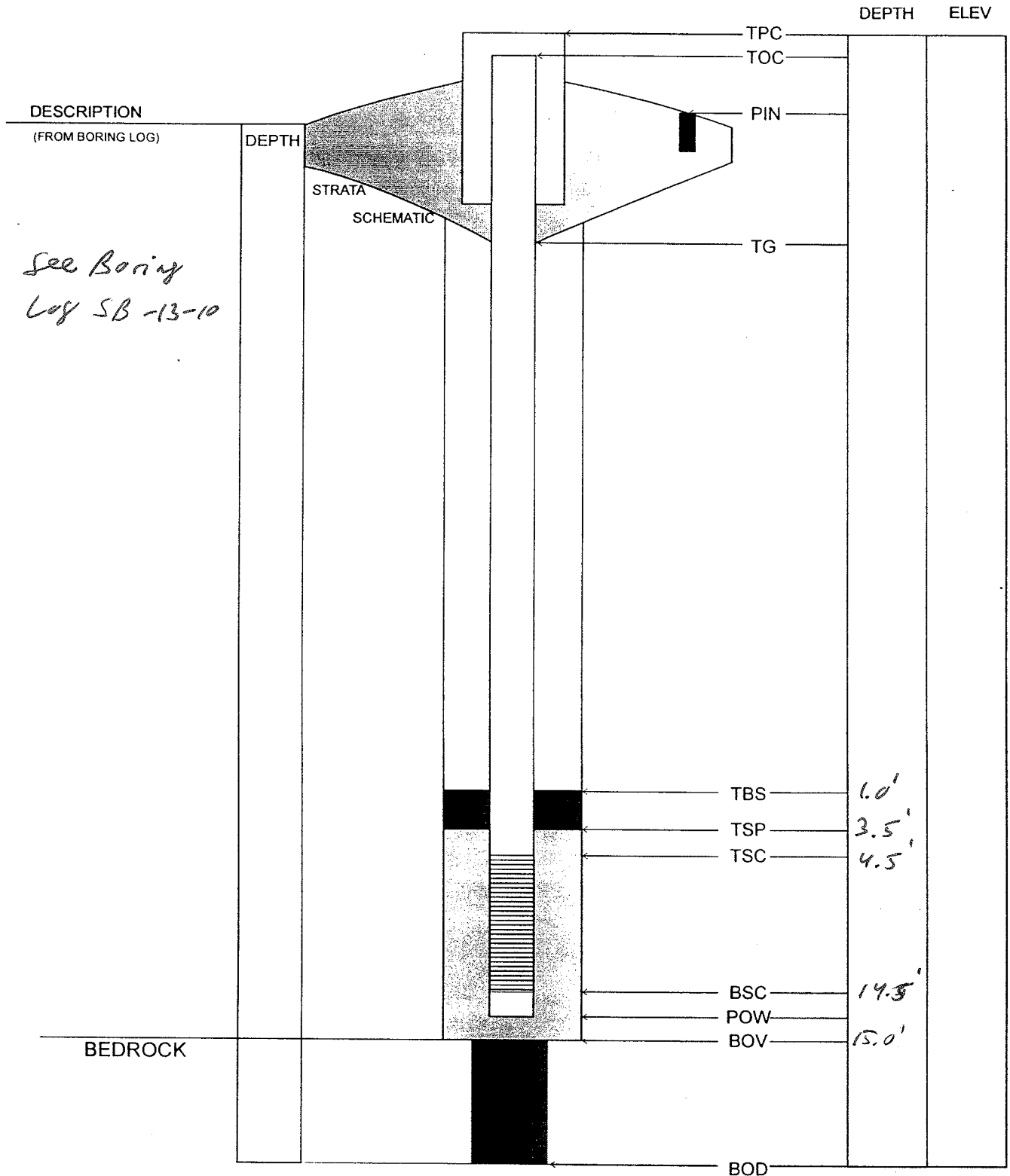
# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

PARSONS ENGINEERING SCIENCE, INC.

CLIENT: *ACOE*

WELL #: *MW-13-10*

DATE: *8/16/01*



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

ENGINEERING-SCIENCE, INC.		CLIENT: <u>ACOE</u>	WELL #: <u>MW24-1</u>	
PROJECT: <u>10 SWMU</u>	LOCATION: <u>SEAD 24</u>		PROJECT NO: <u>SB24-5</u>	INSPECTOR: _____
DRILLING CONTRACTOR: <u>Empire</u>			POW DEPTH: <u>10.0'</u>	
DRILLER: <u>Scott</u>			INSTALLATION STARTED: <u>12-1-93</u>	
DRILLING COMPLETED: <u>12-1-93</u>			INSTALLATION COMPLETED: <u>12-1-93</u>	
BORING DEPTH: <u>10.0'</u>			SURFACE COMPLETION DATE: _____	
DRILLING METHOD(S): <u>HSA</u>			COMPLETION CONTRACTOR/CREW: <u>Empire</u>	
BORING DIAMETER(S): <u>8 1/2"</u>			BEDROCK CONFIRMED (Y/N?): _____	
ASSOCIATED SWMU/AOC: <u>2A</u>			ESTIMATED GROUND ELEVATION: <u>635.374</u>	
PROTECTIVE SURFACE CASING:				
DIAMETER: <u>4" x 4" Steel</u>		LENGTH: _____		
RISER:				
TR: _____	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: _____	
SCREEN:				
TSC: <u>4.9'</u>	TYPE: <u>PVC-40</u>	DIAMETER: <u>2"</u>	LENGTH: <u>4.0'</u>	SLOT SIZE: <u>0.01"</u>
POINT OF WELL: (SILT SUMP)				
TYPE: <u>PVC point</u>	BSC: <u>8.9'</u>	POW: <u>10.0</u>		
GROUT:				
TG: <u>Ground</u>	TYPE: <u>Cement-bentonite</u>	LENGTH: <u>1.5'</u>		
SEAL:	TBS: <u>1.5'</u>	TYPE: <u>bentonite pellets</u>	LENGTH: <u>1.9'</u>	
SAND PACK:	TSP: <u>3.4' #1 3.9' #3</u>	TYPE: <u>#3, #1</u>	LENGTH: <u>6.6'</u>	
SURFACE COLLAR:				
TYPE: <u>Cement</u>	RADIUS: <u>2' x 2'</u>	THICKNESS CENTER: <u>1'</u>	THICKNESS EDGE: <u>1'</u>	
CENTRALIZER DEPTHS				
DEPTH 1: _____	DEPTH 2: _____	DEPTH 3: _____	DEPTH 4: _____	
COMMENTS:				

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2

# OVERBURDEN MONITORING WELL PROTECTIVE RISER INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW24-1

DATE: 12-1-93

TPC 638.047 DEPTH ELEV.

DESCRIPTION

(FROM BORING LOG)

DEPTH

STRATA

SCHEMATIC

TR

637.746

PIN

TG

Top of #3 3.9'  
Top of #1 34'

TBS

1.5'

TSP

3.9'

TSC

4.9'

BSC

8.9'

POW

10.0'

BOV

BEDROCK

BOD

\* NOT TO SCALE

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

ENGINEERING-SCIENCE, INC.	CLIENT: <u>ACOE</u>	WELL #: <u>MW 24-2</u>
PROJECT: <u>10 SWMU</u>	PROJECT NO: _____	
LOCATION: <u>SEAD 24</u>	INSPECTOR: <u>ES/LB</u>	
		CHECKED BY: _____

DRILLING CONTRACTOR: <u>Empire</u>	POW DEPTH: <u>16.0</u>
DRILLER: <u>A1</u>	INSTALLATION STARTED: <u>11/5/93</u>
DRILLING COMPLETED: <u>11/5/93</u>	INSTALLATION COMPLETED: <u>11/6/93</u>
BORING DEPTH: <u>16.0'</u>	SURFACE COMPLETION DATE: _____
DRILLING METHOD(S): <u>BSA</u>	COMPLETION CONTRACTOR/CREW: <u>Empire</u>
BORING DIAMETER(S): <u>8"2"</u>	BEDROCK CONFIRMED (Y/N?): _____
ASSOCIATED SWMU/AOC: <u>24</u>	ESTIMATED GROUND ELEVATION: <u>629.856</u>

## PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel LENGTH: 5.0' total

## RISER:

TR: \_\_\_\_\_ TYPE: PVC 40 DIAMETER: 2" LENGTH: \_\_\_\_\_

## SCREEN:

TSC: 5.9' TYPE: PVC 40 DIAMETER: 1 1/2" LENGTH: 9.0' SLOT SIZE: 0.01"

## POINT OF WELL: (SILT SUMP)

TYPE: PVC point BSC: 14.9' POW: 16.0

## GROUT:

TG: Ground TYPE: Cem-bentonite LENGTH: 3.0'SEAL: TBS: 3.0 TYPE: Bentonite pellets LENGTH: 1.4'SAND PACK: TSP: 4A #1 4.9-#3 TYPE: #3 and #1 LENGTH: 11.6'

## SURFACE COLLAR:

TYPE: Cement RADIUS: 2' x 2' THICKNESS CENTER: 1' THICKNESS EDGE: 1'

## CENTRALIZER DEPTHS

DEPTH 1: \_\_\_\_\_ DEPTH 2: \_\_\_\_\_ DEPTH 3: \_\_\_\_\_ DEPTH 4: \_\_\_\_\_

## COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

PAGE 1 OF 2



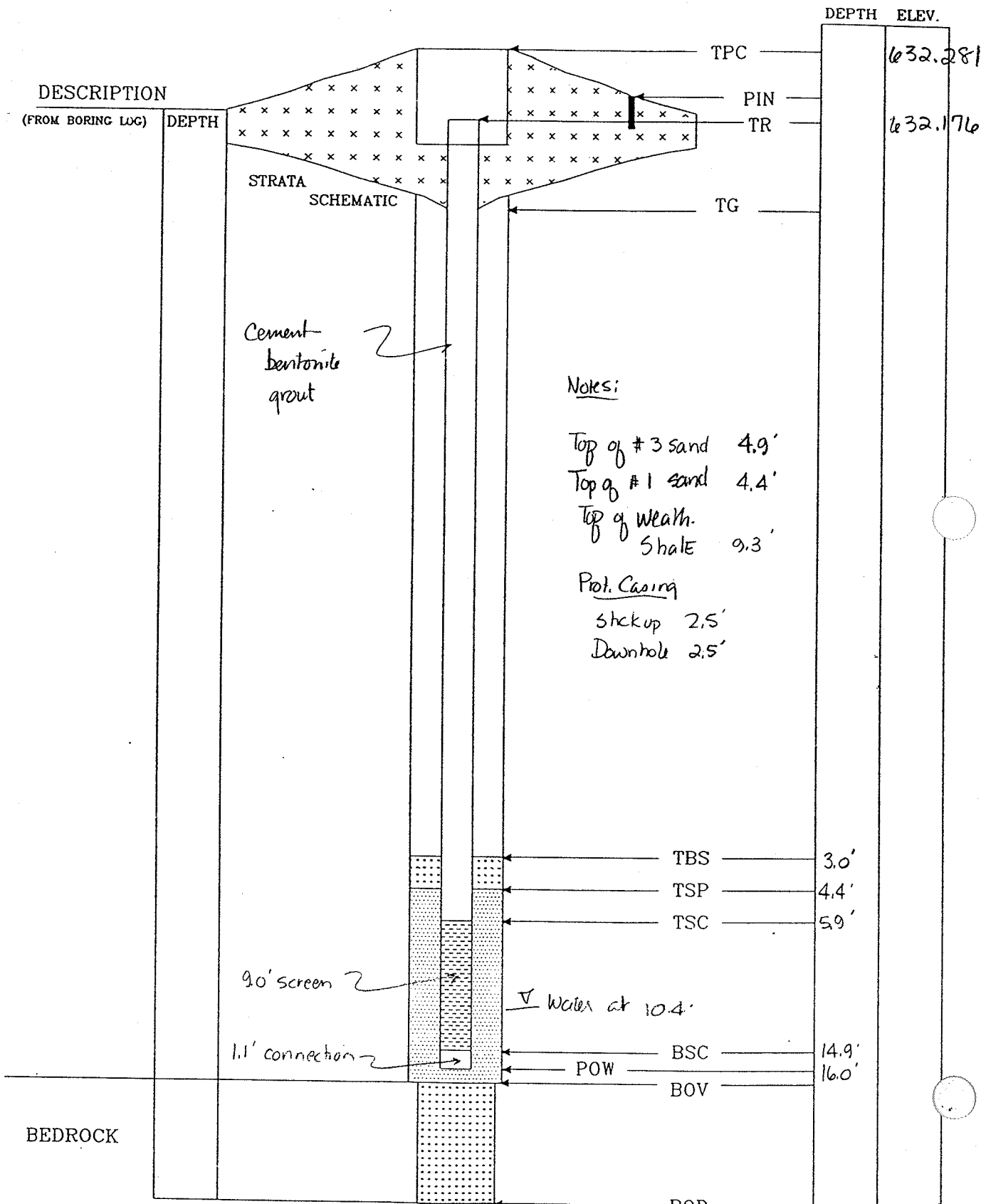
# OVERBURDEN MONITORING WELL ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW24-2

DATE:



Notes:

Top of #3 sand 4.9'  
 Top of #1 sand 4.4'  
 Top of Weath. Shale 9.3'

Prot. Casing

Stickup 2.5'  
 Downhole 2.5'

Cement bentonite grout

90' screen

1.1' connection

BEDROCK

All depths measured to ground surface

\* NOT TO SCALE

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

ENGINEERING-SCIENCE, INC. CLIENT:		WELL #: MW 24-3
PROJECT: 10 SWMU	PROJECT NO: SB	
LOCATION: SEAD 24	INSPECTOR: ES	
		CHECKED BY:

DRILLING CONTRACTOR: Empire	POW DEPTH: 15.0'
DRILLER: AI	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): 8 1/2"	BEDROCK CONFIRMED (Y/N?):
ASSOCIATED SWMU/AOC: 24	ESTIMATED GROUND ELEVATION: 629.080

PROTECTIVE SURFACE CASING:

DIAMETER: 4" x 4" Steel      LENGTH: 5.0' total

RISER:

TR:                      TYPE: PVC 40                      DIAMETER: 2"      LENGTH:

SCREEN:

TSC: 4.9'                      TYPE: PVC 40                      DIAMETER: 1 1/2"      LENGTH: 9'                      SLOT SIZE: 0.01"

POINT OF WELL: (SILT SUMP)

TYPE: PVC point                      BSC: 13.9'                      POW: 15.0'

GROUT:

TG: Ground                      TYPE: Cem-bentonite                      LENGTH: 28'

SEAL:

TBS: 2.8'                      TYPE: Bentonite pellets                      LENGTH: .6'

SAND PACK:

TSP: 3.0' - #1  
3.4' #3                      TYPE: #3 & #1 Silica                      LENGTH: 11.6'

SURFACE COLLAR:

TYPE: Cement                      RADIUS: 2' x 2'                      THICKNESS CENTER: 1'                      THICKNESS EDGE: 1'

CENTRALIZER DEPTHS

DEPTH 1:                      DEPTH 2:                      DEPTH 3:                      DEPTH 4:

COMMENTS:

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

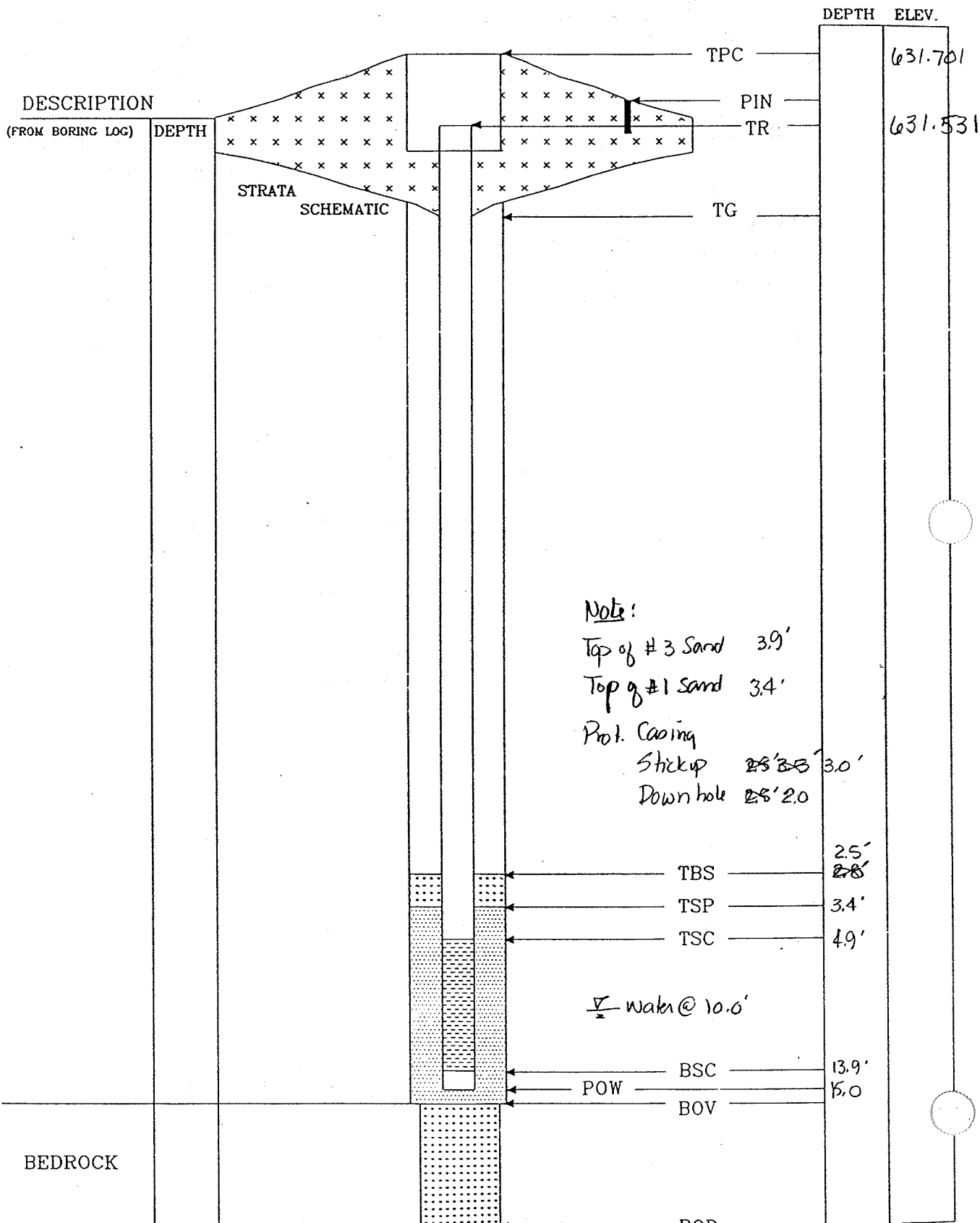
OVERBURDEN MONITORING WELL  
ROADWAY BOX INSTALLATION DETAIL

ENGINEERING-SCIENCE, INC.

CLIENT:

WELL #: MW24-3

DATE: \_\_\_\_\_



DESCRIPTION  
(FROM BORING LOG)

DEPTH

DEPTH ELEV.

STRATA  
SCHEMATIC

*Note:*

Top of #3 Sand 3.9'

Top of #1 Sand 3.4'

Prot. Casing

Stickup ~~25' 2.8~~ 3.0'

Down hole ~~25' 2.0~~

TBS 25' ~~2.8~~

TSP 3.4'

TSC 4.9'

∇ water @ 10.0'

BSC 13.9'

POW 15.0'

BOV

BEDROCK

BOD

Note: All depths measured from ground surface

\* NOT TO SCALE

# 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):** 998032.1 751123.1  
**DRILLING CONTRACTOR:** Empire Soils Investigation, Inc.  
**DRILLING METHOD:** Hollow Stem Auger  
**WELL INSTALLATION STARTED:** 12/03/93  
**WELL INSTALLATION COMPLETED:** 12/03/93

**GROUND SURFACE ELEVATION:** 740.3  
**DATUM:** NGVD 88  
**GEOLOGIST:** E. Schacht  
**CHECKED BY:** P.Feschbach-Meriney  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																																																																
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																																																																						
				2.7	TPC	737.6	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Square Box Riser Interval: 2.98 feet																																																																
				2.7	TR	737.6																																																																	
					TC																																																																		
				0.0	GS	740.3																																																																	
FL	0			1.3	TBS	739.0	<b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: NA																																																																
				2.0	TSP	738.3																																																																	
				3.1	TSC	737.2	<b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 1 foot																																																																
WS				4.1	BSC	736.2																																																																	
	5.0			5.0	POW	735.3	<b>SURFACE SEAL</b> Type: CEMENT Interval: NA  <b>GROUT</b> Type: CEMENT-BENTONITE Interval: 1.3 feet  <b>SEAL</b> Type: BENTONITE Interval: 0.7 feet  <b>SANDPACK</b> Type: #1 and #3 Interval: 3.0 feet																																																																
CS	5																																																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">WELL DEVELOPMENT DATA</th> <th colspan="4">WATER LEVELS</th> </tr> <tr> <th>Date</th> <th>Method</th> <th>Duration</th> <th>Rate</th> <th>Date</th> <th>Time</th> <th>Depth</th> <th>TR</th> </tr> </thead> <tbody> <tr> <td>1/8/94</td> <td>Bail &amp; Pump</td> <td>1 Day</td> <td>1.5 L/minute</td> <td>1/8/94</td> <td>1420</td> <td>5.95 ft</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>1/8/94</td> <td>1440</td> <td>6.20 ft</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>1/8/94</td> <td>1500</td> <td>6.60 ft</td> <td></td> </tr> <tr> <td colspan="8">Final Measurements:</td> </tr> <tr> <td>pH</td> <td>Temperature (degrees C)</td> <td>Conductivity (micromhos/cm)</td> <td colspan="5">Turbidity (NTU)</td> </tr> <tr> <td>7.00</td> <td>4</td> <td>600</td> <td colspan="5">4.44</td> </tr> </tbody> </table>							WELL DEVELOPMENT DATA				WATER LEVELS				Date	Method	Duration	Rate	Date	Time	Depth	TR	1/8/94	Bail & Pump	1 Day	1.5 L/minute	1/8/94	1420	5.95 ft						1/8/94	1440	6.20 ft						1/8/94	1500	6.60 ft		Final Measurements:								pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)					7.00	4	600	4.44					
WELL DEVELOPMENT DATA				WATER LEVELS																																																																			
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<b>LEGEND</b>		GRAVEL SAND SILT CLAY NO RECOVERY	SURFACE SEAL GROUT SEAL SANDPACK	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL																																																																			



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW25-1**

# COMPLETION REPORT OF WELL No. MW25-2

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>743.8</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>998023.1 750973.4</b>	GEOLOGIST: <b>E. Schacht</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>11/07/93</b>	
WELL INSTALLATION COMPLETED: <b>11/07/93</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS		
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)							
				2.6	TPC	741.1	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>2.84 feet</b>	
				2.6	TR	741.1		
				0.0	TC			
				0.0	GS	743.8		
TL	0			1.2	TBS	742.6	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>NA</b>	
				2.0	TSP	741.8		<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4 feet</b>
				3.4	TSC	740.4		
				5				
WS CS	5			7.4	BSC	736.4	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>	
				8.5				
				8.5	POW	735.3	<b>GROUT</b> Type: <b>CEMENT-BENTONITE</b> Interval: <b>1.2 feet</b>	
							<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>0.8 feet</b>	
							<b>SANDPACK</b> Type: <b>#1 and #3</b> Interval: <b>6.5 feet</b>	
<b>WELL DEVELOPMENT DATA</b>						<b>WATER LEVELS</b>		
Date: <b>11/11/93</b>						Date	Time	
Method: <b>Bail &amp; Pump</b>						11/11/93	1015	
Duration: <b>11 Days</b>						11/11/93	1430	
Rate: <b>0.513 L/minute</b>						11/21/93	4.68 ft	
						11/22/93	1450	
Final Measurements:						TD	4.74 ft	
pH	Temperature (degrees C)	Conductivity (micromhos/cm)					Turbidity (NTU)	
7.19	12	700					1.23	
<b>LEGEND</b>								
	SURFACE SEAL		GRAVEL	TPC	TOP OF PROTECTIVE CASING			
	GROUT		SAND	TR	TOP OF WELL RISER			
	SEAL		SILT	GS	GROUND SURFACE			
	SANDPACK		CLAY	TBS	TOP BENTONITE SEAL			
			NO RECOVERY	TSP	TOP OF SANDPACK			
				TSC	TOP OF SCREEN			
				BSC	BOTTOM OF SCREEN			
				TD	TOTAL DEPTH			
				POW	POINT OF WELL			



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

## COMPLETION REPORT OF WELL No. MW25-2

# 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  
**DRILLING CONTRACTOR:** Empire Soils Investigation, Inc.  
**DRILLING METHOD:** Hollow Stem Auger  
**WELL INSTALLATION STARTED:** 11/07/93  
**WELL INSTALLATION COMPLETED:** 11/07/93

**GROUND SURFACE ELEVATION:** 743.3  
**DATUM:** NGVD 88  
**GEOLOGIST:** E. Schacht  
**CHECKED BY:** P.Feschbach-Meriney  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)						
				2.6	TPC	740.7	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Square Box Riser Interval: 2.55 feet
				2.5	TR	740.7	
					TC		
				0.0	GS	743.3	
TL	0			1.5	TBS	741.8	<b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: NA
				2.5	TSP	740.8	
WS						4.0	TSC
CS	5			6.0	BSC	737.3	<b>GROUT</b> Type: CEMENT-BENTONITE Interval: 1.5 feet
	6.5			6.5	POW	736.8	
							<b>SANDPACK</b> Type: #1 and #3 Interval: 4.0 feet
				<b>WELL DEVELOPMENT DATA</b>		<b>WATER LEVELS</b>	
				Date:	11/9/93	Date	11/9/93
				Method:	Bail & Pump	Time	1345
				Duration:	2 Days	Depth, TR	4.80 ft
				Rate:	1.0 L/minute		1405
							0930
							1045
							1410
							7.70 ft
				Final Measurements:			
				pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
				7.42	12.2	500	1.73
<b>LEGEND</b>			GRAVEL	TPC	TOP OF PROTECTIVE CASING		
	SURFACE SEAL		SAND	TR	TOP OF WELL RISER		
	GROUT		SILT	GS	GROUND SURFACE		
	SEAL		CLAY	TBS	TOP BENTONITE SEAL		
	SANDPACK		NO RECOVERY	TSP	TOP OF SANDPACK		
				TSC	TOP OF SCREEN		
				BSC	BOTTOM OF SCREEN		
				TD	TOTAL DEPTH		
				POW	POINT OF WELL		



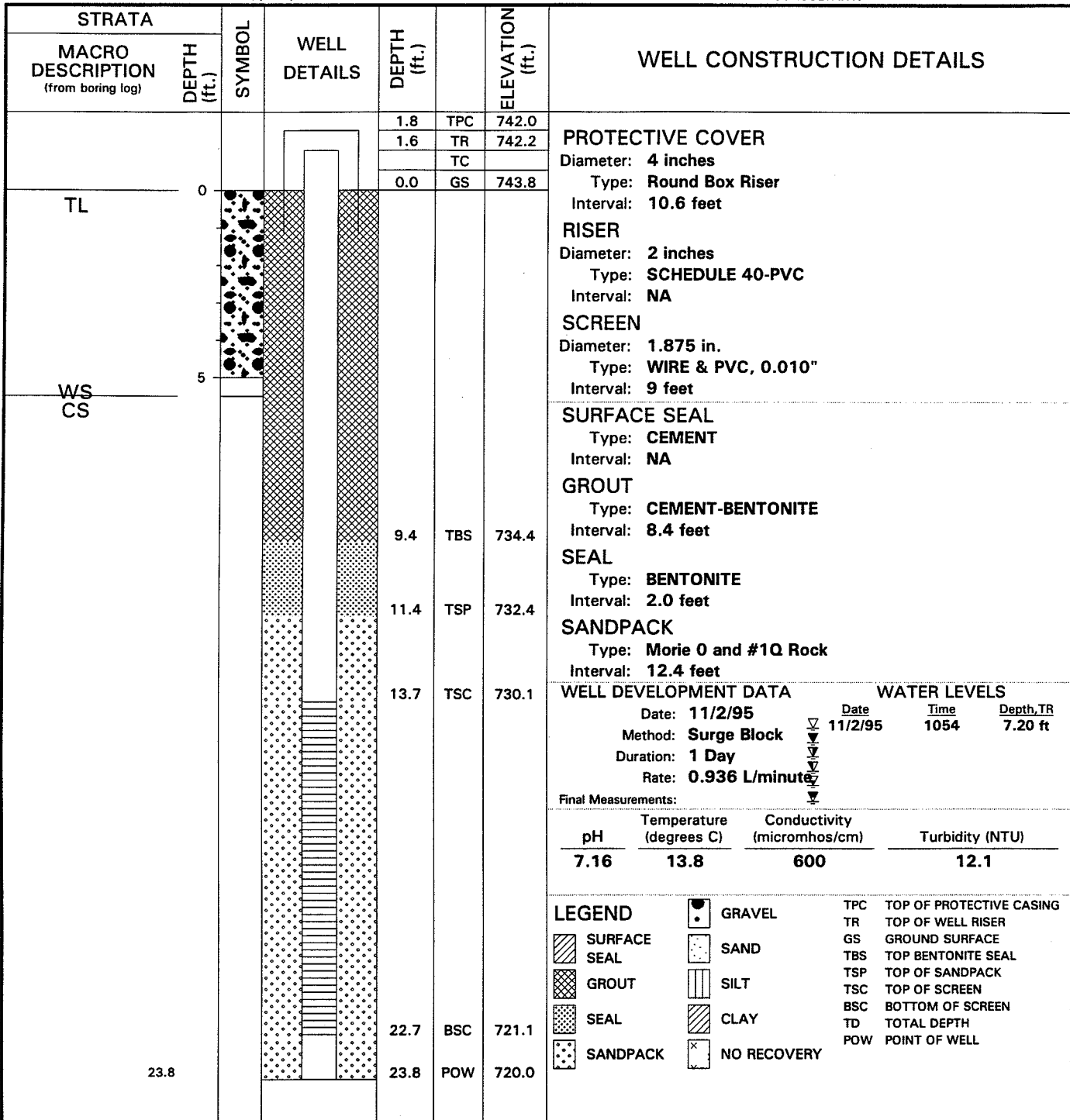
**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW25-4D

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>743.8</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>998022.1 750983.2</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Rock Coring</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>10/31/95</b>	
WELL INSTALLATION COMPLETED: <b>10/31/95</b>	



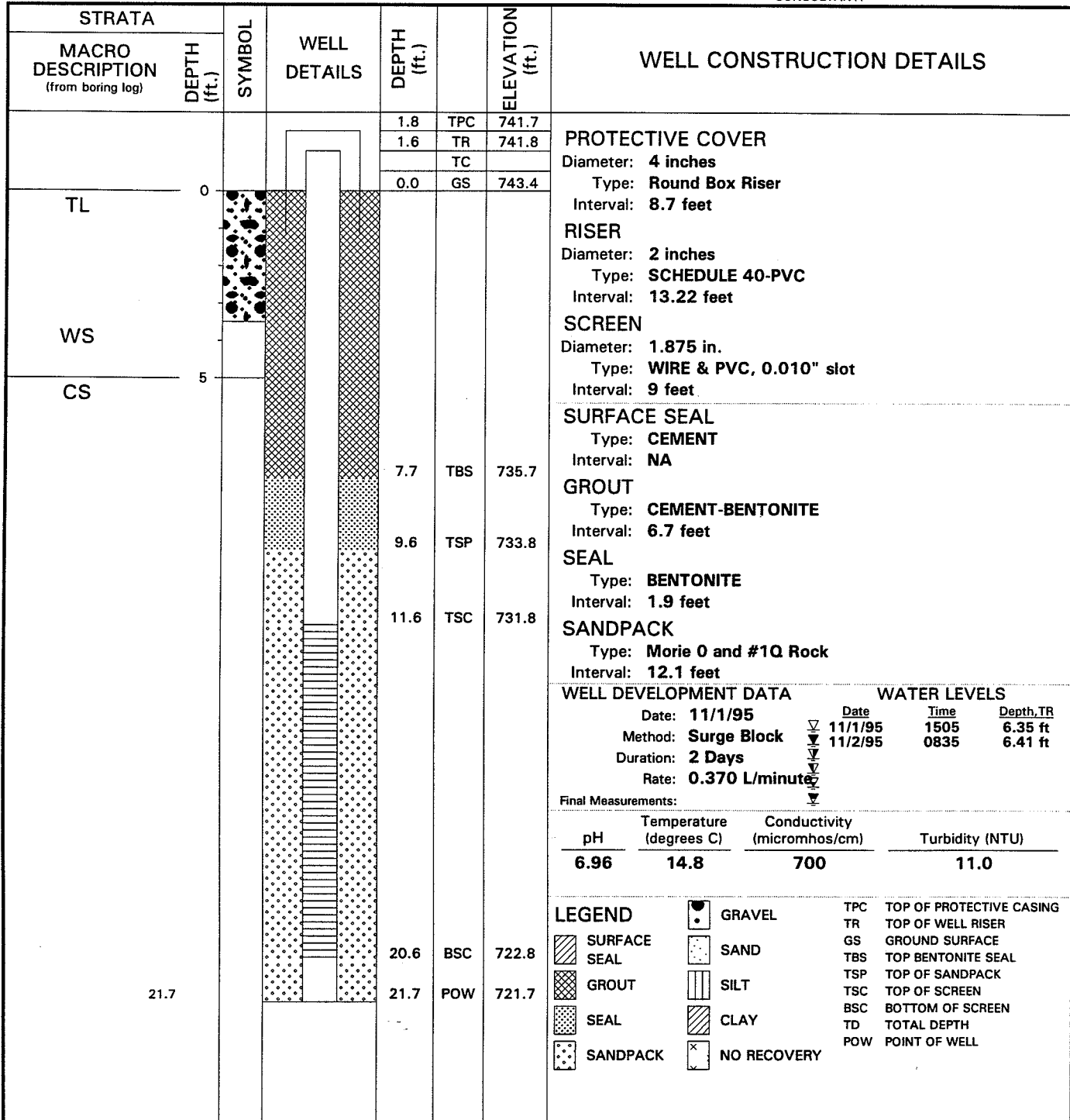
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Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW25-4D**

# COMPLETION REPORT OF WELL No. MW25-5D

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>743.4</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>998080.2 750937.0</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Rock Coring</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>10/30/95</b>	
WELL INSTALLATION COMPLETED: <b>10/30/95</b>	



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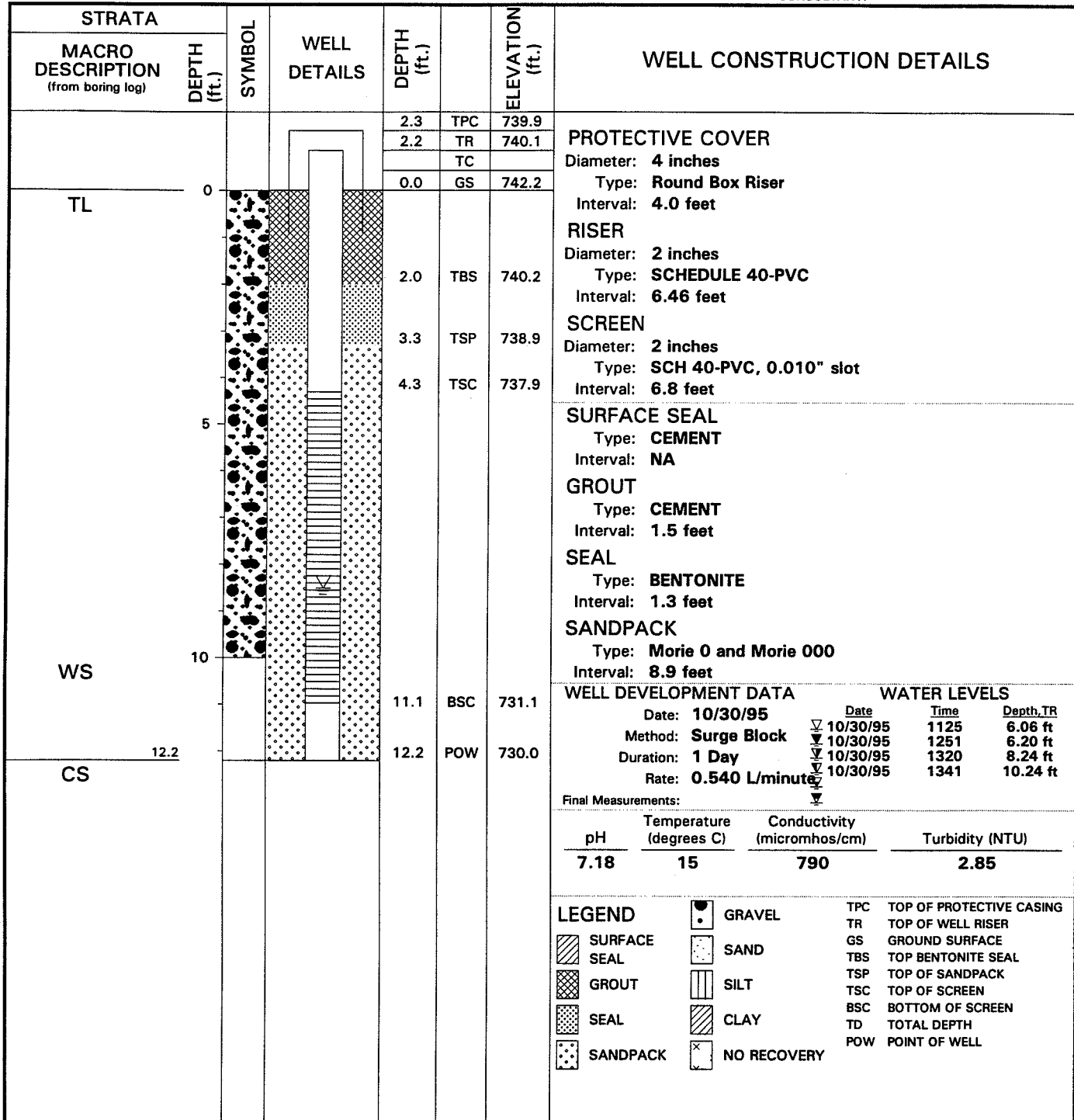
## COMPLETION REPORT OF WELL No. MW25-5D



# 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**  
 WELL INSTALLATION COMPLETED: **09/26/95**

GROUND SURFACE ELEVATION: **742.2**  
 DATUM: **NGVD 88**  
 GEOLOGIST: **F. O'Loughlin**  
 CHECKED BY: **P.Feschbach-Meriney**  
 CONSULTANT:



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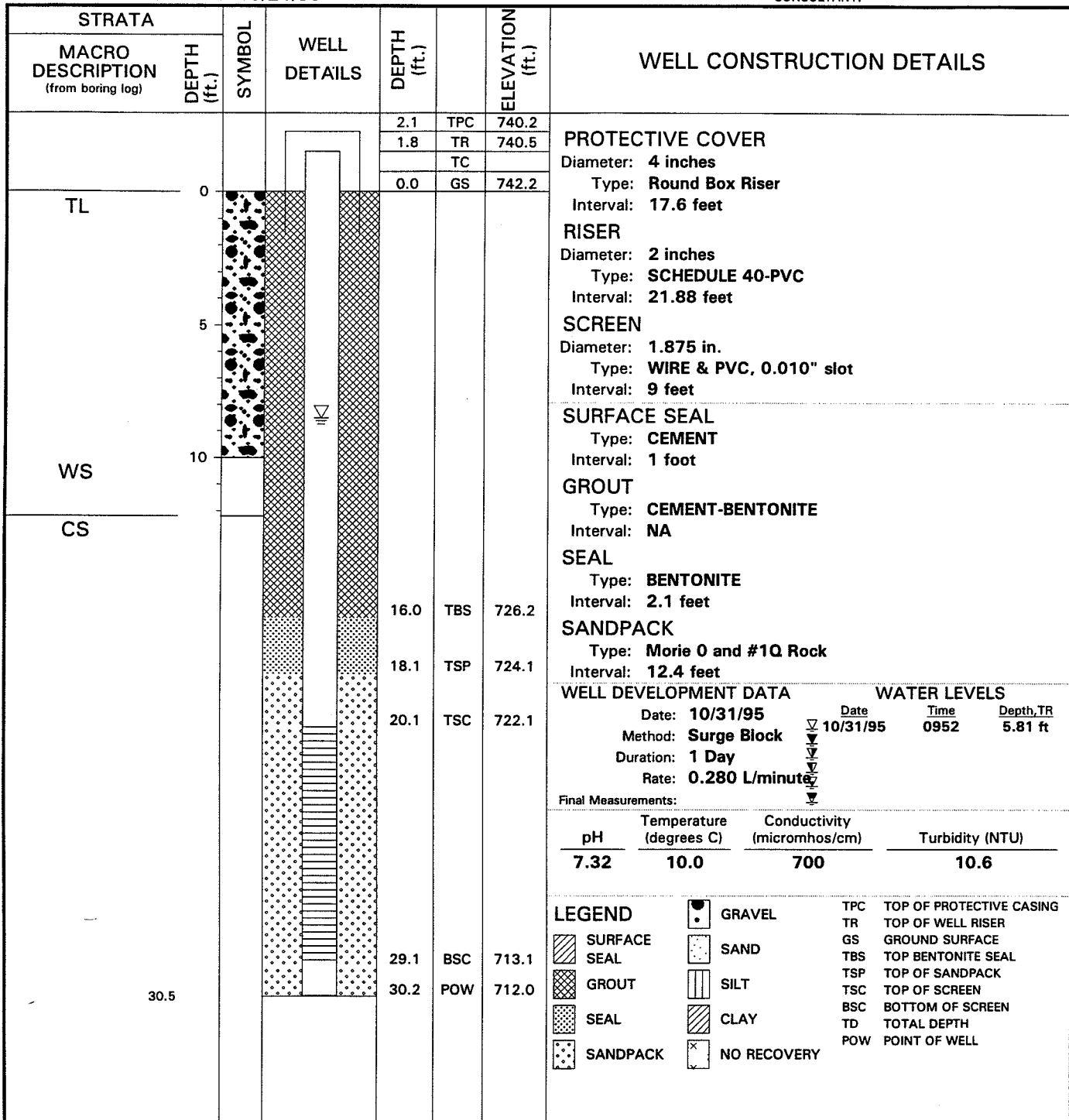
Seneca Army Depot  
 Romulus, New York

COMPLETION REPORT OF  
 WELL No. MW25-6

# 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**  
 DRILLING CONTRACTOR: **Empire Soils Investigation, Inc.**  
 DRILLING METHOD: **Rock Coring**  
 WELL INSTALLATION STARTED: **10/24/95**  
 WELL INSTALLATION COMPLETED: **10/24/95**

GROUND SURFACE ELEVATION: **742.2**  
 DATUM: **NGVD 88**  
 GEOLOGIST: **F. O'Loughlin**  
 CHECKED BY: **P.Feschbach-Meriney**  
 CONSULTANT:



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW25-8

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>741.4</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>998076.8 750856.9</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/26/95</b>	
WELL INSTALLATION COMPLETED: <b>09/26/95</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)						
				1.3	TPC	740.1	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Round Box Riser</b> Interval: <b>2.50 feet</b>
				1.1	TR	740.2	
					TC		
				0.0	GS	741.4	
TL	0			1.4	TBS	740.0	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>4.34 feet</b>
				2.4	TSP	739.0	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>0.8 feet</b>
WS				3.2	TSC	738.2	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>
				4.0	BSC	737.4	
CS	4.5			4.5	POW	736.9	
							<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>
							<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.0 foot</b>
							<b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>2.1 feet</b>
				<b>WELL DEVELOPMENT DATA</b>		<b>WATER LEVELS</b>	
				Date: <b>10/22/95</b>	Date	Time	Depth, TR
				Method: <b>Surge Block</b>	10/20/95	1624	3.32 ft
				Duration: <b>3 Days</b>	10/20/95	1700	4.80 ft
				Rate: <b>0.900 L/minute</b>	10/22/95	1004	1.26 ft
					10/22/95	1056	1.32 ft
				Final Measurements:			
		pH	Temperature (degrees C)	Conductivity (micromhos/cm)		Turbidity (NTU)	
		7.35	14.5	350		7.3	
<b>LEGEND</b>			GRAVEL	TPC	TOP OF PROTECTIVE CASING		
			SURFACE SEAL	TR	TOP OF WELL RISER		
			GROUT	GS	GROUND SURFACE		
			SEAL	TBS	TOP BENTONITE SEAL		
			SANDPACK	TSP	TOP OF SANDPACK		
			SILT	TSC	TOP OF SCREEN		
			CLAY	BSC	BOTTOM OF SCREEN		
			NO RECOVERY	TD	TOTAL DEPTH		
				POW	POINT OF WELL		



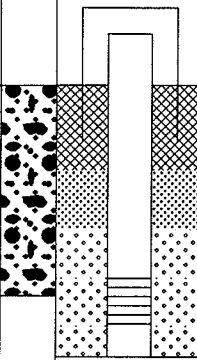
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Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW25-8**

# COMPLETION REPORT OF WELL No. MW25-9

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>741.3</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>998005.3 750898.1</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/26/95</b>	
WELL INSTALLATION COMPLETED: <b>09/26/95</b>	

STRATA	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
				1.3	TPC	740.0
				1.1	TR	740.2
					TC	
				0.0	GS	741.3
TL	0			1.4	TBS	739.9
				2.4	TSP	738.9
				3.2	TSC	738.1
WS				4.0	BSC	737.3
	4.8			4.5	POW	736.8
CS						

<b>PROTECTIVE COVER</b>	
Diameter:	<b>4 inches</b>
Type:	<b>Round Box Riser</b>
Interval:	<b>2.57 feet</b>
<b>RISER</b>	
Diameter:	<b>2 inches</b>
Type:	<b>SCHEDULE 40-PVC</b>
Interval:	<b>4.27 feet</b>
<b>SCREEN</b>	
Diameter:	<b>2 inches</b>
Type:	<b>SCH 40-PVC, 0.010" slot</b>
Interval:	<b>0.8 feet</b>
<b>SURFACE SEAL</b>	
Type:	<b>CEMENT</b>
Interval:	<b>NA</b>
<b>GROUT</b>	
Type:	<b>NA</b>
Interval:	<b>NA</b>
<b>SEAL</b>	
Type:	<b>BENTONITE</b>
Interval:	<b>1.0 foot</b>
<b>SANDPACK</b>	
Type:	<b>Morie 0 and Morie 000</b>
Interval:	<b>2.1 feet</b>

<b>WELL DEVELOPMENT DATA</b>	<b>WATER LEVELS</b>
Date: <b>10/20/95</b>	Date: <b>10/20/95</b> Time: <b>1610</b> Depth, TR: <b>3.10 ft</b>
Method: <b>Surge Block</b>	▼ <b>10/22/95</b> <b>0948</b> <b>1.27 ft</b>
Duration: <b>3 Days</b>	▼ <b>10/22/95</b> <b>1040</b> <b>2.87 ft</b>
Rate: <b>0.320 L/minute</b>	▼ <b>10/22/95</b> <b>1150</b> <b>3.50 ft</b>
Final Measurements:	▼

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.18	14.0	490	4.44

<b>LEGEND</b>	GRAVEL SURFACE SEAL GROUT SEAL SANDPACK	SAND SILT CLAY NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

## COMPLETION REPORT OF WELL No. MW25-9

# COMPLETION REPORT OF WELL No. MW25-10

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>997965.0 751000.0</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>09/27/95</b> WELL INSTALLATION COMPLETED: <b>09/27/95</b>	GROUND SURFACE ELEVATION: <b>741.8</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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STRATA	DEPTH (ft.)	SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																																																					
				1.4	TPC 740.4	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Round Box Riser Interval: 2.29 feet																																																					
				1.2	TR 740.6																																																						
				0.0	GS 741.8																																																						
TL	0																																																										
				1.3	TBS 740.5	<b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: 4.41 feet																																																					
				2.4	TSP 739.4																																																						
				3.2	TSC 738.6																																																						
				5.2	BSC 736.6	<b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 2.0 feet																																																					
WS	5			5.6	POW 736.2																																																						
CS	5.6					<b>SURFACE SEAL</b> Type: CEMENT Interval: 0.8 feet  <b>GROUT</b> Type: NA Interval: NA  <b>SEAL</b> Type: BENTONITE Interval: 1.1 feet  <b>SANDPACK</b> Type: Morie 0 and Morie 000 Interval: 2.8 feet																																																					
<table border="0" style="width: 100%;"> <tr> <th style="text-align: left;">WELL DEVELOPMENT DATA</th> <th colspan="3" style="text-align: left;">WATER LEVELS</th> </tr> <tr> <td>Date: 10/25/95</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Time</td> <td style="text-align: center;">Depth, TR</td> </tr> <tr> <td>Method: Surge Block</td> <td style="text-align: center;">▽ 10/22/95</td> <td style="text-align: center;">1310</td> <td style="text-align: center;">1.67 ft</td> </tr> <tr> <td>Duration: 4 Days</td> <td style="text-align: center;">▽ 10/22/95</td> <td style="text-align: center;">1759</td> <td style="text-align: center;">4.30 ft</td> </tr> <tr> <td>Rate: 0.090 L/minute</td> <td style="text-align: center;">▽ 10/23/95</td> <td style="text-align: center;">1643</td> <td style="text-align: center;">2.38 ft</td> </tr> <tr> <td></td> <td style="text-align: center;">▽ 10/24/95</td> <td style="text-align: center;">1315</td> <td style="text-align: center;">2.86 ft</td> </tr> <tr> <td colspan="4">Final Measurements:</td> </tr> <tr> <td style="text-align: center;">pH</td> <td style="text-align: center;">Temperature (degrees C)</td> <td style="text-align: center;">Conductivity (micromhos/cm)</td> <td style="text-align: center;">Turbidity (NTU)</td> </tr> <tr> <td style="text-align: center;">7.30</td> <td style="text-align: center;">14.9</td> <td style="text-align: center;">425</td> <td style="text-align: center;">5.46</td> </tr> </table>						WELL DEVELOPMENT DATA	WATER LEVELS			Date: 10/25/95	Date	Time	Depth, TR	Method: Surge Block	▽ 10/22/95	1310	1.67 ft	Duration: 4 Days	▽ 10/22/95	1759	4.30 ft	Rate: 0.090 L/minute	▽ 10/23/95	1643	2.38 ft		▽ 10/24/95	1315	2.86 ft	Final Measurements:				pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	7.30	14.9	425	5.46																		
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<b>LEGEND</b>			GRAVEL	TPC	TOP OF PROTECTIVE CASING																																																						
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




Seneca Army Depot  
Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW25-11

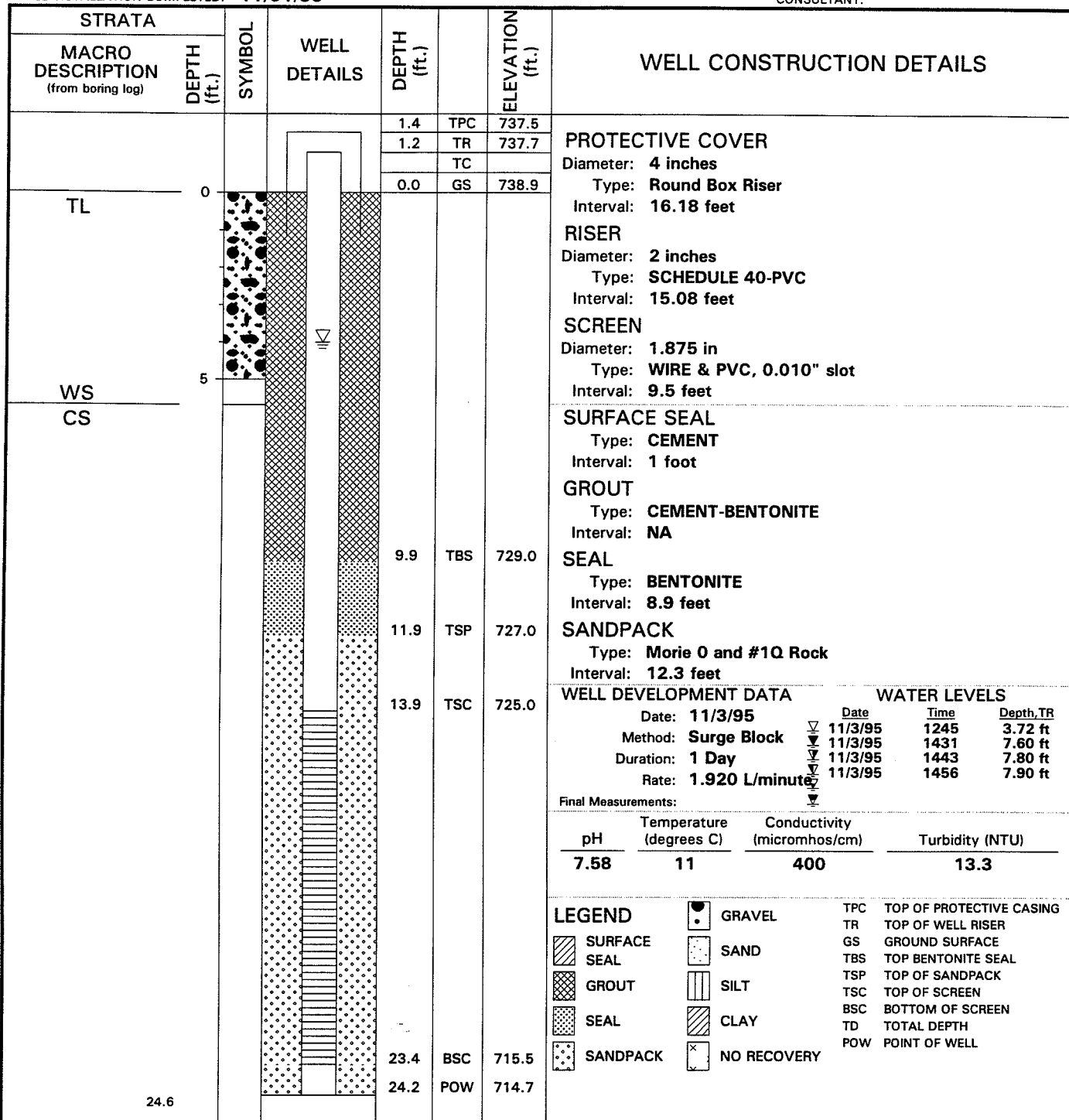
**PROJECT:** SEAD-25 & SEAD-26 RI/FS  
**PROJECT LOCATION:** Seneca Army Depot Activity, Romulus, NY 14541  
**WELL LOCATION (N/E):** 997865.7 750956.7  
**DRILLING CONTRACTOR:** Empire Soils Investigation, Inc.  
**DRILLING METHOD:** Hollow Stem Auger  
**WELL INSTALLATION STARTED:** 10/11/95  
**WELL INSTALLATION COMPLETED:** 10/11/95

**GROUND SURFACE ELEVATION:** 738.7  
**DATUM:** NGVD 88  
**GEOLOGIST:** F. O'Loughlin  
**CHECKED BY:** P.Feschbach-Meriney  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)						
				1.6	TPC	737.1	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Round Box Riser Interval: 4.53 feet
				1.5	TR	737.2	
					TC		
				0.0	GS	738.7	
TL	0			1.4	TBS	737.3	<b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: 5.35 feet
				2.7	TSP	736.0	
				3.8	TSC	734.9	<b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 1.5 feet
				5.3	BSC	733.4	
WS	5.7			5.7	POW	733.0	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1.4 feet
CS							
							<b>GROUT</b> Type: NA Interval: NA
							<b>SEAL</b> Type: BENTONITE Interval: 1.3 feet
							<b>SANDPACK</b> Type: Morie 0 and Morie 000 Interval: 3.0 feet
				<b>WELL DEVELOPMENT DATA</b>		<b>WATER LEVELS</b>	
Date: 10/23/95		Date		Time		Depth, TR	
Method: Surge Block		10/23/95		1620		4.18 ft	
Duration: 3 Days		10/24/95		1335		2.92 ft	
Rate: 1.020 L/minute		10/24/95		1650		3.00 ft	
		10/25/95		0830		3.29 ft	
Final Measurements:							
pH		Temperature (degrees C)		Conductivity (micromhos/cm)		Turbidity (NTU)	
7.11		14		920		25.1	
<b>LEGEND</b>				 GRAVEL  SAND  SILT  CLAY  NO RECOVERY		TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL	
 SURFACE SEAL  GROUT  SEAL  SANDPACK							

# COMPLETION REPORT OF WELL No. MW25-12D

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>738.9</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>997866.1 750967.3</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Rock Coring</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>11/01/95</b>	
WELL INSTALLATION COMPLETED: <b>11/01/95</b>	



# COMPLETION REPORT OF WELL No. MW25-13

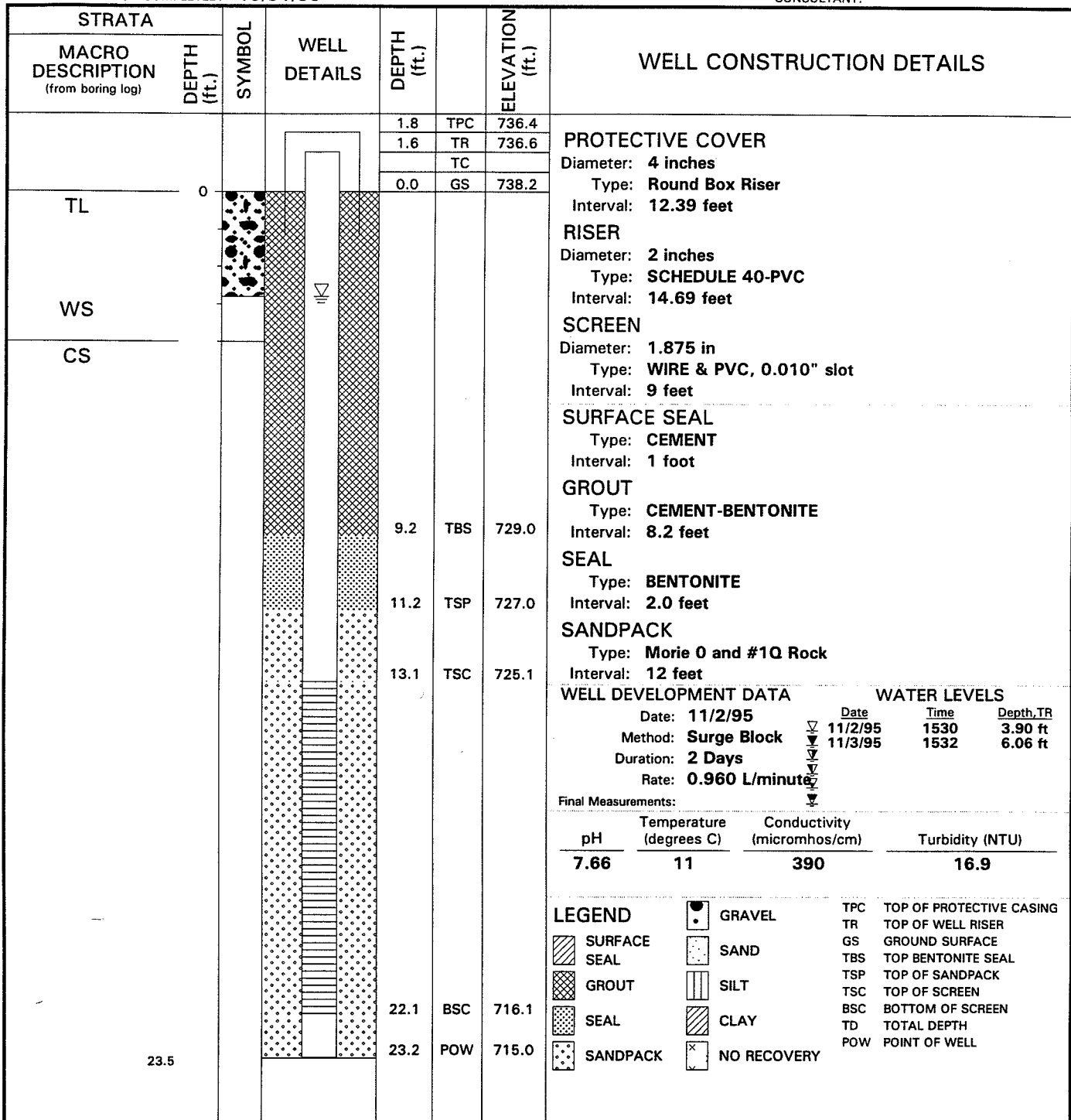
PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>997866.5 750869.7</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>10/11/95</b> WELL INSTALLATION COMPLETED: <b>10/11/95</b>	GROUND SURFACE ELEVATION: <b>737.9</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)					
	0		1.8	TPC	736.2	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Round Box Riser</b> Interval: <b>2.76 feet</b>
			1.7	TR	736.3	
			0.0	TC		
			0.0	GS	737.9	
TL		[Symbol]	1.0	TBS	736.9	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>4.38 feet</b>
			2.1	TSP	735.8	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>0.8 feet</b>
WS		[Symbol]	2.7	TSC	735.2	
	4.0		3.5	BSC	734.4	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>1.4 feet</b>
CS		[Symbol]	4.0	POW	733.9	
						<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>
						<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.1 feet</b>
						<b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>1.9 feet</b>
			<b>WELL DEVELOPMENT DATA</b>		<b>WATER LEVELS</b>	
			Date: <b>10/25/95</b>	Date	Time	Depth, TR
			Method: <b>Surge Block</b>	10/24/95		6.78 ft
			Duration: <b>9 Days</b>	10/25/95	1035	4.46 ft
			Rate: <b>0.050 L/minute</b>	10/25/95	1202	4.69 ft
				10/30/95	1040	5.50 ft
				10/31/95	1610	5.63 ft
			Final Measurements:	11/2/95	1308	5.73 ft
		pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	
		7.10	14.0	1000	9.66	
<b>LEGEND</b>		[Symbol]	GRAVEL	TPC	TOP OF PROTECTIVE CASING	
[Symbol]	SURFACE SEAL	[Symbol]	SAND	TR	TOP OF WELL RISER	
[Symbol]	GROUT	[Symbol]	SILT	GS	GROUND SURFACE	
[Symbol]	SEAL	[Symbol]	CLAY	TBS	TOP BENTONITE SEAL	
[Symbol]	SANDPACK	[Symbol]	NO RECOVERY	TSP	TOP OF SANDPACK	
				TSC	TOP OF SCREEN	
				BSC	BOTTOM OF SCREEN	
				TD	TOTAL DEPTH	
				POW	POINT OF WELL	



# COMPLETION REPORT OF WELL No. MW25-14D

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>997866.5 750876.2</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Rock Coring</b> WELL INSTALLATION STARTED: <b>10/31/95</b> WELL INSTALLATION COMPLETED: <b>10/31/95</b>	GROUND SURFACE ELEVATION: <b>738.2</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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<b>LEGEND</b>	[Symbol] GRAVEL [Symbol] SAND [Symbol] SILT [Symbol] CLAY [Symbol] NO RECOVERY	[Symbol] SURFACE SEAL [Symbol] GROUT [Symbol] SEAL [Symbol] SANDPACK	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL
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Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW25-15

**PROJECT:** SEAD-25 & SEAD-26 RI/FS  
**PROJECT LOCATION:** Seneca Army Depot Activity, Romulus, NY 14541  
**WELL LOCATION (N/E):** 997974.2 750764.4  
**DRILLING CONTRACTOR:** Empire Soils Investigation, Inc.  
**DRILLING METHOD:** Hollow Stem Auger  
**WELL INSTALLATION STARTED:** 10/10/95  
**WELL INSTALLATION COMPLETED:** 10/10/95

**GROUND SURFACE ELEVATION:** 739.6  
**DATUM:** NGVD 88  
**GEOLOGIST:** F. O'Loughlin  
**CHECKED BY:** P.Feschbach-Meriney  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)						
				1.6	TPC	738.0	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Round Box Riser Interval: 3.22 feet
				1.4	TR	738.2	
					TC		
				0.0	GS	739.6	
TL	0			1.6	TBS	738.0	<b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: 5.29 feet
				2.9	TSP	736.7	
WS	5			3.9	TSC	735.7	<b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 1.5 feet
				5.4	BSC	734.2	
	6.2			5.8	POW	733.8	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1 foot
CS							
							<b>GROUT</b> Type: NA Interval: NA
							<b>SEAL</b> Type: BENTONITE Interval: 1.3 feet
							<b>SANDPACK</b> Type: Morie 0 and Morie 000 Interval: 2.9 feet
				<b>WELL DEVELOPMENT DATA</b>		<b>WATER LEVELS</b>	
		Date: 10/22/95	Date	Time	Depth, TR		
		Method: Surge Block	10/24/95	1520	4.57 ft		
		Duration: 10 Days	10/25/95	1300	3.20 ft		
		Rate: 0.050 L/minute	10/30/95	1018	4.36 ft		
			10/31/95	1520	5.00 ft		
		Final Measurements:	11/1/95	1007	4.57 ft		
			11/2/95	1030	4.66 ft		
		pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)		
		6.93	15.0	450	8.38		
<b>LEGEND</b>		GRAVEL	TPC	TOP OF PROTECTIVE CASING			
SURFACE SEAL		SAND	TR	TOP OF WELL RISER			
GROUT		SILT	GS	GROUND SURFACE			
SEAL		CLAY	TBS	TOP BENTONITE SEAL			
SANDPACK		NO RECOVERY	TSP	TOP OF SANDPACK			
			TSC	TOP OF SCREEN			
			BSC	BOTTOM OF SCREEN			
			TD	TOTAL DEPTH			
			POW	POINT OF WELL			



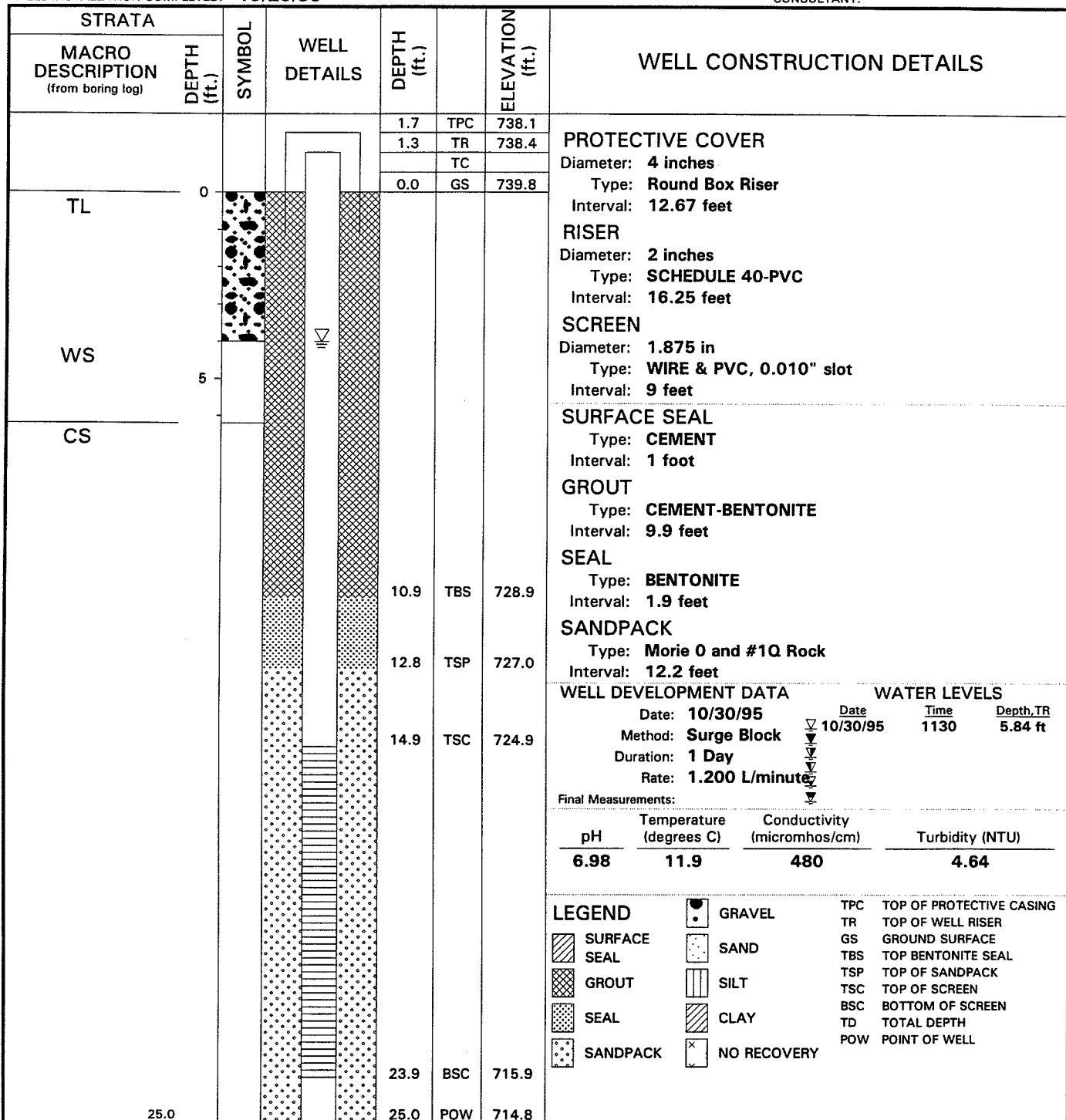
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Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW25-15**

# COMPLETION REPORT OF WELL No. MW25-16D

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>739.8</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>997975.4 750773.2</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Rock Coring</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>10/25/95</b>	
WELL INSTALLATION COMPLETED: <b>10/25/95</b>	



**ENGINEERING-SCIENCE, INC.**

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Romulus, New York

## COMPLETION REPORT OF WELL No. MW25-16D

# 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): **998187.6 750963.0**  
 DRILLING CONTRACTOR: **Empire Soils Investigation, Inc.**  
 DRILLING METHOD: **Hollow Stem Auger**  
 WELL INSTALLATION STARTED: **10/16/95**  
 WELL INSTALLATION COMPLETED: **10/16/95**

GROUND SURFACE ELEVATION: **742.2**  
 DATUM: **NGVD 88**  
 GEOLOGIST: **F. O'Loughlin**  
 CHECKED BY: **P.Feschbach-Meriney**  
 CONSULTANT:

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS										
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)															
				1.7	TPC	740.5	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Round Box Riser</b> Interval: <b>5.25 feet</b>									
				1.7	TR	740.6										
					TC											
				0.0	GS	742.2										
TL	0			2.0	TBS	740.2	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>6.28 feet</b>									
				3.6	TSP	738.6	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4.5 feet</b>									
				4.6	TSC	737.6										
WS	5			9.1	BSC	733.1	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>									
				9.9	POW	732.3	<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>									
CS	9.9						<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.6 feet</b>									
							<b>SANDPACK</b> Type: <b>Morie 0 and #10 Rock</b> Interval: <b>6.3 feet</b>									
<b>WELL DEVELOPMENT DATA</b>						<b>WATER LEVELS</b>										
Date: <b>10/31/95</b> Method: <b>Surge Block</b> Duration: <b>1 Day</b> Rate: <b>0.780 L/minute</b>						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>10/31/95</td> <td>1031</td> <td>5.70 ft</td> </tr> <tr> <td>10/31/95</td> <td>1415</td> <td>5.07 ft</td> </tr> </tbody> </table>		Date	Time	Depth, TR	10/31/95	1031	5.70 ft	10/31/95	1415	5.07 ft
Date	Time	Depth, TR														
10/31/95	1031	5.70 ft														
10/31/95	1415	5.07 ft														
Final Measurements:						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>pH</th> <th>Temperature (degrees C)</th> <th>Conductivity (micromhos/cm)</th> <th>Turbidity (NTU)</th> </tr> </thead> <tbody> <tr> <td>7.12</td> <td>13.0</td> <td>550</td> <td>4.16</td> </tr> </tbody> </table>		pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	7.12	13.0	550	4.16	
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)													
7.12	13.0	550	4.16													
<b>LEGEND</b>		GRAVEL SAND SILT CLAY NO RECOVERY	SURFACE SEAL GROUT SEAL SANDPACK	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL												



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
 Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW25-18

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**  
 WELL INSTALLATION COMPLETED: **10/16/95**

GROUND SURFACE ELEVATION: **743.1**  
 DATUM: **NGVD 88**  
 GEOLOGIST: **F. O'Loughlin**  
 CHECKED BY: **P.Feschbach-Meriney**  
 CONSULTANT:

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)						
				1.6	TPC	741.4	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Round Box Riser</b> Interval: <b>5.02 feet</b>
				1.3	TR	741.7	
					TC		
				0.0	GS	743.1	
TL	0			1.9	TBS	741.2	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>5.74 feet</b>
				3.4	TSP	739.7	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4.5 feet</b>
				4.4	TSC	738.7	
	5						<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>
							<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>
WS				8.9	BSC	734.2	<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.5 feet</b>
				9.7	POW	733.4	<b>SANDPACK</b> Type: <b>Morie 0 and #10 Rock</b> Interval: <b>6.3 feet</b>
CS	10.0						<b>WELL DEVELOPMENT DATA</b>
							<b>WATER LEVELS</b>
							Date: <b>10/30/95</b> Method: <b>Surge Block</b> Duration: <b>4 Days</b> Rate: <b>0.090 L/minute</b>
							Date: <b>10/30/95</b> Time: <b>1518</b> Depth, TR: <b>5.93 ft</b> Date: <b>10/31/95</b> Time: <b>0921</b> Depth, TR: <b>5.98 ft</b> Date: <b>11/1/95</b> Time: <b>0900</b> Depth, TR: <b>6.04 ft</b> Date: <b>11/2/95</b> Time: <b>0825</b> Depth, TR: <b>5.95 ft</b>
							Final Measurements:
							pH: <b>7.00</b> Temperature (degrees C): <b>14.5</b> Conductivity (micromhos/cm): <b>1480</b> Turbidity (NTU): <b>8.57</b>
							<b>LEGEND</b>
							[Symbol] GRAVEL    TPC TOP OF PROTECTIVE CASING [Symbol] SURFACE SEAL    TR TOP OF WELL RISER [Symbol] SAND    GS GROUND SURFACE [Symbol] GROUT    TBS TOP BENTONITE SEAL [Symbol] SEAL    TSP TOP OF SANDPACK [Symbol] SANDPACK    TSC TOP OF SCREEN [Symbol] NO RECOVERY    BSC BOTTOM OF SCREEN [Symbol] SILT    TD TOTAL DEPTH [Symbol] CLAY    POW POINT OF WELL



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF WELL No. MW25-18**

# COMPLETION REPORT OF WELL No. MW25-19

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>998135.0 750762.5</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>10/07/95</b> WELL INSTALLATION COMPLETED: <b>10/07/95</b>	GROUND SURFACE ELEVATION: <b>740.1</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																																										
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)																																																
				1.9	TPC	738.1	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Round Box Riser</b> Interval: <b>3.95 feet</b> <b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>7.15 feet</b> <b>SCREEN</b> Diameter: <b>1.875 in.</b> Type: <b>WIRE &amp; PVC, 0.010" slot</b> Interval: <b>4.5 feet</b> <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b> <b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b> <b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>2.0 feet</b> <b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>6.2 feet</b>																																										
				1.9	TR	738.2																																											
					TC																																												
				0.0	GS	740.1																																											
TL	0			2.0	TBS	738.1																																											
				4.0	TSP	736.1																																											
	5			5.3	TSC	734.8																																											
WS	10.2			9.8	BSC	730.3																																											
	10			10.2	POW	729.9																																											
CS							<b>WELL DEVELOPMENT DATA</b> <table border="0" style="width: 100%;"> <tr> <td>Date: <b>10/22/95</b></td> <td>Date</td> <td>Time</td> <td>Depth, TR</td> </tr> <tr> <td>Method: <b>Surge Block</b></td> <td>10/22/95</td> <td>1505</td> <td>2.94 ft</td> </tr> <tr> <td>Duration: <b>1 Day</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rate: <b>0.780 L/minute</b></td> <td></td> <td></td> <td></td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td>pH</td> <td>Temperature (degrees C)</td> <td>Conductivity (micromhos/cm)</td> <td>Turbidity (NTU)</td> </tr> <tr> <td><b>6.96</b></td> <td><b>16</b></td> <td><b>550</b></td> <td><b>5.87</b></td> </tr> </table> <b>LEGEND</b> <table border="0" style="width: 100%;"> <tr> <td> GRAVEL</td> <td>TPC TOP OF PROTECTIVE CASING</td> </tr> <tr> <td> SURFACE SEAL</td> <td>TR TOP OF WELL RISER</td> </tr> <tr> <td> GROUT</td> <td>GS GROUND SURFACE</td> </tr> <tr> <td> SEAL</td> <td>TBS TOP BENTONITE SEAL</td> </tr> <tr> <td> SANDPACK</td> <td>TSP TOP OF SANDPACK</td> </tr> <tr> <td> NO RECOVERY</td> <td>TSC TOP OF SCREEN</td> </tr> <tr> <td></td> <td>BSC BOTTOM OF SCREEN</td> </tr> <tr> <td></td> <td>TD TOTAL DEPTH</td> </tr> <tr> <td></td> <td>POW POINT OF WELL</td> </tr> </table>	Date: <b>10/22/95</b>	Date	Time	Depth, TR	Method: <b>Surge Block</b>	10/22/95	1505	2.94 ft	Duration: <b>1 Day</b>				Rate: <b>0.780 L/minute</b>				pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	<b>6.96</b>	<b>16</b>	<b>550</b>	<b>5.87</b>	GRAVEL	TPC TOP OF PROTECTIVE CASING	SURFACE SEAL	TR TOP OF WELL RISER	GROUT	GS GROUND SURFACE	SEAL	TBS TOP BENTONITE SEAL	SANDPACK	TSP TOP OF SANDPACK	NO RECOVERY	TSC TOP OF SCREEN		BSC BOTTOM OF SCREEN		TD TOTAL DEPTH		POW POINT OF WELL
Date: <b>10/22/95</b>	Date	Time	Depth, TR																																														
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Rate: <b>0.780 L/minute</b>																																																	
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)																																														
<b>6.96</b>	<b>16</b>	<b>550</b>	<b>5.87</b>																																														
GRAVEL	TPC TOP OF PROTECTIVE CASING																																																
SURFACE SEAL	TR TOP OF WELL RISER																																																
GROUT	GS GROUND SURFACE																																																
SEAL	TBS TOP BENTONITE SEAL																																																
SANDPACK	TSP TOP OF SANDPACK																																																
NO RECOVERY	TSC TOP OF SCREEN																																																
	BSC BOTTOM OF SCREEN																																																
	TD TOTAL DEPTH																																																
	POW POINT OF WELL																																																



**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF WELL No. MW25-19**

# 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):** 992227.7 751590.6  
**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:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION (from boring log)	DEPTH (ft.)						
				2.7	TPC	748.5	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Square Box Riser Interval: 3.5 feet <b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: NA <b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 2 feet <b>SURFACE SEAL</b> Type: CEMENT Interval: NA <b>GROUT</b> Type: NA Interval: NA <b>SEAL</b> Type: BENTONITE Interval: 0.8 feet <b>SANDPACK</b> Type: #1 and #3 Interval: 3.7 feet
				2.6	TR	748.6	
					TC		
				0.0	GS	751.2	
FL	0						
TL				1.5	TBS	749.7	
				2.3	TSP	748.9	
WS				3.3	TSC	747.9	
	5			5.3	BSC	745.9	
CS	6.0			6.0	POW	745.2	

WELL DEVELOPMENT DATA		WATER LEVELS		
Date:	1/9/94	Date	Time	Depth, TR
Method:	Bail & Pump	11/20/93	1500	4.76 ft
Duration:	1.5 Months	11/23/93	1345	7.15 ft
Rate:	0.3 L/minute	1/7/94	1130	6.85 ft
		1/8/94	1400	7.20 ft
		1/9/94	1105	7.32 ft
Final Measurements:				
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	
7.62	10.5	550	5.23	

<b>LEGEND</b> SURFACE SEAL GROUT SEAL SANDPACK	GRAVEL SAND SILT CLAY NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW26-1**

# COMPLETION REPORT OF WELL No. MW26-2

**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  
**WELL INSTALLATION COMPLETED:** 11/18/93

**GROUND SURFACE ELEVATION:** 753.8  
**DATUM:** NGVD 88  
**GEOLOGIST:** E. Schacht  
**CHECKED BY:** F. O'Loughlin  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS			
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)									
				3.0	TPC	750.8	<b>PROTECTIVE COVER</b> Diameter: 4 inches Type: Square Box Riser Interval: 4.86 feet  <b>RISER</b> Diameter: 2 inches Type: SCHEDULE 40-PVC Interval: NA  <b>SCREEN</b> Diameter: 2 inches Type: SCH 40-PVC, 0.010" slot Interval: 9 feet  <b>SURFACE SEAL</b> Type: CEMENT Interval: NA  <b>GROUT</b> Type: NA Interval: NA  <b>SEAL</b> Type: BENTONITE Interval: 1.0 feet  <b>SANDPACK</b> Type: #1 and #3 Interval: 11.1 feet			
				2.8	TR	751.0				
					TC					
				0.0	GS	753.8				
FL	0			1.9	TBS	751.9				
				2.9	TSP	750.9				
				3.9	TSC	749.9				
	5									
	10									
TL										
WS				12.9	BSC	740.9				
	14.0			14.0	POW	739.8				
CS										

WELL DEVELOPMENT DATA		WATER LEVELS	
Date:	1/9/94	Date	Time
Method:	Bail	11/21/93	15.48 ft
Duration:	3 Days	11/22/93	15.64 ft
Rate:	NA - Well Dry	1/9/94	15.67 ft
		1/12/94	Dry well
Final Measurements:			
pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
NA	NA	NA	NA

LEGEND	
	SURFACE SEAL
	GROUT
	SEAL
	SANDPACK
	GRAVEL
	SAND
	SILT
	CLAY
	NO RECOVERY
TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL



# COMPLETION REPORT OF WELL No. MW26-3

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>751.5</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>992216.8 751115.5</b>	GEOLOGIST: <b>E. Schacht</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>F. O'Loughlin</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>11/18/93</b>	
WELL INSTALLATION COMPLETED: <b>11/18/93</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS												
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																		
				2.7	TPC	748.8	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>4.55 feet</b>												
				2.6	TR	748.9													
				0.0	TC														
				0.0	GS	751.5													
FL	0			1.8	TBS	749.7	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>NA</b>												
				2.8	TSP	748.7	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>9 feet</b>												
	5			4.3	TSC	747.2	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>												
							<b>GROUT</b> Type: <b>CEMENT-BENTONITE</b> Interval: <b>1.8 feet</b>												
							<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.0 feet</b>												
TL	10						<b>SANDPACK</b> Type: <b>#1 and #3</b> Interval: <b>11.2 feet</b>												
WS				13.3	BSC	738.2	<b>WELL DEVELOPMENT DATA</b> Date: <b>11/20/93</b> Method: <b>Bail &amp; Pump</b> Duration: <b>1 Day</b> Rate: <b>1.26 L/minute</b>												
				14.0	POW	737.5	<b>WATER LEVELS</b> <table border="1" style="font-size: small; width: 100%;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>11/20/93</td> <td>1610</td> <td>11.90 ft</td> </tr> <tr> <td>11/20/93</td> <td>1635</td> <td>11.76 ft</td> </tr> <tr> <td>11/20/93</td> <td>1650</td> <td>11.68 ft</td> </tr> </tbody> </table>	Date	Time	Depth, TR	11/20/93	1610	11.90 ft	11/20/93	1635	11.76 ft	11/20/93	1650	11.68 ft
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW26-3**

# COMPLETION REPORT OF WELL No. MW26-4

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>991690.8 751126.3</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>11/19/93</b> WELL INSTALLATION COMPLETED: <b>11/19/93</b>	GROUND SURFACE ELEVATION: <b>750.1</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>E. Schacht</b> CHECKED BY: <b>F. O'Loughlin</b> CONSULTANT:
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STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																																				
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																																										
	0			2.6	TPC	747.6	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>5.53 feet</b>																																				
				2.5	TR	747.6																																					
				0.0	TC																																						
				0.0	GS	750.1																																					
FL				3.0	TBS	747.1	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>NA</b>																																				
	5			4.5	TSP	745.6	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4 feet</b>																																				
TL				6.4	TSC	743.7	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>																																				
	10			10.4	BSC	739.7	<b>GROUT</b> Type: <b>CEMENT-BENTONITE</b> Interval: <b>3.0 feet</b>																																				
WS				11.5	POW	738.6	<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.5 feet</b>																																				
	11.5						<b>SANDPACK</b> Type: <b>#1 and #3</b> Interval: <b>7.0 feet</b>																																				
CS							<b>WELL DEVELOPMENT DATA</b> Date: <b>11/21/93</b> Method: <b>Bail &amp; Pump</b> Duration: <b>1 Day</b> Rate: <b>1 L/minute</b>																																				
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**Seneca Army Depot  
Romulus, New York**

## COMPLETION REPORT OF WELL No. MW26-4

# COMPLETION REPORT OF WELL No. MW26-5

**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.  
**DRILLING METHOD:** Hollow Stem Auger  
**WELL INSTALLATION STARTED:** 09/24/95  
**WELL INSTALLATION COMPLETED:** 09/24/95

**GROUND SURFACE ELEVATION:** 754.6  
**DATUM:** NGVD 88  
**GEOLOGIST:** F. O'Loughlin  
**CHECKED BY:** P.Feschbach-Meriney  
**CONSULTANT:**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)					
				2.4	TPC	752.3
				2.1	TR	752.6
				0.0	GS	754.6
FL	0			2.5	TBS	752.1
				3.8	TSP	750.8
				4.9	TSC	749.7
TL	10			13.9	BSC	740.8
WS	15			15.0	POW	739.6
CS	15					

<b>PROTECTIVE COVER</b>			
Diameter: 4 inches			
Type: Square Box Riser			
Interval: 4.9 feet			
<b>RISER</b>			
Diameter: 2 inches			
Type: SCHEDULE 40-PVC			
Interval: 6.8 feet			
<b>SCREEN</b>			
Diameter: 2 inches			
Type: SCH 40-PVC, 0.010" slot			
Interval: 8.95 feet			
<b>SURFACE SEAL</b>			
Type: CEMENT			
Interval: NA			
<b>GROUT</b>			
Type: NA			
Interval: NA			
<b>SEAL</b>			
Type: BENTONITE			
Interval: 1.3 feet			
<b>SANDPACK</b>			
Type: Morie 0 and Morie 000			
Interval: 10.05 feet			

WELL DEVELOPMENT DATA		WATER LEVELS	
Date	Time	Date	Depth, TR
10/19/95		10/17/95	1514 12.66 ft
Method: Surge Block		10/18/95	1128 12.68 ft
Duration: 3 Days		10/18/95	1253 13.57 ft
Rate: 0.24 L/minute		10/18/95	1712 12.74 ft
Final Measurements:			

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.55	15.5	925	8.5

<b>LEGEND</b> SURFACE SEAL GROUT SEAL SANDPACK	GRAVEL SAND SILT CLAY NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW26-6

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>754.7</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>992233.8 751252.0</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/23/95</b>	
WELL INSTALLATION COMPLETED: <b>09/23/95</b>	

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																	
			2.3	TPC	752.4	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>4.78 feet</b> <b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>6.9 feet</b> <b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>9 feet</b>																
			2.0	TR	752.7																	
				TC																		
			0.0	GS	754.7																	
FL						<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>2.5 feet</b> <b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b> <b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.3 feet</b> <b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>11.2 feet</b>																
			2.5	TBS	752.2																	
			3.8	TSP	750.9																	
			4.9	TSC	749.8																	
TL						<b>WELL DEVELOPMENT DATA</b> Date: <b>10/18/95</b> Method: <b>Surge Block</b> Duration: <b>2 Days</b> Rate: <b>0.650 L/minute</b> Final Measurements: <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="2">WELL DEVELOPMENT DATA</th> <th colspan="2">WATER LEVELS</th> </tr> <tr> <th>Date</th> <th>Time</th> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>10/18/95</td> <td>0950</td> <td>10/18/95</td> <td>0950</td> </tr> <tr> <td>10/19/95</td> <td>0932</td> <td>10/19/95</td> <td>0932</td> </tr> </tbody> </table>	WELL DEVELOPMENT DATA		WATER LEVELS		Date	Time	Date	Time	10/18/95	0950	10/18/95	0950	10/19/95	0932	10/19/95	0932
WELL DEVELOPMENT DATA		WATER LEVELS																				
Date	Time	Date	Time																			
10/18/95	0950	10/18/95	0950																			
10/19/95	0932	10/19/95	0932																			
			13.9	BSC	740.8																	
WS																						
			15.0	POW	739.7																	
CS																						

<b>LEGEND</b>	GRAVEL	TPC TOP OF PROTECTIVE CASING
SURFACE SEAL	SAND	TR TOP OF WELL RISER
GROUT	SILT	GS GROUND SURFACE
SEAL	CLAY	TBS TOP BENTONITE SEAL
SANDPACK	NO RECOVERY	TSP TOP OF SANDPACK
		TSC TOP OF SCREEN
		BSC BOTTOM OF SCREEN
		TD TOTAL DEPTH
		POW POINT OF WELL



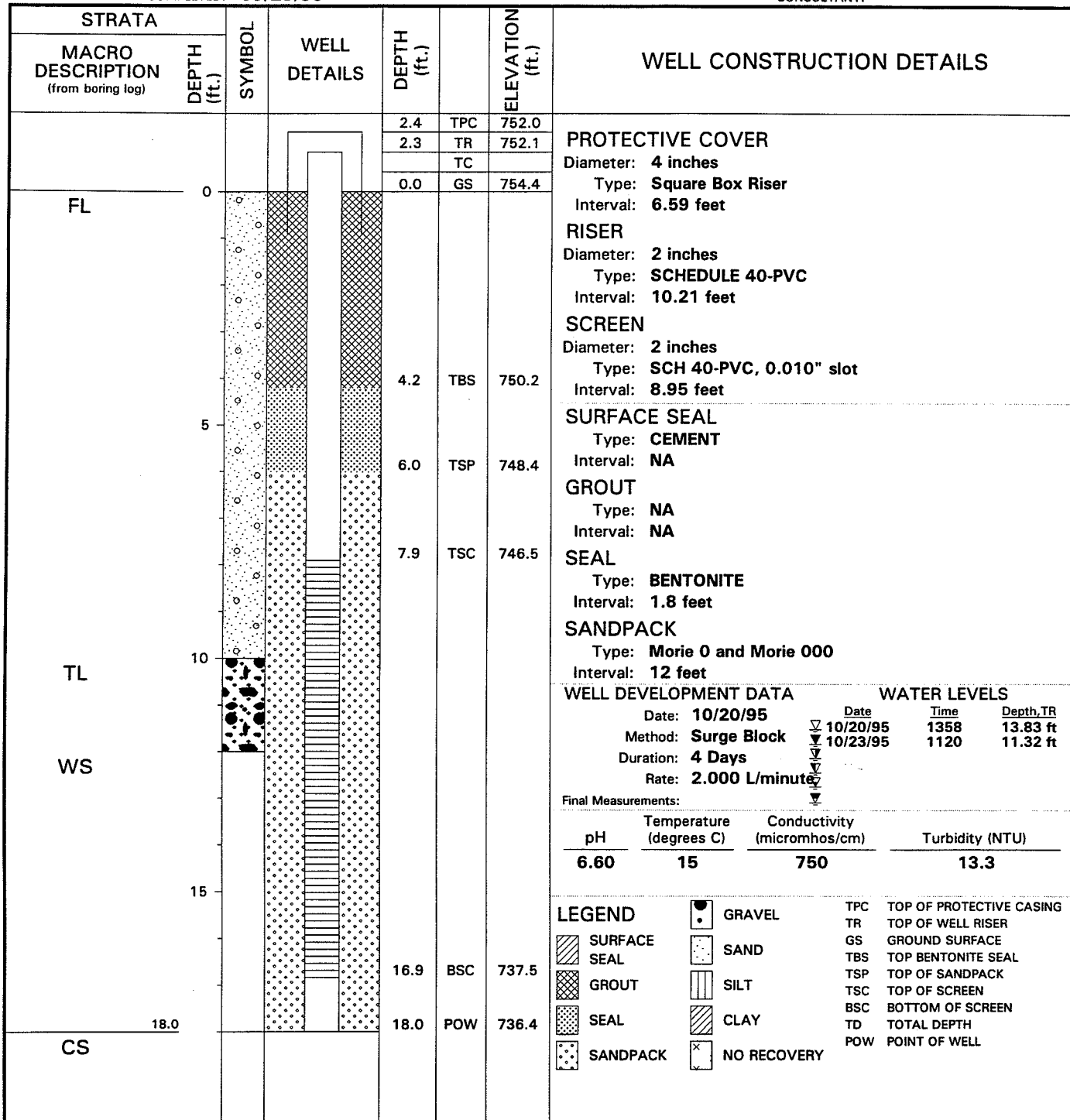
**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

## COMPLETION REPORT OF WELL No. MW26-6

# COMPLETION REPORT OF WELL No. MW26-7

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>992178.9 751194.1</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>09/23/95</b> WELL INSTALLATION COMPLETED: <b>09/23/95</b>	GROUND SURFACE ELEVATION: <b>754.4</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

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

# COMPLETION REPORT OF WELL No. MW26-8

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>750.5</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>991754.6 751203.8</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/21/95</b>	
WELL INSTALLATION COMPLETED: <b>09/21/95</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)	ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																									
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																														
				2.1	TPC	748.4	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>5.13 feet</b>																								
				1.9	TR	748.7																									
					TC																										
				0.0	GS	750.5																									
FL	0			3.0	TBS	747.5	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>8.17 feet</b>																								
				4.7	TSP	745.8	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4 feet</b>																								
TL	5			6.3	TSC	744.2	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>																								
WS	10			10.3	BSC	740.2	<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>																								
				11.5	POW	739.0	<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.7 feet</b>																								
CS	11.5						<b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>6.8 feet</b>																								
						<b>WELL DEVELOPMENT DATA</b>																									
						<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"></th> <th colspan="2">WATER LEVELS</th> </tr> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> <th></th> </tr> </thead> <tbody> <tr> <td>10/16/95</td> <td>1120</td> <td>10.50 ft</td> <td></td> </tr> <tr> <td>10/16/95</td> <td>1650</td> <td>10.83 ft</td> <td></td> </tr> <tr> <td>10/17/95</td> <td>0755</td> <td>10.60 ft</td> <td></td> </tr> <tr> <td>10/17/95</td> <td>1133</td> <td>10.73 ft</td> <td></td> </tr> </tbody> </table>				WATER LEVELS		Date	Time	Depth, TR		10/16/95	1120	10.50 ft		10/16/95	1650	10.83 ft		10/17/95	0755	10.60 ft		10/17/95	1133	10.73 ft	
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

## COMPLETION REPORT OF WELL No. MW26-8

# COMPLETION REPORT OF WELL No. MW26-9

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>750.9</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>991722.5 751224.7</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/25/95</b>	
WELL INSTALLATION COMPLETED: <b>09/25/95</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																			
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																									
				2.2	TPC	748.6	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>5.25 feet</b>																			
				2.1	TR	748.8																				
				0.0	TC																					
				0.0	GS	750.9																				
FL	0	[Symbol]	[Symbol]	3.0	TBS	747.9	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>9.14 feet</b>																			
	5	[Symbol]	[Symbol]	5.0	TSP	745.9	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>4 feet</b>																			
TL		[Symbol]	[Symbol]	7.1	TSC	743.8	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>																			
WS		[Symbol]	[Symbol]	11.1	BSC	739.8	<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>																			
	10	[Symbol]	[Symbol]	12.2	POW	738.7	<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>2.0 feet</b>																			
CS	12.2	[Symbol]	[Symbol]				<b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>7.2 feet</b>																			
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><b>WELL DEVELOPMENT DATA</b></td> <td style="width: 50%;"><b>WATER LEVELS</b></td> </tr> <tr> <td>Date: <b>10/16/95</b></td> <td>Date: <b>10/16/95</b></td> </tr> <tr> <td>Method: <b>Surge Block</b></td> <td>Time: <b>1338</b></td> </tr> <tr> <td>Duration: <b>1 Day</b></td> <td>Depth, TR: <b>10.63 ft</b></td> </tr> <tr> <td>Rate: <b>0.280 L/minute</b></td> <td>Depth, TD: <b>10.98 ft</b></td> </tr> <tr> <td>Final Measurements:</td> <td></td> </tr> <tr> <td style="text-align: center;">pH</td> <td style="text-align: center;">Temperature (degrees C)</td> </tr> <tr> <td style="text-align: center;">6.90</td> <td style="text-align: center;">13.75</td> </tr> <tr> <td style="text-align: center;">Conductivity (micromhos/cm)</td> <td style="text-align: center;">Turbidity (NTU)</td> </tr> <tr> <td style="text-align: center;">625</td> <td style="text-align: center;">8.38</td> </tr> </table>							<b>WELL DEVELOPMENT DATA</b>	<b>WATER LEVELS</b>	Date: <b>10/16/95</b>	Date: <b>10/16/95</b>	Method: <b>Surge Block</b>	Time: <b>1338</b>	Duration: <b>1 Day</b>	Depth, TR: <b>10.63 ft</b>	Rate: <b>0.280 L/minute</b>	Depth, TD: <b>10.98 ft</b>	Final Measurements:		pH	Temperature (degrees C)	6.90	13.75	Conductivity (micromhos/cm)	Turbidity (NTU)	625	8.38
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<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>LEGEND</b></td> <td style="width: 30%;">                 [Symbol] GRAVEL                  [Symbol] SAND                  [Symbol] SILT                  [Symbol] CLAY                  [Symbol] NO RECOVERY             </td> <td style="width: 40%;">                 TPC TOP OF PROTECTIVE CASING                  TR TOP OF WELL RISER                  GS GROUND SURFACE                  TBS TOP BENTONITE SEAL                  TSP TOP OF SANDPACK                  TSC TOP OF SCREEN                  BSC BOTTOM OF SCREEN                  TD TOTAL DEPTH                  POW POINT OF WELL             </td> </tr> <tr> <td>                 [Symbol] SURFACE SEAL                  [Symbol] GROUT                  [Symbol] SEAL                  [Symbol] SANDPACK             </td> <td></td> <td></td> </tr> </table>								<b>LEGEND</b>	[Symbol] GRAVEL [Symbol] SAND [Symbol] SILT [Symbol] CLAY [Symbol] NO RECOVERY	TPC TOP OF PROTECTIVE CASING TR TOP OF WELL RISER GS GROUND SURFACE TBS TOP BENTONITE SEAL TSP TOP OF SANDPACK TSC TOP OF SCREEN BSC BOTTOM OF SCREEN TD TOTAL DEPTH POW POINT OF WELL	[Symbol] SURFACE SEAL [Symbol] GROUT [Symbol] SEAL [Symbol] SANDPACK															
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**ENGINEERING-SCIENCE, INC.**

Seneca Army Depot  
Romulus, New York

## COMPLETION REPORT OF WELL No. MW26-9

# COMPLETION REPORT OF WELL No. MW26-10

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b>	GROUND SURFACE ELEVATION: <b>751.5</b>
PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b>	DATUM: <b>NGVD 88</b>
WELL LOCATION (N/E): <b>991652.5 751206.3</b>	GEOLOGIST: <b>F. O'Loughlin</b>
DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b>	CHECKED BY: <b>P.Feschbach-Meriney</b>
DRILLING METHOD: <b>Hollow Stem Auger</b>	CONSULTANT:
WELL INSTALLATION STARTED: <b>09/20/95</b>	
WELL INSTALLATION COMPLETED: <b>09/20/95</b>	

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft.)		ELEVATION (ft.)	WELL CONSTRUCTION DETAILS																								
MACRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft.)																														
				2.0	TPC	749.5	<b>PROTECTIVE COVER</b> Diameter: <b>4 inches</b> Type: <b>Square Box Riser</b> Interval: <b>3.95 feet</b>																								
				1.8	TR	749.7																									
					TC																										
				0.0	GS	751.5																									
FL	0			2.0	TBS	749.5	<b>RISER</b> Diameter: <b>2 inches</b> Type: <b>SCHEDULE 40-PVC</b> Interval: <b>6.10 feet</b>																								
				3.2	TSP	748.3	<b>SCREEN</b> Diameter: <b>2 inches</b> Type: <b>SCH 40-PVC, 0.010" slot</b> Interval: <b>6.9 feet</b>																								
				4.3	TSC	747.2																									
	5						<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>NA</b>																								
TL							<b>GROUT</b> Type: <b>NA</b> Interval: <b>NA</b>																								
WS							<b>SEAL</b> Type: <b>BENTONITE</b> Interval: <b>1.2 feet</b>																								
	10						<b>SANDPACK</b> Type: <b>Morie 0 and Morie 000</b> Interval: <b>8.3 feet</b>																								
				11.2	BSC	740.3	<b>WELL DEVELOPMENT DATA</b> <table border="0" style="float: right; margin-left: 20px;"> <tr> <th colspan="2"></th> <th colspan="2">WATER LEVELS</th> </tr> <tr> <td>Date:</td> <td><b>10/16/95</b></td> <td>Date</td> <td><b>10/16/95</b></td> </tr> <tr> <td>Method:</td> <td><b>Surge Block</b></td> <td>Time</td> <td><b>1504</b></td> </tr> <tr> <td>Duration:</td> <td><b>9 Days</b></td> <td>Time</td> <td><b>0830</b></td> </tr> <tr> <td>Rate:</td> <td><b>0.100 L/minute</b></td> <td>Depth, TR</td> <td><b>9.83 ft</b></td> </tr> <tr> <td></td> <td></td> <td>Depth, TR</td> <td><b>8.12 ft</b></td> </tr> </table>			WATER LEVELS		Date:	<b>10/16/95</b>	Date	<b>10/16/95</b>	Method:	<b>Surge Block</b>	Time	<b>1504</b>	Duration:	<b>9 Days</b>	Time	<b>0830</b>	Rate:	<b>0.100 L/minute</b>	Depth, TR	<b>9.83 ft</b>			Depth, TR	<b>8.12 ft</b>
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CS							<b>Final Measurements:</b> <table border="1" style="width: 100%; margin-top: 5px;"> <tr> <th>pH</th> <th>Temperature (degrees C)</th> <th>Conductivity (micromhos/cm)</th> <th>Turbidity (NTU)</th> </tr> <tr> <td style="text-align: center;">7.25</td> <td style="text-align: center;">15.6</td> <td style="text-align: center;">1250</td> <td style="text-align: center;">3.41</td> </tr> </table>	pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)	7.25	15.6	1250	3.41																
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SURFACE SEAL	SAND	SILT	CLAY	GRAVEL	NO RECOVERY	TPC TOP OF PROTECTIVE CASING	TR TOP OF WELL RISER	GS GROUND SURFACE	TBS TOP BENTONITE SEAL	TSP TOP OF SANDPACK	TSC TOP OF SCREEN	BSC BOTTOM OF SCREEN	TD TOTAL DEPTH	POW POINT OF WELL
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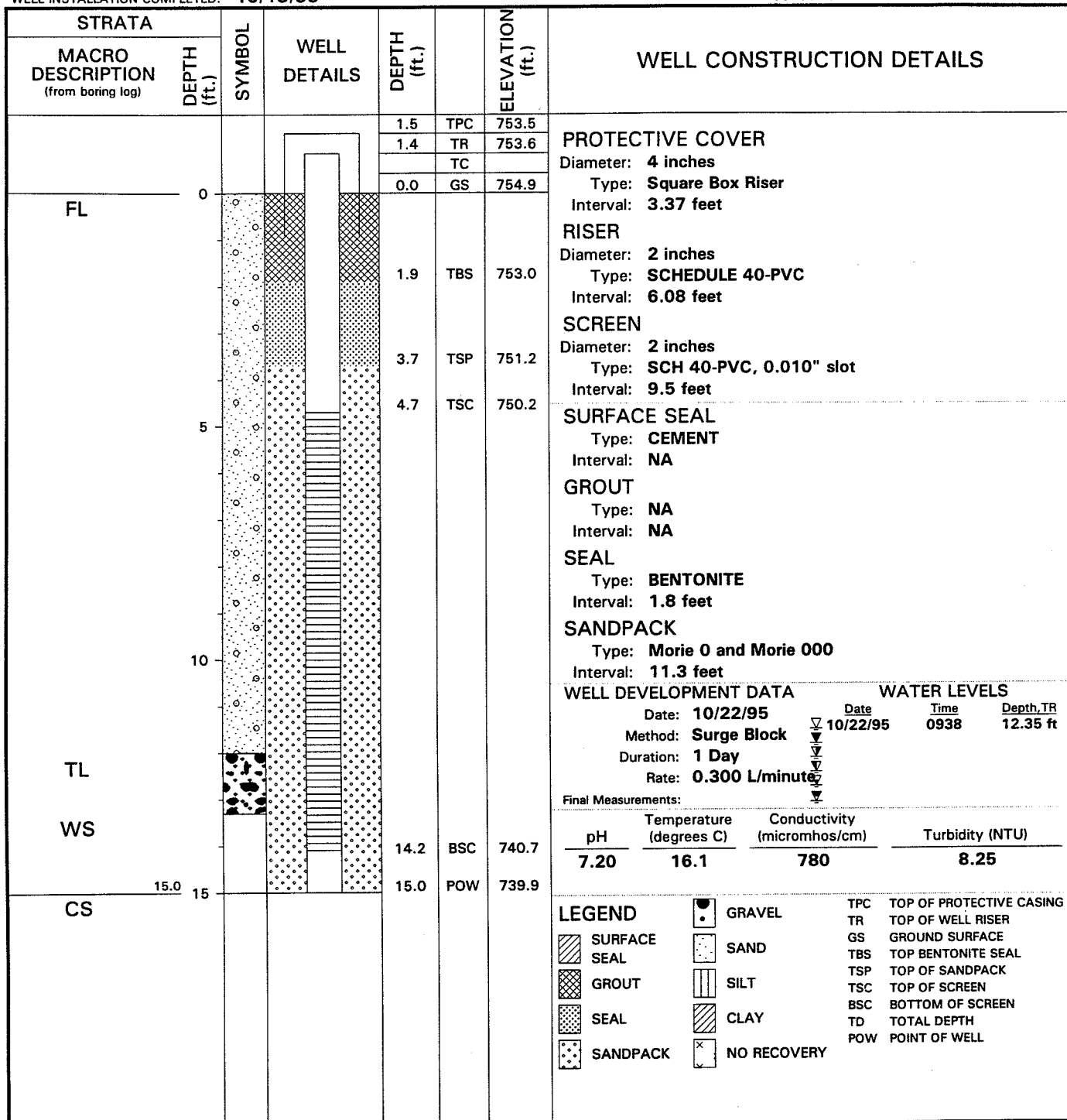
**ENGINEERING-SCIENCE, INC.** Seneca Army Depot Romulus, New York

## COMPLETION REPORT OF WELL No. MW26-10



# COMPLETION REPORT OF WELL No. MW26-11

PROJECT: <b>SEAD-25 &amp; SEAD-26 RI/FS</b> PROJECT LOCATION: <b>Seneca Army Depot Activity, Romulus, NY 14541</b> WELL LOCATION (N/E): <b>992690.3 751235.7</b> DRILLING CONTRACTOR: <b>Empire Soils Investigation, Inc.</b> DRILLING METHOD: <b>Hollow Stem Auger</b> WELL INSTALLATION STARTED: <b>10/19/95</b> WELL INSTALLATION COMPLETED: <b>10/19/95</b>	GROUND SURFACE ELEVATION: <b>754.9</b> DATUM: <b>NGVD 88</b> GEOLOGIST: <b>F. O'Loughlin</b> CHECKED BY: <b>P.Feschbach-Meriney</b> CONSULTANT:
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**ENGINEERING-SCIENCE, INC.**

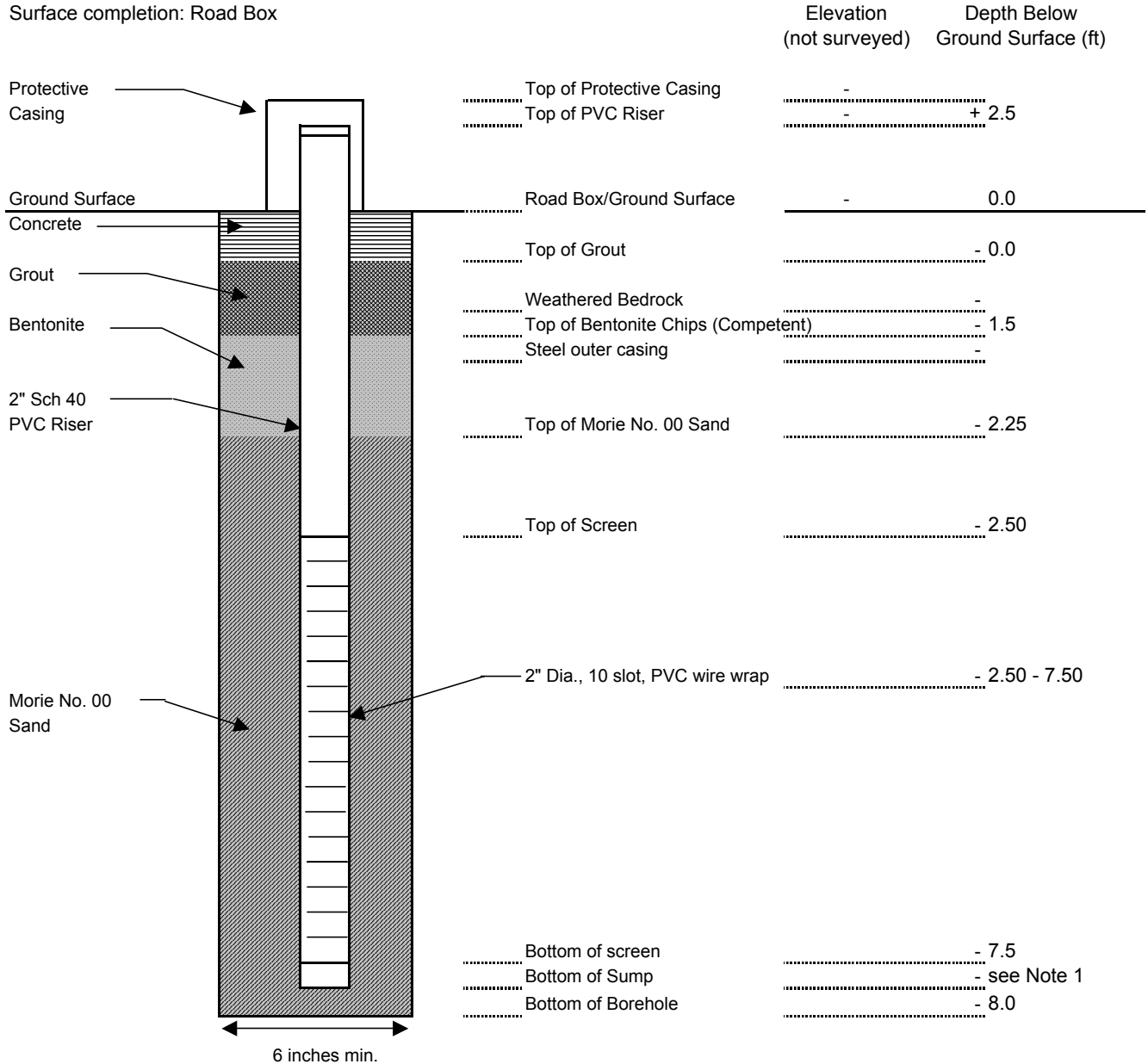
Seneca Army Depot  
Romulus, New York

**COMPLETION REPORT OF  
WELL No. MW26-11**

**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

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

Surface completion: Road Box



Not to scale

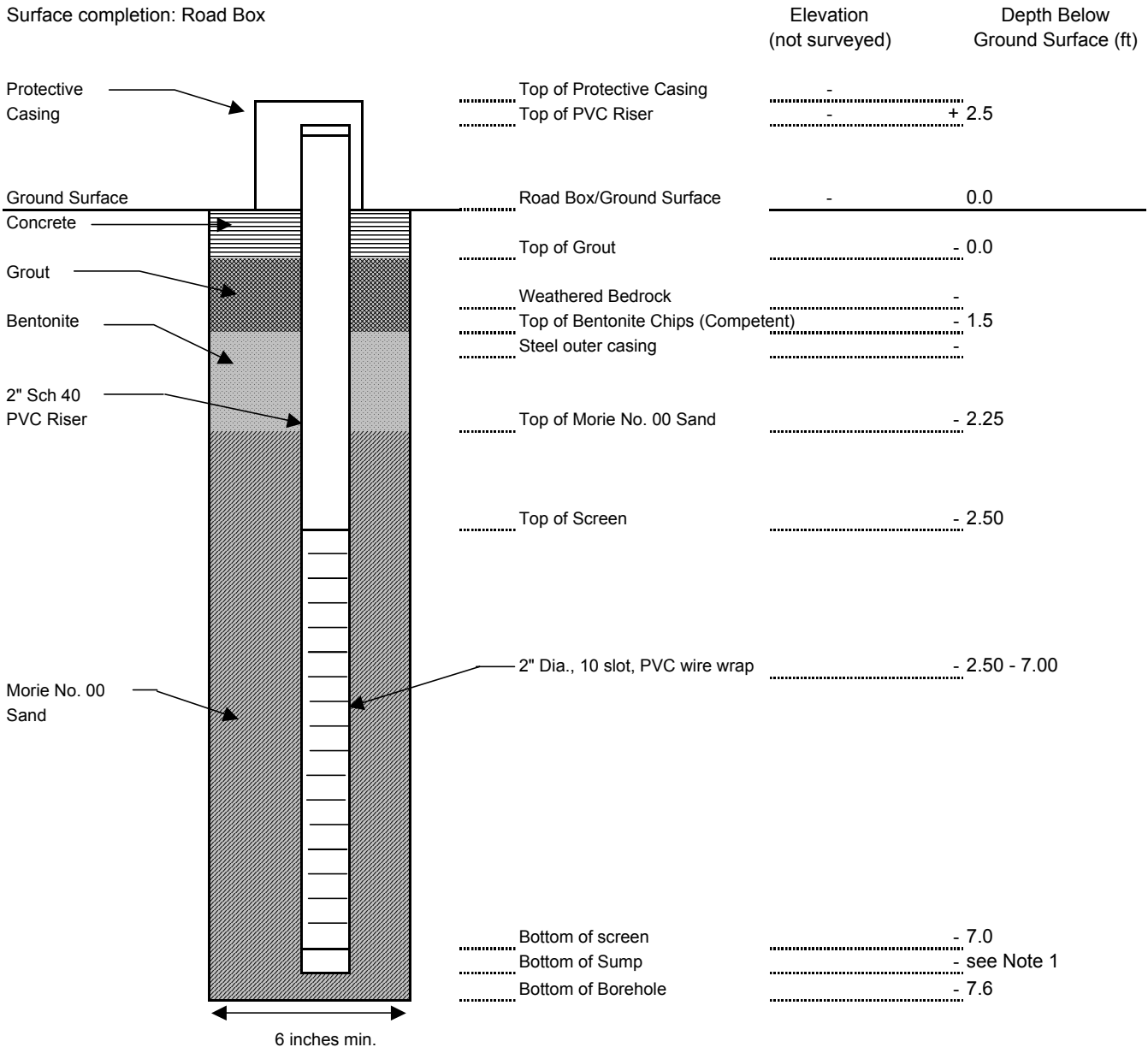
Notes:

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

**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

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

Surface completion: Road Box



Not to scale

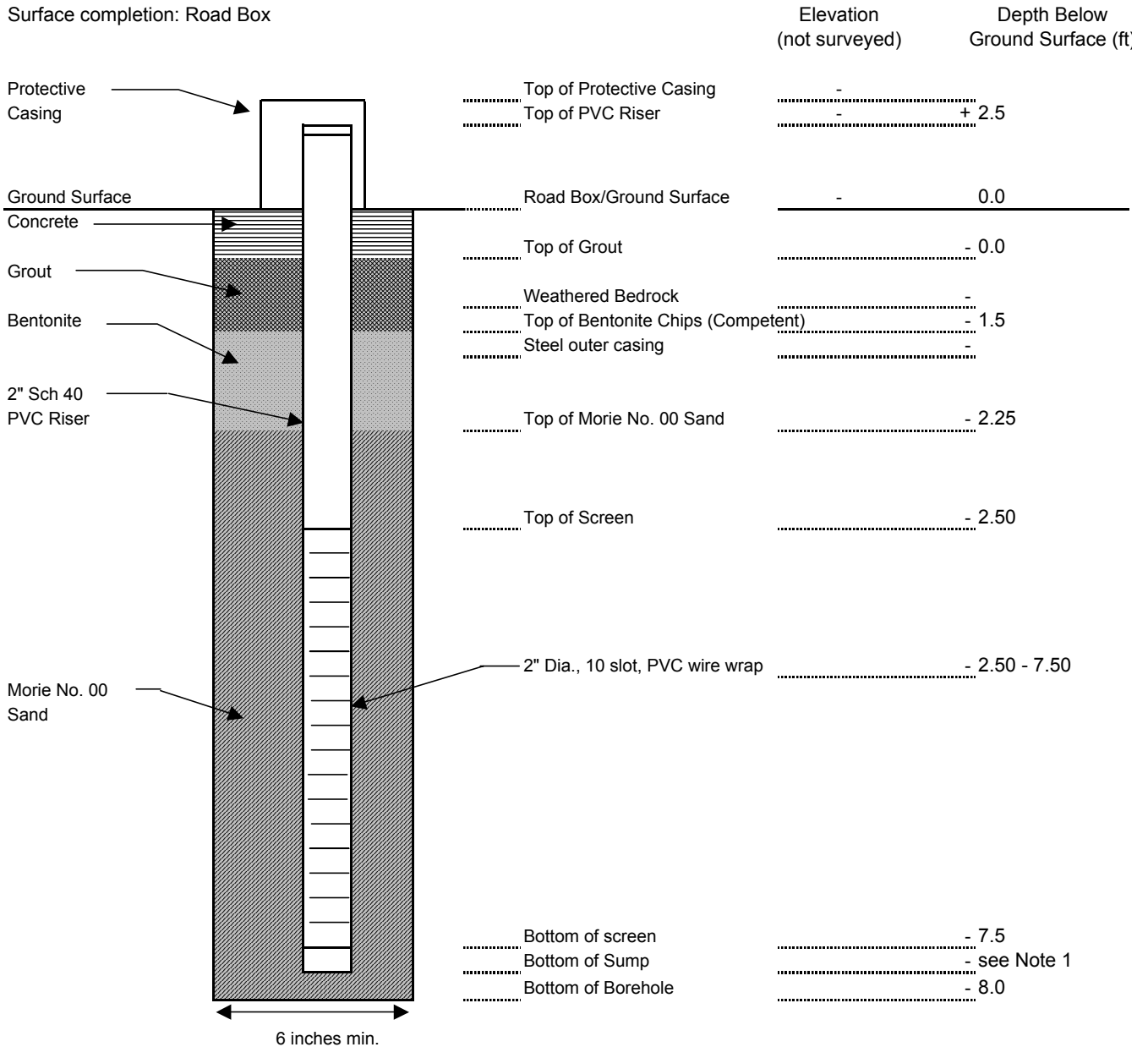
Notes:

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

## Monitoring Well Construction Detail SEAD-48 Seneca Army Depot Activity

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

Surface completion: Road Box



Not to scale

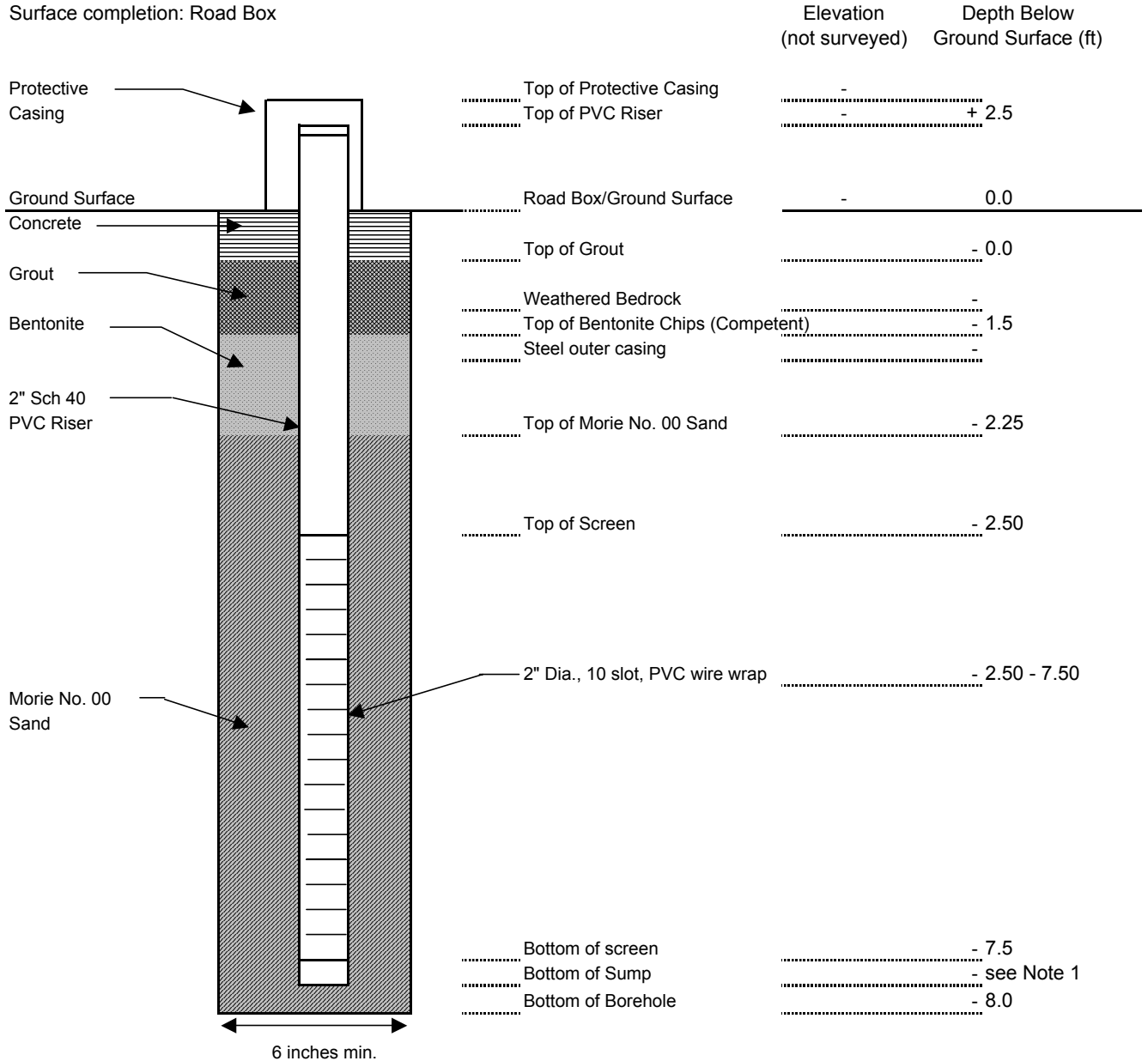
Notes:

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

**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

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

Surface completion: Road Box



Not to scale

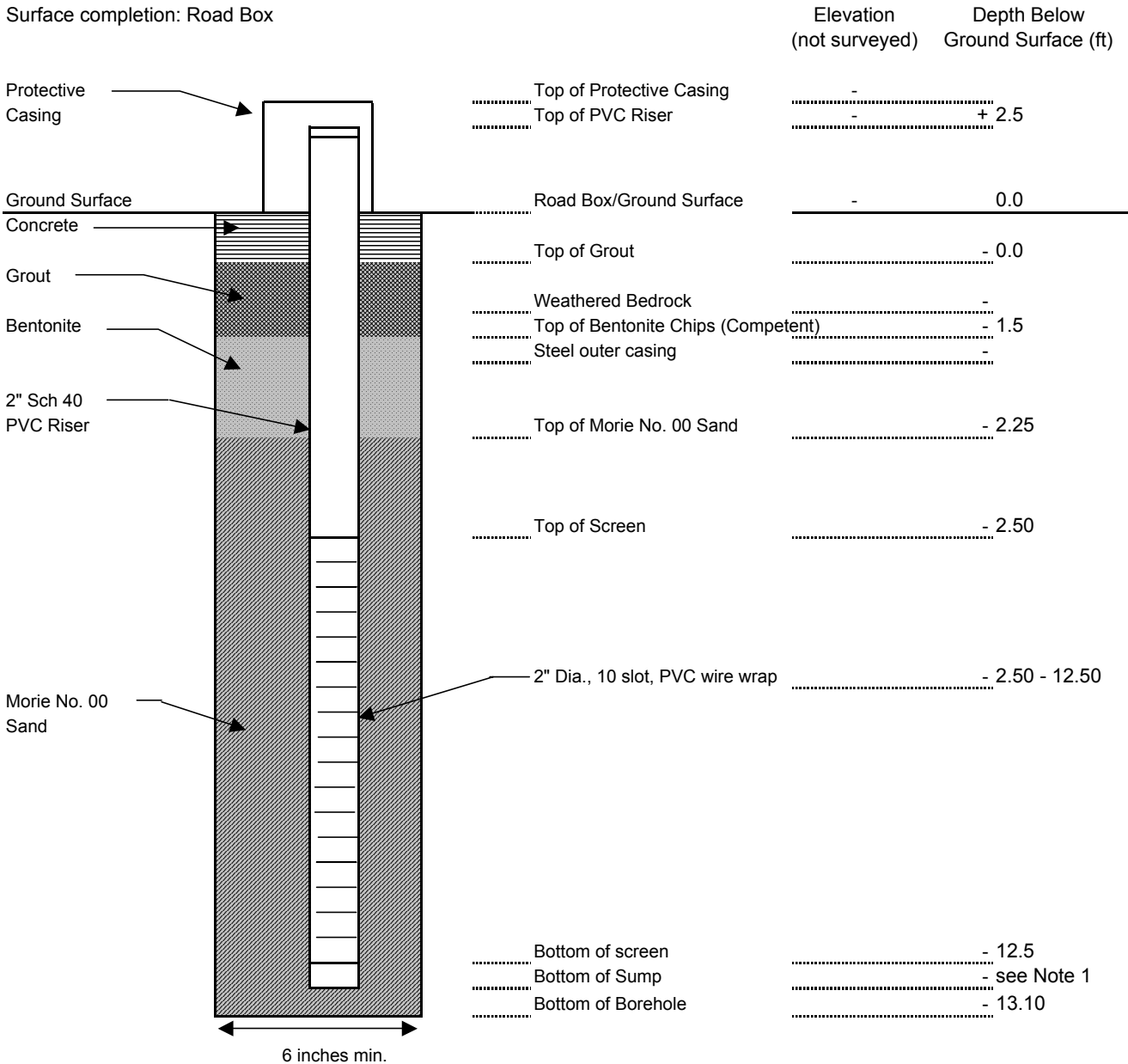
Notes:

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

## Monitoring Well Construction Detail SEAD-48 Seneca Army Depot Activity

<b>Project:</b>	SEAD-48	<b>Drilling Contractor:</b>	Lyon Drilling, Inc.
<b>Well Number:</b>	MW48-5	<b>Date Started:</b>	8/18/2003
<b>Geologist:</b>	E. Ashton	<b>Date Completed:</b>	8/18/2003

Surface completion: Road Box



Not to scale

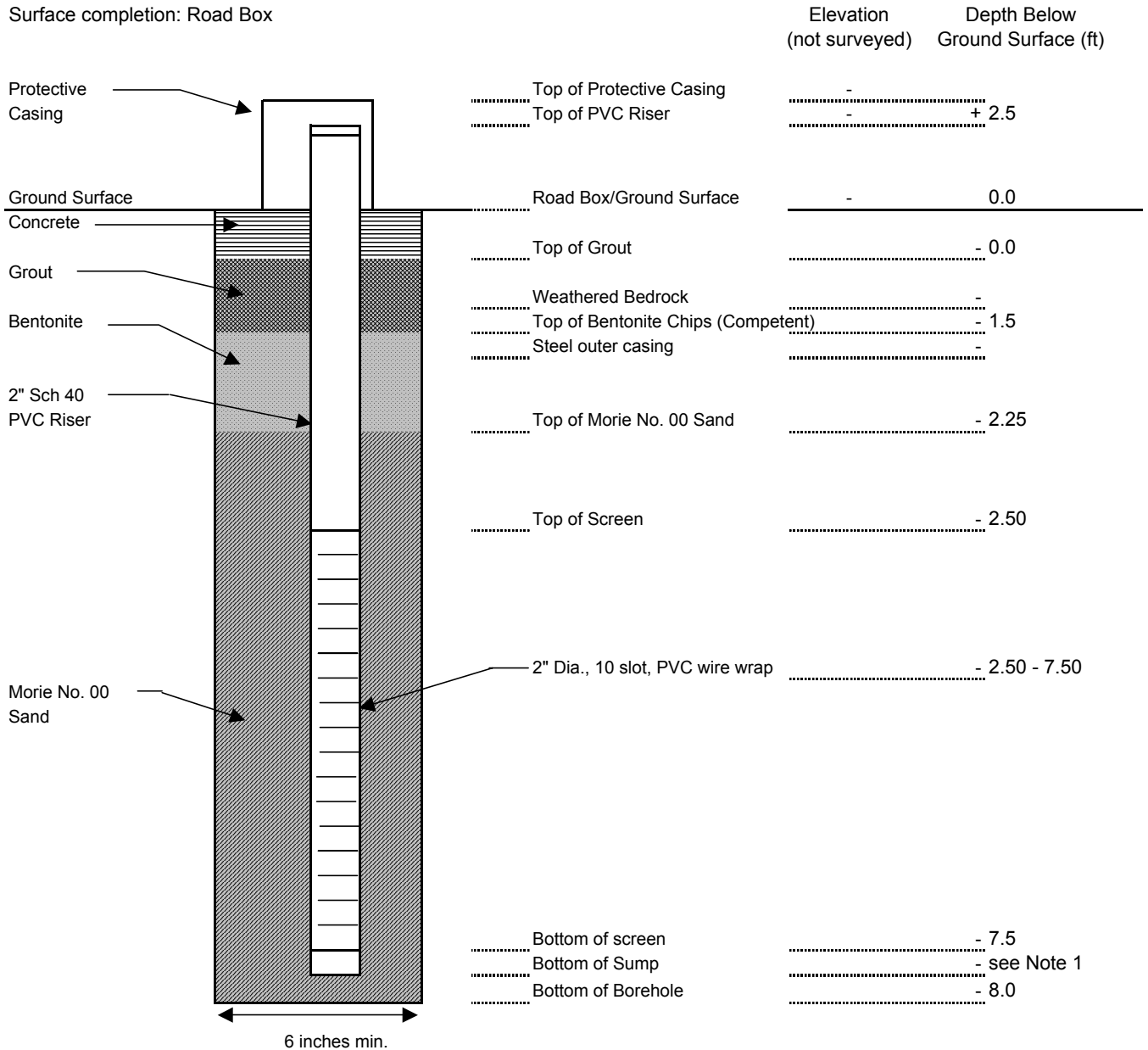
Notes:

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

**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

<b>Project:</b>	SEAD-48	<b>Drilling Contractor:</b>	Lyon Drilling, Inc.
<b>Well Number:</b>	MW48-6	<b>Date Started:</b>	8/18/2003
<b>Geologist:</b>	E. Ashton	<b>Date Completed:</b>	8/18/2003

Surface completion: Road Box



Not to scale

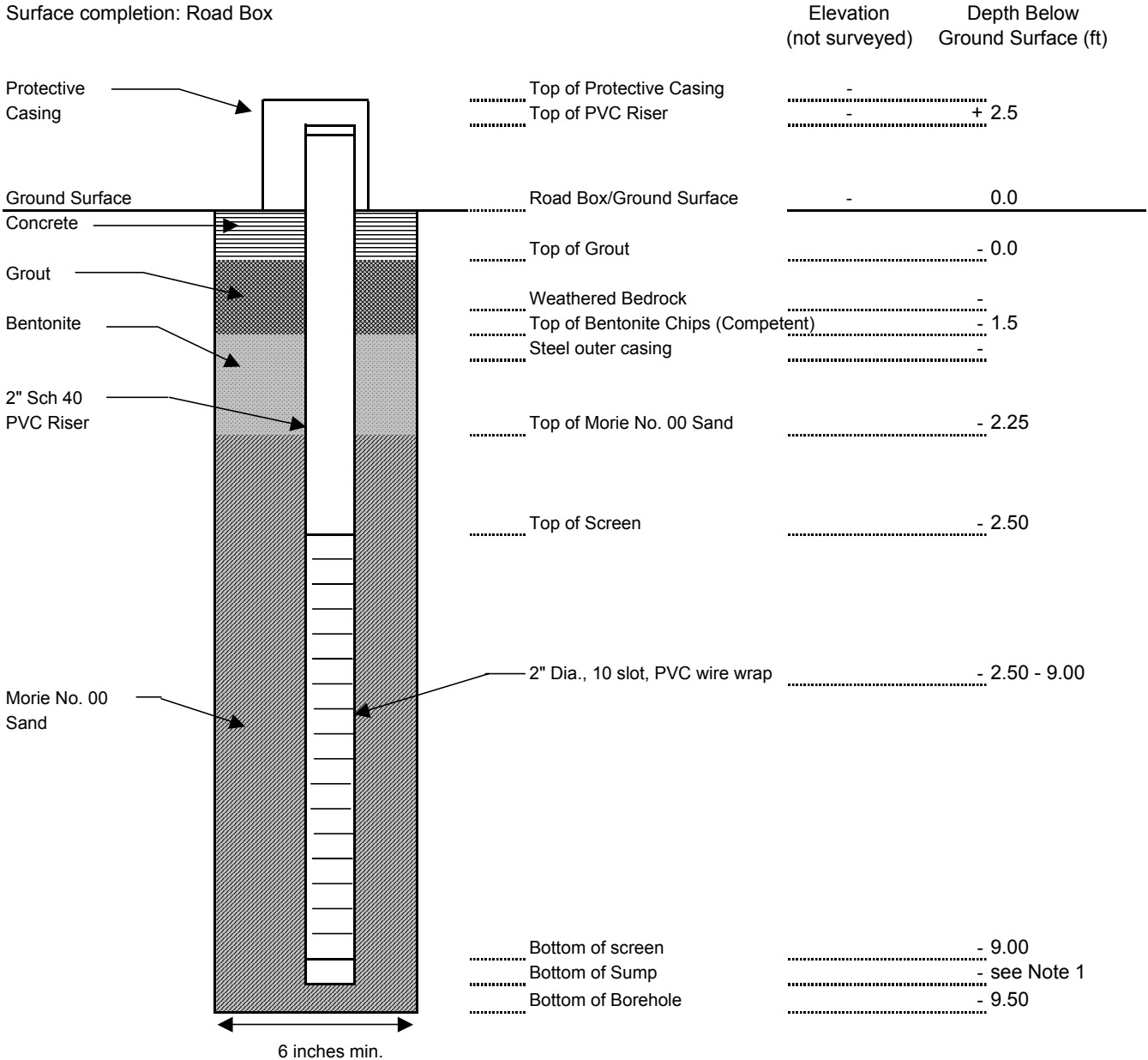
**Notes:**

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

**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

<b>Project:</b>	SEAD-48	<b>Drilling Contractor:</b>	Lyon Drilling, Inc.
<b>Well Number:</b>	MW48-7	<b>Date Started:</b>	8/19/2003
<b>Geologist:</b>	E. Ashton	<b>Date Completed:</b>	8/19/2003

Surface completion: Road Box



Not to scale

Notes:

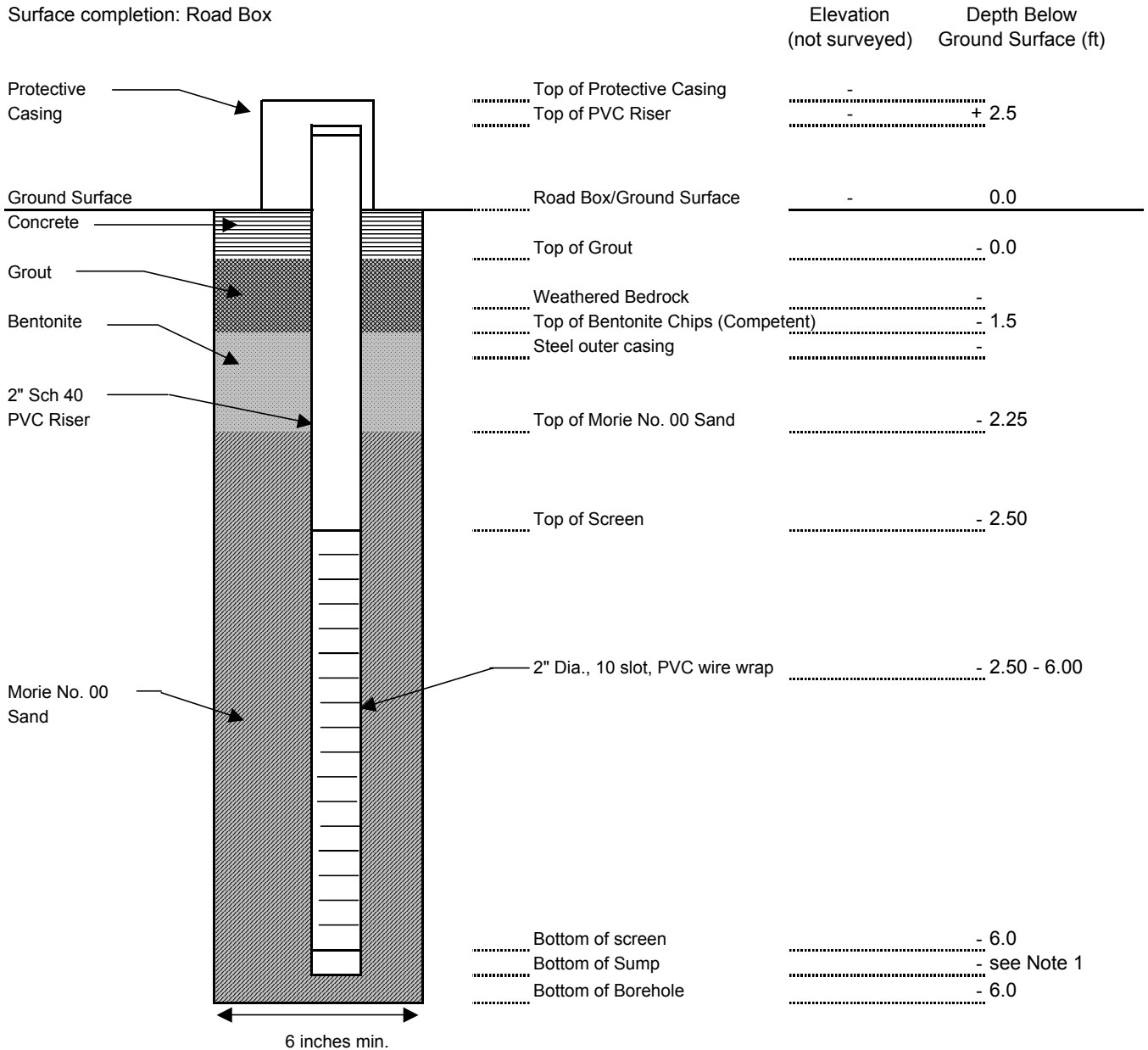
(1) 3 inch end cap installed at bottom of well screen.



**Monitoring Well Construction Detail  
SEAD-48  
Seneca Army Depot Activity**

<b>Project:</b>	SEAD-48	<b>Drilling Contractor:</b>	Lyon Drilling, Inc.
<b>Well Number:</b>	MW48-8	<b>Date Started:</b>	8/18/2003
<b>Geologist:</b>	E. Ashton	<b>Date Completed:</b>	8/18/2003

Surface completion: Road Box



Not to scale

Notes:

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

# COMPLETION REPORT OF WELL No. MW59-1

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: **03/18/94**  
 WELL INSTALLATION COMPLETED: **03/19/94**

WELL LOCATION (N/E): **998909.7 749948.8**  
 REFERENCE COORDINATE SYSTEM: **New York State Plane**  
 GROUND SURFACE ELEVATION (ft): **733.4**  
 DATUM: **NAD 1983**  
 GEOLOGIST: **F. O'LOUGHLIN**  
 CHECKED BY: **KK**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS
MICRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft)					
				TPC		<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5  <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 3.65  <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 3.95  <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 2  <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>  <b>SEAL</b> Type: <b>BENTONITE CHIPS</b> Interval: 1.2  <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 6
				TR		
				TC		
			0.0	GS	733.4	
ML	0	[Symbol]				Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 3.65  <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 3.95  <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 2  <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>  <b>SEAL</b> Type: <b>BENTONITE CHIPS</b> Interval: 1.2  <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 6  <b>WELL DEVELOPMENT DATA</b> Date: <b>3/21/94</b> Method: <b>BAIL/PUMP</b> Duration: <b>80 MIN</b> Rate: <b>2.1 L/MIN</b> Final Measurements: pH: <b>7.30</b> Temperature (degrees C): <b>5</b> Conductivity (micromhos/cm): <b>700</b> Turbidity (NTU): <b>38.9</b> Date: <b>3/21</b> Time: <b>0930</b> Depth, TR: <b>1.72</b> Date: <b>3/21</b> Time: <b>1055</b> Depth, TR: <b>3.08</b>
ML						
ML-CL			2.0	TBS	731.4	
-						
ML-CL			3.2	TSP	730.2	
-						
GM			4.2	TSC	729.2	
ML-CL	5					
GM						
GP						
-			8.1	BSC	725.3	
GM						
GM			9.2	POW	724.2	
ML-CL	10.1					
-	10					



UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York

**COMPLETION REPORT OF  
 WELL No. MW59-1**

# COMPLETION REPORT OF WELL No. MW59-2

PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b> PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b> DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b> DRILLING METHOD: <b>HOLLOW STEM AUGER</b> WELL INSTALLATION STARTED: <b>03/06/94</b> WELL INSTALLATION COMPLETED: <b>03/06/94</b>	WELL LOCATION (N/E): <b>999036.1 749874.0</b> REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b> GROUND SURFACE ELEVATION (ft): <b>734.3</b> DATUM: <b>NAD 1983</b> GEOLOGIST: <b>F. O'LOUGHLIN</b> CHECKED BY: <b>KK</b>
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STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																														
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 6.2 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 4, .9 <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.5 <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b> <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 2 <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 7.9																														
			0.0	GS		734.3																													
GM ML			1.5	TBS		732.8																													
- ML-CL			3.5	TSP		730.8																													
GM ML			4.7	TSC	729.6																														
- ML ML ML GM ML			10.5	BSC	723.8																														
- SM SM ML			11.4	POW	722.9																														
- ML GP ML GP ML ML																																			
					<b>WELL DEVELOPMENT DATA</b> Date: <b>3/8/94</b> Method: <b>BAIL/PUMP</b> Duration: <b>67 MIN</b> Rate: <b>2.1 L/MIN</b> Final Measurements:																														
					<b>WATER LEVELS</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>3/8</td> <td>1310</td> <td>3.40</td> </tr> <tr> <td>3/8</td> <td>1407</td> <td>3.60</td> </tr> </tbody> </table>	Date	Time	Depth, TR	3/8	1310	3.40	3/8	1407	3.60																					
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7.32	6.5	600	2.9																																
					<b>LEGEND</b> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"> SURFACE SEAL</td> <td style="width: 30%;"> SAND</td> <td style="width: 30%;">TPC TOP OF PROTECTIVE CASING</td> </tr> <tr> <td> GROUT</td> <td> SILT</td> <td>TR TOP OF WELL RISER</td> </tr> <tr> <td> SEAL</td> <td> CLAY</td> <td>GS GROUND SURFACE</td> </tr> <tr> <td> SANDPACK</td> <td> NO RECOVERY</td> <td>TG TOP OF GROUT</td> </tr> <tr> <td></td> <td></td> <td>TBS TOP BENTONITE SEAL</td> </tr> <tr> <td></td> <td></td> <td>TSP TOP OF SANDPACK</td> </tr> <tr> <td></td> <td></td> <td>TSC TOP OF SCREEN</td> </tr> <tr> <td></td> <td></td> <td>BSC BOTTOM OF SCREEN</td> </tr> <tr> <td></td> <td></td> <td>TD TOTAL DEPTH</td> </tr> <tr> <td></td> <td></td> <td>POW POINT OF WELL</td> </tr> </table>	SURFACE SEAL	SAND	TPC TOP OF PROTECTIVE CASING	GROUT	SILT	TR TOP OF WELL RISER	SEAL	CLAY	GS GROUND SURFACE	SANDPACK	NO RECOVERY	TG TOP OF GROUT			TBS TOP BENTONITE SEAL			TSP TOP OF SANDPACK			TSC TOP OF SCREEN			BSC BOTTOM OF SCREEN			TD TOTAL DEPTH			POW POINT OF WELL
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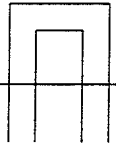


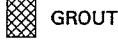








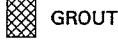








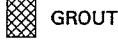






# COMPLETION REPORT OF WELL No. MW59-3

PROJECT: <b>EIGHT MODERATELY LOW PRIORITY AOCs</b>	WELL LOCATION (N/E): <b>999030.0 750345.9</b>
PROJECT LOCATION: <b>SENECA ARMY DEPOT, ROMULUS NY</b>	REFERENCE COORDINATE SYSTEM: <b>New York State Plane</b>
DRILLING CONTRACTOR: <b>EMPIRE SOILS INVESTIGATIONS</b>	GROUND SURFACE ELEVATION (ft): <b>737.7</b>
DRILLING METHOD: <b>HOLLOW STEM AUGER</b>	DATUM: <b>NAD 1983</b>
WELL INSTALLATION STARTED: <b>03/18/94</b>	GEOLOGIST: <b>F. O'LOUGHLIN</b>
WELL INSTALLATION COMPLETED: <b>03/18/94</b>	CHECKED BY: <b>KK</b>

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																
MICRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft)																																					
					TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>ROADWAY BOX</b> Interval: 3.5																																
					TR																																	
					TC																																	
	0			0.0	GS		737.7																															
GM				0.8	TBS	736.9	<b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 2.85																															
GM			2.4	TSP	735.3	<b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 3.95																																
ML			3.7	TSC	734.0	<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: .8																																
ML			5			<b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>																																
PT			7.7	BSC	730.0	<b>SEAL</b> Type: <b>BENTONITE</b> Interval: 1.6																																
- CL			8.8	POW	728.9	<b>SANDPACK</b> Type: <b>#1, #3</b> Interval:																																
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# COMPLETION REPORT OF WELL No. MW59-3A

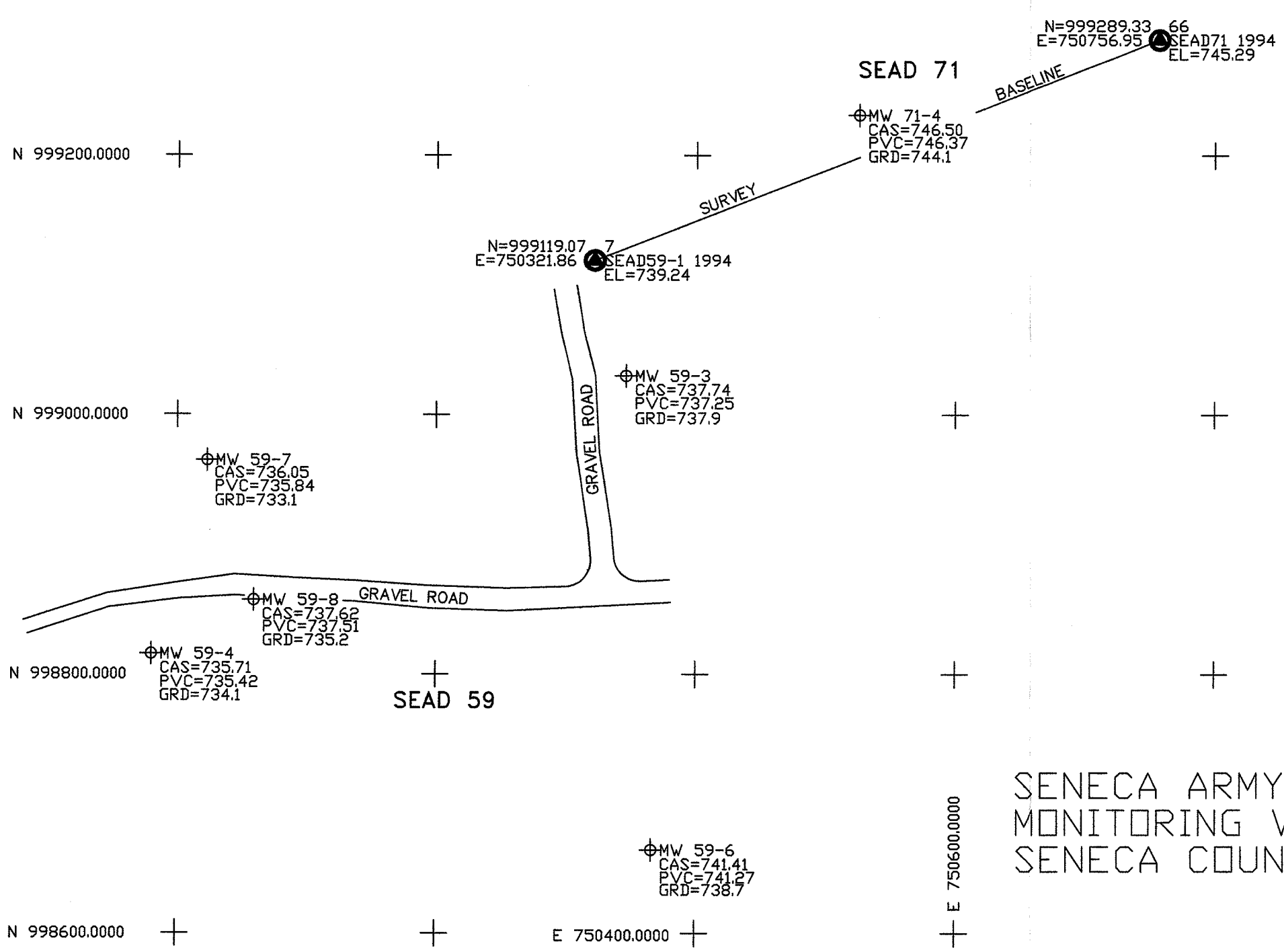
PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs** WELL LOCATION (N/E): **999026.3 750264.3**  
 PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS, NY** REFERENCE COORDINATE SYSTEM:  
 DRILLING CONTRACTOR: GROUND SURFACE ELEVATION (+): **NA**  
 DRILLING METHOD: DATUM: **NAD 1983**  
 INSTALLATION STARTED: **03/17/94** GEOLOGIST:  
 INSTALLATION COMPLETED: **03/17/94** CHECKED BY:

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																								
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UNITED STATES ARMY  
 CORPS OF ENGINEERS  
 Seneca Army Depot  
 Romulus, New York

## COMPLETION REPORT OF WELL No. MW59-3A



SENECA ARMY DEPOT SEADS 59 AND 71  
MONITORING WELLS  
SENECA COUNTY

ELEVATIONS

MW#	NORTHING	EASTING	GROUND	PVC	CASING
MW59-3	999030.0	750345.9	737.9	737.25	737.74
MW59-4	998815.5	749980.4	734.1	735.42	735.71
MW59-6	998664.3	750366.4	738.7	741.27	741.41
MW59-7	998964.9	750023.5	733.1	735.84	736.05
MW59-8	998857.1	750060.2	735.2	737.51	737.62
MW71-4	999231.2	750525.3	744.1	746.37	746.50

NOTES: FIELD WORK COMPLETED ON JUNE 8, 2004.  
HORIZONTAL DATUM IS NAD83 PER SEADS 59-1(1994) AND 71(1994) MONUMENTS.  
VERTICAL DATUM IS NAVD88 PER SEADS 59-1(1994) AND 71(1994) MONUMENTS.



**RAMIE SURVEYING, P.C.**  
6437 COLLAMER ROAD  
EAST SYRACUSE, NEW YORK 13057  
PH: 315 458-8980 FAX 315 458-8978



SENECA ARMY DEPOT  
TOWN OF ROMULUS  
SENECA COUNTY  
STATE OF NEW YORK

**MONITORING WELL LOCATION  
SEADS 59 AND 71  
FOR  
PARSONS ENGINEERING SCIENCE**

SCALE 1" = 100'  
DATE 6/17/04  
DESIGNED BY  
DRAWN BY JFR  
FILE NO. 04013-MW/1  
SHEET 1 OF 1  
JOB NO. 04.13

# COMPLETION REPORT OF WELL No. MW63-1

**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:** 06/13/94  
**WELL INSTALLATION COMPLETED:** 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

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**ENGINEERING-SCIENCE, INC.**

**UNITED STATES ARMY  
 CORPS OF ENGINEERS**  
 Seneca Army Depot  
 Romulus, New York

**COMPLETION REPORT OF  
 WELL No. MW63-1**

# COMPLETION REPORT OF WELL No. MW63-2

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: **06/14/94**  
 WELL INSTALLATION COMPLETED: **06/14/94**

WELL LOCATION (N/E): **1012979.9 741136.2**  
 REFERENCE COORDINATE SYSTEM: **New York State Plane**  
 GROUND SURFACE ELEVATION (ft): **630.9**  
 DATUM: **NAD 1983**  
 GEOLOGIST: **K. KELLY**  
 CHECKED BY: **FO**

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**ENGINEERING-SCIENCE, INC.**

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 Seneca Army Depot  
 Romulus, New York**

**COMPLETION REPORT OF  
 WELL No. MW63-2**



# COMPLETION REPORT OF WELL No. MW63-3

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: **06/14/94**  
 WELL INSTALLATION COMPLETED: **06/14/94**

WELL LOCATION (N/E): **1013181.9 741130.1**  
 REFERENCE COORDINATE SYSTEM: **New York State Plane**  
 GROUND SURFACE ELEVATION (ft): **631.8**  
 DATUM: **NAD 1983**  
 GEOLOGIST: **K. KELLY**  
 CHECKED BY: **FO**

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																												
MICRO DESCRIPTION <small>(from boring log)</small>	DEPTH (ft)																																
		TPC			<b>PROTECTIVE COVER</b> Diameter: 4 Type: <b>RISER</b> Interval: 3.5 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 4.05 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 3.95 <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1.5 <b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b> <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 1 <b>SANDPACK</b> Type: <b>#1, #3</b> #1: .4' #3: 5.4' Interval: 5.8																												
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		TC																															
		GS	0.0	631.8																													
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**COMPLETION REPORT OF  
 WELL No. MW63-3**

# 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 INSTALLATION COMPLETED: **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**  
 CHECKED BY: **FO**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																				
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																									
						<b>PROTECTIVE COVER</b> Diameter: <b>4</b> Type: <b>RISER</b> Interval: <b>3.5</b>																				
				0.0	696.7																					
ML	0					<b>RISER</b> Diameter: <b>2</b> Type: <b>SCH. 40-PVC</b> Interval: <b>3.15</b>																				
CL				1.5	695.2																					
GW				2.8	693.9	<b>SCREEN</b> Diameter: <b>2</b> Type: <b>SCH. 40-PVC/0.010</b> Interval: <b>2, 4</b>																				
CL				3.7	693.0																					
						<b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: <b>1.5</b>																				
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ML						<b>GROUT</b> Type: <b>N/A</b> Interval: <b>N/A</b>																				
SM																										
						<b>SEAL</b> Type: <b>BENTONITE CHIPS</b> Interval: <b>1.3</b>																				
SM																										
						<b>SANDPACK</b> Type: <b>#1, #3</b> #1: .5'      #3: .8' Interval: <b>8.5</b>																				
	10			10.5	686.2	<b>WELL DEVELOPMENT DATA</b> Date: <b>5/13/94</b> Method: <b>BAIL/PUMP</b> Duration: <b>360 MIN</b> Rate: <b>.5 L/MIN</b>  Final Measurements:																				
	11.3			11.3	685.4	<table border="1"> <thead> <tr> <th colspan="2">WELL DEVELOPMENT DATA</th> <th colspan="3">WATER LEVELS</th> </tr> <tr> <th>Date</th> <th>Method</th> <th>Date</th> <th>Time</th> <th>Depth, TR</th> </tr> </thead> <tbody> <tr> <td>5/13</td> <td>BAIL/PUMP</td> <td>5/13</td> <td>1130</td> <td>3.93</td> </tr> <tr> <td>5/13</td> <td></td> <td>5/13</td> <td>1450</td> <td></td> </tr> </tbody> </table>	WELL DEVELOPMENT DATA		WATER LEVELS			Date	Method	Date	Time	Depth, TR	5/13	BAIL/PUMP	5/13	1130	3.93	5/13		5/13	1450	
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- LEGEND**
- GRAVEL
  - SAND
  - SILT
  - CLAY
  - NO RECOVERY
  - SURFACE SEAL
  - GROUT
  - SEAL
  - SANDPACK
  - TPC TOP OF PROTECTIVE CASING
  - TR TOP OF WELL RISER
  - GS GROUND SURFACE
  - TBS TOP BENTONITE SEAL
  - TSP TOP OF SANDPACK
  - TSC TOP OF SCREEN
  - BSC BOTTOM OF SCREEN
  - TD TOTAL DEPTH
  - POW POINT OF WELL

# COMPLETION REPORT OF WELL No. MW67-2

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: 03/30/94  
 WELL INSTALLATION COMPLETED: 03/30/94

WELL LOCATION (N/E): 1002256.6 748953.1  
 REFERENCE COORDINATE SYSTEM: New York State Plane  
 GROUND SURFACE ELEVATION (ft): 697.7  
 DATUM: NAD 1983  
 GEOLOGIST: K.KELLY  
 CHECKED BY: FO

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS									
				TPC	<b>PROTECTIVE COVER</b> Diameter: 4 Type: RISER Interval: 3.5 <b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 4.8 <b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 4, 1.95 <b>SURFACE SEAL</b> Type: CEMENT Interval: .5 <b>GROUT</b> Type: BENTONITE/CEMENT Interval: 1.65 <b>SEAL</b> Type: BENTONITE PELLETS Interval: 1 <b>SANDPACK</b> Type: #1, #3 Interval: 8.6      #1: .5'      #3: 8.1'									
			0.0	GS		697.7								
ML			2.2	TBS		695.5								
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ML ML			10.9	BSC	686.8									
			11.8	POW	685.9									
					<b>WELL DEVELOPMENT DATA</b> Date: 5/14/94 Method: BAIL/PUMP Duration: 110 MIN Rate: Final Measurements: pH: 7.15      Temperature (degrees C): 9.0      Conductivity (micromhos/cm): 450      Turbidity (NTU): 28									
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**COMPLETION REPORT OF  
 WELL No. MW67-2**

# 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**  
 CHECKED BY: **FO**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																											
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																																
						<b>PROTECTIVE COVER</b> Diameter: 4 Type: RISER Interval: 3.5 <b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 3.15 <b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 2, 4 <b>SURFACE SEAL</b> Type: CEMENT Interval: 1.5 <b>GROUT</b> Type: N/A Interval: N/A <b>SEAL</b> Type: BENTONITE CHIPS Interval: 1.3 <b>SANDPACK</b> Type: #1, #3 Interval: 8.5 #1: .5' #3: .8'																											
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**ENGINEERING-SCIENCE, INC.**

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 Seneca Army Depot  
 Romulus, New York**

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

# 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 INSTALLATION COMPLETED: 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  
 CHECKED BY: FO

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAILS										
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																
					TPC		<b>PROTECTIVE COVER</b> Diameter: 4 Type: RISER Interval: 3.5										
					TR												
					TC												
			0.0		GS	636.5											
ML				1.5	TBS	635.0	<b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 5.2										
ML				2.5	TSP	634.0	<b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 4, .9										
CL				3.7	TSC	632.8	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1.5										
ML				5			<b>GROUT</b> Type: N/A Interval: N/A										
ML				9.6	BSC	626.9	<b>SEAL</b> Type: BENTONITE PELLETS Interval: 1										
				10.4	POW	626.1	<b>SANDPACK</b> Type: #1, #3 Interval: 7.95      #1: .8"      #3: 7.15"										
							<b>WELL DEVELOPMENT DATA</b> Date: 5/17/94 Method: BAIL/PUMP Duration: 95 MIN Rate:										
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**COMPLETION REPORT OF  
 WELL No. MW70-1**

# 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 INSTALLATION COMPLETED: **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**  
 CHECKED BY: **FO**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																			
MICRO DESCRIPTION (from boring log)	DEPTH (ft)																																								
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**COMPLETION REPORT OF  
 WELL No. MW70-2**

# COMPLETION REPORT OF WELL No. MW70-3

**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:** 04/05/94  
**WELL INSTALLATION COMPLETED:** 04/05/94

**WELL LOCATION (N/E):** 1007173.3 740552.3  
**REFERENCE COORDINATE SYSTEM:** New York State Plane  
**GROUND SURFACE ELEVATION (ft):** 636.3  
**DATUM:** NAD 1983  
**GEOLOGIST:** K. KELLY  
**CHECKED BY:** FO

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																	
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**COMPLETION REPORT OF**  
**WELL No. MW70-3**

# COMPLETION REPORT OF WELL No. MW70-4

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 INSTALLATION COMPLETED: **05/11/94**

WELL LOCATION (N/E): **1007055.2 740563.3**  
 REFERENCE COORDINATE SYSTEM: **New York State Plane**  
 GROUND SURFACE ELEVATION (ft): **636.3**  
 DATUM: **NAD 1983**  
 GEOLOGIST: **F. O'LOUHGLIN**  
 CHECKED BY: **FO**

STRATA		SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																								
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## COMPLETION REPORT OF WELL No. MW70-4



# 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 INSTALLATION COMPLETED:** 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  
**CHECKED BY:** FO

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																								
				TPC	<b>PROTECTIVE COVER</b> Diameter: .7 Type: ROADWAY BOX Interval: 1																								
				TR																									
				TC																									
			0.0	GS		747.1																							
ML			1.5	TBS	745.6	<b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 3.5																							
CL			3.0	TSP	744.1	<b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 4																							
CL			4.3	TSC	742.8	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1.5																							
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**ENGINEERING-SCIENCE, INC.**

**UNITED STATES ARMY**  
**CORPS OF ENGINEERS**  
 Seneca Army Depot  
 Romulus, New York

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

# 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 INSTALLATION COMPLETED: **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**  
 CHECKED BY: **FO**

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																								
				TPC	<b>PROTECTIVE COVER</b> Diameter: 8 Type: <b>ROADWAY BOX</b> Interval: 1 <b>RISER</b> Diameter: 2 Type: <b>SCH. 40-PVC</b> Interval: 3.2 <b>SCREEN</b> Diameter: 2 Type: <b>SCH. 40-PVC/0.010</b> Interval: 2 <b>SURFACE SEAL</b> Type: <b>CEMENT</b> Interval: 1 <b>GROUT</b> Type: <b>BENTONITE/CEMENT</b> Interval: 1.3 <b>SEAL</b> Type: <b>BENTONITE PELLETS</b> Interval: 1 <b>SANDPACK</b> Type: <b>#1, #3</b> Interval: 3.8      #1: .5'    #3: 3.3'																																								
			0.0	GS		747.3																																							
- GM CL	-		1.8	TBS		745.5																																							
GM CCL CCL CL CL	-		2.8	TSP		744.5																																							
			3.8	TSC	743.5																																								
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- ML	-		6.6	POW	740.7																																								
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Date	Time	Depth, TR																																											
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4/28	0845	5.59																																											
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**COMPLETION REPORT OF  
 WELL No. MW71-2**

# 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 INSTALLATION COMPLETED: **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**  
 CHECKED BY: **FO**

STRATA	SYMBOL	WELL DETAILS	DEPTH (ft)	ELEVATION (ft)	WELL CONSTRUCTION DETAILS																																			
					<b>PROTECTIVE COVER</b> Diameter: 4 Type: RISER Interval: 3.5																																			
			0.0	744.5																																				
ML			1.7	742.8	<b>RISER</b> Diameter: 2 Type: SCH. 40-PVC Interval: 4.75																																			
ML			2.7	741.8																																				
ML			3.6	741.0	<b>SCREEN</b> Diameter: 2 Type: SCH. 40-PVC/0.010 Interval: 1.95																																			
ML			5.5	739.0																																				
GM-GC			6.4	738.2	<b>SURFACE SEAL</b> Type: CEMENT Interval: 1.7  <b>GROUT</b> Type: N/A Interval: N/A  <b>SEAL</b> Type: BENTONITE PELLETS Interval: 1  <b>SANDPACK</b> Type: #1, #3      #1: .5'      #3: 3.15' Interval: 3.65																																			
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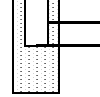
**COMPLETION REPORT OF  
 WELL No. MW71-3**

Contractor: SJB					PARSONS DRILLING RECORD					BORING/ WELL NO. MW-119-1														
Driller: Walt Ketter					PROJECT NAME: Seneca Army Depot-SEAD 119					Location Description:														
Inspector: Ed Ashton					PROJECT NUMBER: 739855.01002					Former Small Arms Range														
Rig Type: ATV-CME-850										Near Lake Shore Housing														
GROUNDWATER OBSERVATIONS										Weather: Sunny - 70°F					Location Plan									
Water Level (bgs) 17'										Date/Time Start: August 6, 2002 -1510					See Site Plan									
Date 8/8/02										Date/Time Finish: August 6, 2002 -1755														
Time 0953										FIELD IDENTIFICATION OF MATERIAL					SCHEMATIC					COMMENTS				
Meas. From TOC																								
Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)																				
+3																								
+2																								
+1																								
0																								
1		4	50	NA	(0'-2'):Brown, silt with fine sand, trace fine sand, roots, dry. (SM)																			
2		6																						
2		7																						
3		9																						
3		23	100	NA	(2'-4'):Brown, silt with fine sand, fine-medium gravel, dry. (SM)																			
3		15																						
4		19																						
4		23																						
5		19	50	NA	(4'-6'):Brown, silt with fine sand, trace fine gravel, black shale fragments, di (ML/SM)-Till																			
5		28																						
6		34																						
6		36																						
7		31	10	NA	(6'-8'):Same As Above. (ML/SM)- Til																			
7		35																						
8		41																						
8		47																						
9		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 HSA:																			
10																								
10		50/4	10	NA	(10'-10.4'): Same As Above. (ML/SM)- Til																			
11					Refusal at 10.4 feet. Drilled to 12 feet with HSA:																			
12																								
12		50/1	0	NA	(12'-12.1'): No recovery																			
13					Refusal at 12.1 feet. Drilled to 14 feet with HSA:																			
14																								
14		50/1	0	NA	(14'-14.1'): No recovery																			
15					Refusal at 14.1 feet. Drilled to 16 feet with HSA:																			
16																								
16		50/0	0	NA	No recovery																			
17					Refusal at 16 feet. Drilled to 20 feet with HSA:																			
18																								

**COMMENTS:**

No environmental samples collected.  
 Drilled to 20 feet bgs from 16 feet bgs due to last three split spoons had no recovery.

**SAMPLING METHOD**  
 SS = SPLIT SPOON  
 A = AUGER CUTTINGS  
 C = CORED

<b>Contractor:</b> <u>SJB</u> <b>Driller:</b> <u>Walt Ketter</u> <b>Inspector:</b> <u>Ed Ashton</u> <b>Rig Type:</b> <u>ATV-CME-850</u>					<b>PARSONS</b>					Sheet <u>2</u> of <u>2</u>							
					<b>DRILLING RECORD</b>					<b>BORING/ WELL NO. MW-119-1</b>							
					<b>PROJECT NAME:</b> <u>Seneca Army Depot-SEAD 119</u>					<b>Location Description:</b>							
					<b>PROJECT NUMBER:</b> <u>739855.01002</u>					<u>Former Small Arms Range</u>							
										<u>Near Lake Shore Housing</u>							
<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> <u>Sunny - 70°F</u>					<b>Location Plan</b> ↑ N ↓ See Site Plan							
Water Level (bgs)																	
Date																	
Time																	
Meas. From																	
					<b>FIELD IDENTIFICATION OF MATERIAL</b>					<b>SCHEMATIC</b>		<b>COMMENTS</b>					
<b>Sample Depth</b>	<b>Sample I.D.</b>	<b>SPT</b>	<b>% Rec.</b>	<b>PID (ppm)</b>		Boring terminated at 20 feet bgs.											
19																	
20																	
<b>SAMPLING METHOD</b> SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED					<b>COMMENTS:</b> See page 1 comments.												
					_____												
					_____												

Contractor: SJB					PARSONS DRILLING RECORD					BORING/ WELL NO. MW-119-2	
Driller: Walt Ketter					PROJECT NAME: Seneca Army Depot-SEAD 119					Location Description:	
Inspector: Ed Ashton					PROJECT NUMBER: 739855.01002					Former Small Arms Range	
Rig Type: ATV-CME-850										Near Lake Shore Housing	
GROUNDWATER OBSERVATIONS					Weather: Sunny - 70°F					Location Plan	
Water Level (bgs)	8.20'									See Site Plan	
Date	8/8/02									↑ N	
Time	0830										
Meas. From	TOC										
Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL					SCHEMATIC	COMMENTS
+3											
+2											
+1											
0											
1		5	50	NA	(0'-2'): Brown, silt with fine sand, roots, trace fine gravel, dry. (SM)						
2		7									
3		11									
4		11									
5		15	100	NA	(2'-4'): Brown, silt with trace-fine sand, fragments of black shale, dry. (ML/SM)-Till						
6		17									
7		19									
8		25									
9		18	100	NA	(4'-6'): Brown, silt with trace fine sand, fine-medium gravel, fragments of black shale, dry. (ML/SM)-Till						
10		21									
11		18									
12		22									
13		50/4	5	NA	(6'-6.4'): Brown, silt with trace clay, black shale, dry. (ML/SM)- T Refusal at 6.4 feet. Drilled to 8 feet with HSA:						
14											
15		10	80	NA	(8'-10'): Brown, silt with trace clay, black shale, dry to moist. (ML/SM)-T						
16		27									
17		34									
18		47									
19		13	100	NA	(10'-12'): Same As Above. (ML/SM)-Til						
20		24									
21		44									
22		45									
23		50/3	5	NA	(12'-12.3'): Same As Above. (ML/SM)-Til Refusal at 12.3 feet. Drilled to 14 feet with HSA:						
24											
25		38	50	NA	(14'-15.7'): Brown to grey, silt with trace clay, black shale, dry to moist. (ML/SM)-1 Refusal at 15.7 feet. Drilled to 20 feet with HSA:						
26		35									
27		27									
28		50/2									
29											
30											
31											
32											
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100											

**Contractor:** SJB  
**Driller:** Walt Ketter  
**Inspector:** Ed Ashton  
**Rig Type:** ATV-CME-850

**PARSONS  
 DRILLING RECORD**

**PROJECT NAME:** Seneca Army Depot-SEAD 119  
**PROJECT NUMBER:** 739855.01002

Sheet 2 of 2

**BORING/  
 WELL NO. MW-119-2**

**Location Description:**  
 Former Small Arms Range  
 Near Lake Shore Housing

GROUNDWATER OBSERVATIONS										
Water										
Level (bgs)										
Date										
Time										
Meas.										
From										


**Weather:** Sunny - 70°F

**Date/Time Start:** August 6, 2002 - 0940

**Date/Time Finish:** August 6, 2002 - 1417

**Location Plan**

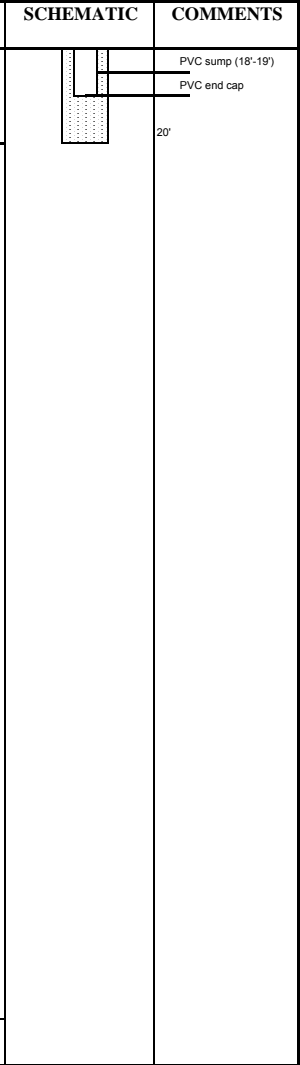
See Site Plan



Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)
19				
20				

**FIELD IDENTIFICATION OF MATERIAL**

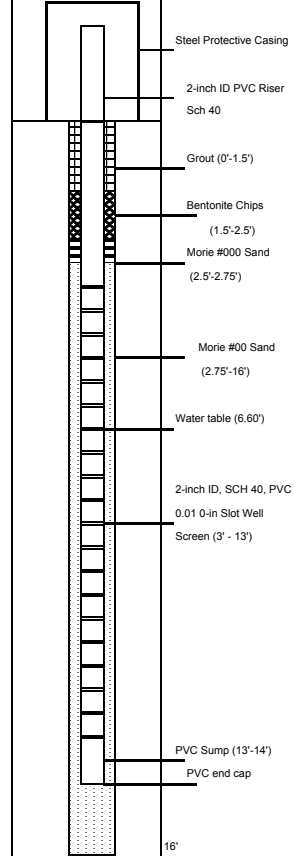
Boring terminated at 20 feet bgs.



**SAMPLING METHOD**  
 SS = SPLIT SPOON  
 A = AUGER CUTTINGS  
 C = CORED

**COMMENTS:**  
 See page 1 comments.

Contractor: SJB					PARSONS DRILLING RECORD					BORING/ WELL NO. MW-119-3	
Driller: Walt Ketter					PROJECT NAME: Seneca Army Depot-SEAD 119					Location Description:	
Inspector: Ed Ashton					PROJECT NUMBER: 739855.01002					Former Small Arms Range	
Rig Type: ATV-CME-850										Near Lake Shore Housing	
GROUNDWATER OBSERVATIONS					Weather: Cloudy - 80°F					Location Plan	
Water Level (bgs)	8.62'									See Site Plan	
Date	8/8/02									↑ N	
Time	0844										
Meas. From	TOC										
Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL					SCHMATIC	COMMENTS
+3											
+2											
+1											
0											
1		3	50	NA	(0'-2'): Brown, silt with fine sand, roots, trace fine gravel, dry. (SM)						
2		8									
3		10	50	NA	(2'-4'): Brown, silt with trace-fine sand, fragments of black shale, dry. (ML/SM)-Till						
4		18									
5		25									
6		25									
7		37									
8		13	80	NA	(4'-6'): Brown, silt with fine sand, trace-fine gravel, trace clay, d (ML/SM)-Till						
9		16									
10		16									
11		19									
12		13	40	NA	(6'-7.5'): Same As Above With the Exception of Fragments of Black Shale Present. (ML/SM)-Til						
13		21									
14		32			Refusal at 7.5 feet. Drilled to 8 feet with HSA:						
15		50/0									
16		14	20	NA	(8'-8.8'): Same As Above. (ML/SM)-Til						
17		50/3									
18											
19		32	10	NA	(10'-10.9'): Brown, silt with black shale, trace fine sand, dry. (ML/SM)-T						
20		50/4									
21											
22		34	10	NA	(12'-12.6'): Grey, silt with clay, black shale, moist to wet at 12.6 fe (ML/SM)-Till.						
23		50/1									
24											
25											
26		50/0	0	NA	Refusal at 14.0 feet; Tip of spoon wet						
27											
28											
29											
30											
31											
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SAMPLING METHOD					COMMENTS:						
SS = SPLIT SPOON					No environmental samples collected.						
A = AUGER CUTTINGS											
C = CORED											





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

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

Well ID	Well Type	Point of Well Relative to Ground Surface (ft)	Point of Well Relative to Top of PVC (ft)	Diameter of Boring (in)	Diameter of Well (in)	Well Screen Length (ft)	Screened Interval Relative to TOC (ft)			Well Screen Slot Size (in)	Ground Surface Elevation	Elevation of Top of PVC Well (MSL)	Elevation of Top of Casing	Height of PVC Well Stickup (ft)	Well Casing Material	Well Screen Material
							from	to	at							
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 Aquifer

# OVERBURDEN BORING REPORT

**PARSONS**

CLIENT: UDA COE

BORING NO.: SB Demo-24

COMMENTS:

DRILLER: Harry Lyon

INSPECTOR: Rossmann / mcAllister

DATE: 10/25/12

DEPTH T H (FT)	SAMPLING			SAMPLE			SAMPLE DESCRIPTION <small>(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)</small>	USCS CLASS	STRATUM CLASS
	BLOWS PER 6 INCHES	PENE- TRATION RANGE (FEET)	RECOV- ERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC			
2	7 12 20 15 4	2'	2'				Moist Fill material - Rocky (Angular/subangular)		
4	8 12 14 4	2'	1'				Perched Ho 10" wet Grey clay w/silt Angular rock frag throughout.		
5	4 15	1.9'	1'				Moist Grey clay. Bricks @ 5ft 5" weathered bedrock		
6	5 5/8" 5 1/4"	4"	3"				weathered shale - dry		
8	5 1/4"	1"	-				NO recovery. Spoon Retrieval		
10									
15									
20									

# OVERBURDEN BORING REPORT

<b>PARSONS</b>	CLIENT: <u>WACO</u>	BORING NO.: <u>MW Demo-3</u>
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PROJECT: <u>PED</u>	START DATE: <u>10/29/02</u>
SWMU # (AREA): <u>DEMO</u>	FINISH DATE: <u>+</u>
SOP NO.: <u>741175</u>	CONTRACTOR: <u>Lyon Drilling</u>

DRILLING SUMMARY						
DRILLING METHOD	HOLE DIA. (ft)	DEPTH INTERVAL (ft)	SAMPLER		HAMMER	
			SIZE	TYPE	TYPE	WT/FALL
<u>HSA</u>		<u>0-8</u>	<u>2"</u>	<u>SS</u>		

DRILLER: <u>Harry / Rick</u>
INSPECTOR: <u>Jenn / Ben</u>
CHECKED BY: _____
CHECK DATE: _____
BORING CONVERTED TO MW? <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Y</span> N

### DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRLSC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	SI	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

### MONITORING EQUIPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND			CALIBRATION		WEATHER (TEMP., WIND, ETC.)
			READING	TIME	DATE	TIME	DATE	

### MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

### INVESTIGATION DERIVED WASTE

DATE	<u>10/29/02</u>		
SOIL AMOUNT : (fraction of drum)	<u>1/2 drum</u>		
DRUM #, LOCATION:			

<b>COMMENTS:</b>  	<b>SAMPLES TAKEN: <u>None</u></b>  SAMPLES _____ DUPLICATES _____ MS/MSD _____ MRD _____
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# OVERBURDEN BORING REPORT

**PARSONS**

CLIENT: WA-COE

BORING NO.: MWDKmo-3

COMMENTS:

*No soil samples collected*

DRILLER: Henry Lyon

INSPECTOR: Rossmann/McMurtre

DATE: 10/9/02

DEPTH (FT)	SAMPLING			SAMPLE				SAMPLE DESCRIPTION <small>(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)</small>	USCS CLASS	STRATUM CLASS
	BLOWS PER 6 INCHES	PENETRATION RANGE (FEET)	RECOVERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC	RAD SCRIN			
5	8							Dry Rock Gray	7	
14										
17		2'	1'					Slightly moist Brown silt	m2	
13										
27								moist Brown silt w/ weathered shale at bottom (dry)	m2	
7		2'	1'							
9								weathered shale - dry.	-	
14										
4										
5		2'	1'							
6										
		8"	10"							
8										
10										
15										
20										

# OVERBURDEN BORING REPORT

<b>PARSONS</b>	CLIENT: <u>WACO</u>	BORING NO.: <u>MW DRMO-4</u>
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PROJECT: <u>P20</u>	START DATE: <u>10/29/02</u>
SWMU # (AREA): <u>DRMO</u>	FINISH DATE: <u>↓</u>
SOP NO.: <u>741175</u>	CONTRACTOR: <u>Harry Lynn Drilly</u>

DRILLING SUMMARY						
DRILLING METHOD	HOLE DIA. (R)	DEPTH INTERVAL (R)	SAMPLER		HAMMER	
			SIZE	TYPE	TYPE	WT/FALL
<u>HSA</u>	<u>1/4</u>	<u>0-8</u>	<u>2"</u>	<u>SS</u>		

DRILLER: <u>Harry / Rick</u>
INSPECTOR: <u>Tom / Ben</u>
CHECKED BY: _____
CHECK DATE: _____
BORING CONVERTED TO MW? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N

### DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRLSC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	SI	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

### MONITORING EQUIPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND			CALIBRATION		WEATHER (TEMP., WIND, ETC.)
			READING	TIME	DATE	TIME	DATE	

### MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

### INVESTIGATION DERIVED WASTE

DATE	<u>10/29/02</u>		
SOIL AMOUNT: (fraction of drum)	<u>1/2 drum</u>		
DRUM #, LOCATION:			

<b>COMMENTS:</b>  	<b>SAMPLES TAKEN: <u>NONE</u></b>  SAMPLES _____ DUPLICATES _____ MS/MSD _____ MRD _____
--------------------------	---

# OVERBURDEN BORING REPORT

**PARSONS**

CLIENT: UDA CoE

BORING NO.: MW DEMO-4

COMMENTS:

DRILLER: Harry Lynn / Rick

INSPECTOR: Rossmann / McAllister

DATE: 10/24/02

DEPTH T H (FT)	SAMPLING			SAMPLE				SAMPLE DESCRIPTION  <small>(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)</small>	USCS CLASS	STRATUM CLASS
	BLOWS PER 6 INCHES	PENE- TRATION RANGE (FEET)	RECOV- ERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC	RAD SCRN			
6	8							moist Brown (dk) SILT last 3" 9" of rock (dry)	ML	
2	5	2'	1'							
7	5							moist Grey SILT w/ some dry weathered shale last 2" trace of clay.	ML	
4	7	2'	1'							
5	10							dry weathered shale	-	
5	32	2'	1'							
6	24							no recovery Refusal Split spoon	-	
6	5 1/2"	8"	6"							
8		1"	-							
10										
15										
20										

# OVERBURDEN BORING REPORT

<b>PARSONS</b>	CLIENT: <u>WDACOE</u>	BORING NO.: <u>MWDKMO-6</u>
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PROJECT: <u>PID</u>	START DATE: <u>10/29/02</u>
SWMU # (AREA): <u>DKMO</u>	FINISH DATE: <u>↓</u>
SOP NO.: <u>741175</u>	CONTRACTOR: <u>Zyon Drilly</u>

DRILLING SUMMARY						
DRILLING METHOD	HOLE DIA. (ft)	DEPTH INTERVAL (ft)	SAMPLER		HAMMER	
			SIZE	TYPE	TYPE	WT/FALL
<u>HSA</u>	<u>6"</u>	<u>0-8</u>	<u>2"</u>	<u>SS</u>		

DRILLER: <u>Henry / Rick</u>
INSPECTOR: <u>Ben / Jim</u>
CHECKED BY: _____
CHECK DATE: _____
BORING CONVERTED TO MW? <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Y</span> N

DRILLING ACRONYMS					
HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT-SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRS LC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	SI	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

MONITORING EQUIPMENT SUMMARY								
INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND			CALIBRATION		WEATHER (TEMP., WIND, ETC.)
			READING	TIME	DATE	TIME	DATE	

MONITORING ACRONYMS					
PID	PHOTO-IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME-IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

INVESTIGATION DERIVED WASTE			
DATE	<u>10/29/02</u>		
SOIL AMOUNT : (fraction of drum)	<u>1/2 drum</u>		
DRUM #, LOCATION:			

<b>COMMENTS:</b>  	<b>SAMPLES TAKEN:</b> <u>None</u>  SAMPLES _____ DUPLICATES _____ MS/MSD _____ MRD _____
--------------------------	---

# OVERBURDEN BORING REPORT

**PARSONS**

CLIENT: USA COE

BORING NO.: MWDemo -6

COMMENTS:

DRILLER: Harry Lyon

INSPECTOR: Rossmann / McAllister

DATE: 10/29/02

DEPTH (FT)	SAMPLING			SAMPLE			SAMPLE DESCRIPTION <small>(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)</small>	USCS CLASS	STRATUM CLASS
	BLOWS PER 6 INCHES	PENE- TRATION RANGE (FEET)	RECOV- ERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC			
2	4 10 11 8 4	2'	3/4'				Rocky Fill	-	
4	6 9 14	2'	1'				moist w/dy Brown silt, stiff	ML	
5	<del>8</del> 20/2"	8"	8"				dry weathered shale	-	
6	20/1"	1"	4"				dry weathered shale	-	
8									
10									
15									
20									



# OVERBURDEN BORING REPORT

**PARSONS** CLIENT: WACO BORING NO.: MWDemo-5

PROJECT: PED  
 SWMU # (AREA): Demo  
 SOP NO.: 741175

START DATE: 10/29/02  
 FINISH DATE: 10/29/02  
 CONTRACTOR: Lyon Drilling  
 DRILLER: Harry Reid  
 INSPECTOR: Ben Jenn  
 CHECKED BY: \_\_\_\_\_  
 CHECK DATE: \_\_\_\_\_  
 BORING CONVERTED TO MW?  Y  N

### DRILLING SUMMARY

DRILLING METHOD	HOLE DIA. (R)	DEPTH INTERVAL (R)	SAMPLER		HAMMER	
			SIZE	TYPE	TYPE	WT/FALL
<u>HSA</u>	<u>6"</u>	<u>0-8</u>	<u>2"</u>	<u>SS</u>		

### DRILLING ACRONYMS

HSA	HOLLOW-STEM AUGERS	HMR	HAMMER	SS	SPLIT SPOON
DW	DRIVE-AND-WASH	SHR	SAFETY HAMMER	CS	CONTINUOUS SAMPLING
MRLC	MUD-ROTARY SOIL-CORING	HHR	HYDRAULIC HAMMER	SI	5 FT INTERVAL SAMPLING
CA	CASING ADVANCER	DHR	DOWN-HOLE HAMMER	NS	NO SAMPLING
SPC	SPIN CASING	WL	WIRE-LINE	ST	SHELBY TUBE
				3S	3 INCH SPLIT SPOON

### MONITORING EQUIPMENT SUMMARY

INSTRUMENT TYPE	DETECTOR TYPE/ENERGY	RANGE	BACKGROUND			CALIBRATION		WEATHER (TEMP., WIND, ETC.)
			READING	TIME	DATE	TIME	DATE	

### MONITORING ACRONYMS

PID	PHOTO - IONIZATION DETECTOR	BGD	BACKGROUND	DGRT	DRAEGER TUBES
FID	FLAME - IONIZATION DETECTOR	CPM	COUNTS PER MINUTE	PPB	PARTS PER BILLION
GMD	GEIGER MUELLER DETECTOR	PPM	PARTS PER MILLION	MDL	METHOD DETECTION LIMIT
SCT	SCINTILLATION DETECTOR	RAD	RADIATION METER		

### INVESTIGATION DERIVED WASTE

DATE	<u>10/29/02</u>		
SOIL AMOUNT : (fraction of drum)	<u>1/2 drum</u>		
DRUM #, LOCATION:			

**COMMENTS:**

SAMPLES TAKEN: none

SAMPLES	_____
DUPLICATES	_____
MS/MSD	_____
MRD	_____

# OVERBURDEN BORING REPORT

**PARSONS**

CLIENT: USACOE

BORING NO.: MW Dermo - 5

COMMENTS:

DRILLER: Harry Lyon

INSPECTOR: Rossmann / McAllister

DATE: 10/29/02

DEPTH (FT)	SAMPLING			SAMPLE			SAMPLE DESCRIPTION <small>(As per Burmeister: color, grain size, MAJOR COMPONENT, Minor Components with amount modifiers and grain-size, density, stratification, wetness, etc.)</small>	USCS CLASS	STRATUM CLASS
	BLOWS PER 6 INCHES	PENE-TRATION RANGE (FEET)	RECOV-ERY RANGE (FEET)	DEPTH INT (FEET)	NO.	VOC			
7	12						moist Brown SILT w/ rock fragments	MZ	
2	10	2'	1'				moist Brown SILT w/ rock fragments (4")	MZ	
5	12						Dry weathered shale		
25	28	2'	1'						
40	35								
50/2	50/2	8"	8"				Dry weathered shale	-	
6	50/4"								
		4"	8"				Dry weathered shale	-	
8									
10									
15									
20									

<b>Contractor:</b> <u>NorthStar Drilling</u> <b>Driller:</b> <u>S. Breeds</u> <b>Inspector:</b> <u>E. Ashton</u> <b>Rig Type:</b> <u>CME-45</u>					<b>PARSONS DRILLING RECORD</b>					Sheet # <u>1</u> of <u>1</u> #																																																																										
					<b>PROJECT NAME:</b> <u>Seneca Army Depot - SEAD 122B</u> <b>PROJECT NUMBER:</b> <u>741401.031</u>					<b>BORING/ WELL NO.</b> <u>MW-1</u> <b>Location Description:</b> <u>SEE SITE PLAN</u>																																																																										
GROUNDWATER OBSERVATIONS					<b>Weather:</b> <u>Sunny - 75' F</u>  <b>Date/Time Start:</b> <u>7/08/02-1020</u>  <b>Date/Time Finish:</b> <u>7/08/02-1530</u>					Location Plan																																																																										
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Water Level</td> <td>6.00</td> <td>7.02</td> <td>7.48</td> <td></td> </tr> <tr> <td>Date</td> <td>7/11/02</td> <td>7/22/02</td> <td>7/24/02</td> <td></td> </tr> <tr> <td>Time</td> <td>0830</td> <td>0830</td> <td>1035</td> <td></td> </tr> <tr> <td>Meas. From</td> <td>TOC</td> <td>TOC</td> <td>TOC</td> <td></td> </tr> </table>										Water Level	6.00	7.02	7.48		Date	7/11/02	7/22/02	7/24/02		Time	0830	0830	1035		Meas. From	TOC	TOC	TOC		SEE SITE PLAN																																																						
Water Level	6.00	7.02	7.48																																																																																	
Date	7/11/02	7/22/02	7/24/02																																																																																	
Time	0830	0830	1035																																																																																	
Meas. From	TOC	TOC	TOC																																																																																	
					<b>FIELD IDENTIFICATION OF MATERIAL</b>					<b>SCHEMATIC</b>		<b>COMMENTS</b> stickup casing																																																																								
Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>0-2</td> <td></td> <td>1/3</td> <td>50</td> <td>NA</td> <td>(0'-2') Brown to Grey, roots, silt with clay, trace of fine sand and fine gravel, dry. (SM/SC)</td> <td rowspan="13" style="text-align: center; vertical-align: middle;"> </td> <td colspan="2">← Grout 0-1.5'</td> </tr> <tr> <td>2-4</td> <td></td> <td>17/22</td> <td>NR</td> <td>NA</td> <td>(2'-4') No recovery in split-spoon.</td> <td colspan="2">← Bentonite Pellets 1.5'-3.5' 2" PVC Riser</td> </tr> <tr> <td>4-6</td> <td></td> <td>15/17</td> <td>50</td> <td>NA</td> <td>(4'-6') Brown, silt with trace of clay, trace of fine sand, fine to medium gravel, black shale interbedded, dry. (SM (Till))</td> <td colspan="2">← Filtered sand (#00N) pack - 3.5'-4' ← Filtered sand (#0) pack - 4'-17.5'</td> </tr> <tr> <td>6-8</td> <td></td> <td>50/</td> <td>20</td> <td>NA</td> <td>(6'-6.8') Same as above. (SM (Till)). Note: Refusal encountered at 6.8' bgs. Course gravel of black shale in tip of spoon. Drilled to 8' bgs with HSAs.</td> <td colspan="2">← 0.010 Slot PVC Screen 6'-16'</td> </tr> <tr> <td>8-10</td> <td></td> <td>50/3</td> <td>2</td> <td>NA</td> <td>(8'-8.3') Same as above. (SM (Till)) Note: Refusal encountered at 8.3' bgs. Black shale predominant in spoon. Drilled to 10' bgs with HSAs.</td> <td colspan="2"></td> </tr> <tr> <td>10-12</td> <td></td> <td>25/31</td> <td>80</td> <td>NA</td> <td>(10-11.8') Brown, silt with trace clay and interbedded shale, dry. (SM (Till)) Note: Refusal encountered at 11.8' bgs. Drilled to 12' bgs with HSAs.</td> <td colspan="2"></td> </tr> <tr> <td>12-14</td> <td>122B-1040</td> <td>17/25</td> <td>100</td> <td>NA</td> <td>(12-14') Same as above. (SM (Till))</td> <td colspan="2"></td> </tr> <tr> <td>14-16</td> <td></td> <td>65/</td> <td>10</td> <td>NA</td> <td>(14'-14.7') Brown to Grey, silt with clay and interbedded shale, wet. (SM (Till)) Note: Refusal encountered at 14.7' bgs. Attempted to drill to 20' bgs, but encountered auger refusal at 17.5' bgs.</td> <td colspan="2">← 16' ← Sch. 40 PVC Sump 16'-16.5'</td> </tr> <tr> <td>16-18</td> <td></td> <td>NA</td> <td>NA</td> <td>NA</td> <td>Terminated soil boring at 17.5' bgs.</td> <td colspan="2">17.5'</td> </tr> </table>					0-2		1/3	50	NA	(0'-2') Brown to Grey, roots, silt with clay, trace of fine sand and fine gravel, dry. (SM/SC)		← Grout 0-1.5'		2-4		17/22	NR	NA	(2'-4') No recovery in split-spoon.	← Bentonite Pellets 1.5'-3.5' 2" PVC Riser		4-6		15/17	50	NA	(4'-6') Brown, silt with trace of clay, trace of fine sand, fine to medium gravel, black shale interbedded, dry. (SM (Till))	← Filtered sand (#00N) pack - 3.5'-4' ← Filtered sand (#0) pack - 4'-17.5'		6-8		50/	20	NA	(6'-6.8') Same as above. (SM (Till)). Note: Refusal encountered at 6.8' bgs. Course gravel of black shale in tip of spoon. Drilled to 8' bgs with HSAs.	← 0.010 Slot PVC Screen 6'-16'		8-10		50/3	2	NA	(8'-8.3') Same as above. (SM (Till)) Note: Refusal encountered at 8.3' bgs. Black shale predominant in spoon. Drilled to 10' bgs with HSAs.			10-12		25/31	80	NA	(10-11.8') Brown, silt with trace clay and interbedded shale, dry. (SM (Till)) Note: Refusal encountered at 11.8' bgs. Drilled to 12' bgs with HSAs.			12-14	122B-1040	17/25	100	NA	(12-14') Same as above. (SM (Till))			14-16		65/	10	NA	(14'-14.7') Brown to Grey, silt with clay and interbedded shale, wet. (SM (Till)) Note: Refusal encountered at 14.7' bgs. Attempted to drill to 20' bgs, but encountered auger refusal at 17.5' bgs.	← 16' ← Sch. 40 PVC Sump 16'-16.5'		16-18		NA	NA	NA	Terminated soil boring at 17.5' bgs.	17.5'			
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SS - SPLIT SPOON										Collected soil sample 122B-1040 for total lead analysis.																																																																										
A - AUGER CUTTINGS										6-inch PVC sump installed at bottom of well screen.																																																																										
C - CORED					2-inch well installed.																																																																															

# OVERBURDEN MONITORING WELL COMPLETION REPORT & INSTALLATION DETAIL

## PROTECTIVE RISER COMPLETION

PARSONS:	CLIENT: <u>ACCE</u>	WELL #: <u>1</u>
PROJECT: <u>Seneca Army Depot</u>	PROJECT NO: <u>7414d. 0310</u>	INSPECTOR: <u>EJH/LTA</u>
LOCATION: <u>Romulus, NY</u>	CHECKED BY: <u>EJH/LTA</u>	

DRILLING CONTRACTOR: <u>North Star Drilling, Inc.</u>	POW DEPTH: <u>16.5'</u>
DRILLER: <u>Scott Breads</u>	INSTALLATION STARTED: <u>7/08/02</u>
DRILLING COMPLETED: <u>7/08/02</u>	INSTALLATION COMPLETED: <u>7/08/02</u>
BORING DEPTH: <u>17.5'</u>	SURFACE COMPLETION DATE: <u>7/12/02</u>
DRILLING METHOD(S): <u>Hollow Stem augers.</u>	COMPLETION CONTRACTOR/CREW: <u>North Star Drilling</u>
BORING DIAMETER(S): <u>8.25</u>	BEDROCK CONFIRMED (Y/N?): <u>Y</u>
ASSOCIATED SWMU/AOC: <u>SEAD-122B</u>	ESTIMATED GROUND ELEVATION: <u>635.14'</u>

PROTECTIVE SURFACE CASING:

DIAMETER: 4"      LENGTH: 3.5'      TOR: Steel

RISER:

TOC: 637.16'      TYPE: Sch 40, PVC      DIAMETER: 2"      LENGTH: 8.02'

SCREEN:

TSC: 629.14'      TYPE: Sch 40, PVC      DIAMETER: 2"      LENGTH: 10'      SLOT SIZE: 10-slot

POINT OF WELL: (SILT SUMP)

YPE: -      BSC: 619.14'      POW: 618.64'

GROUT:

TG: 635.14'      TYPE: Cement/Bent.      LENGTH: 1.5'

SEAL:

TBS: 633.64      TYPE: Pellets      LENGTH: 2'

SAND PACK:

TSP: 631.64      TYPE: Mix # 00N (3.5-4') # 06447.51      LENGTH: 14'

SURFACE COLLAR:

TYPE: concrete      RADIUS: 2' x 2'      THICKNESS CENTER: 6"      THICKNESS EDGE: 6"

CENTRALIZER DEPTHS

DEPTH 1: NA      DEPTH 2: NA      DEPTH 3: NA      DEPTH 4: NA

COMMENTS:

see Boring Log for in depth details

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

<b>Contractor:</b> NorthStar Drilling <b>Driller:</b> S. Breeds <b>Inspector:</b> E. Ashton <b>Rig Type:</b> CME-45					<b>PARSONS DRILLING RECORD</b>					Sheet # 1 of 1 #	
					<b>PROJECT NAME:</b> Seneca Army Depot - SEAD 122B <b>PROJECT NUMBER:</b> 741401.031					<b>BORING/ WELL NO. MW-2</b> <b>Location Description:</b> SEE SITE PLAN	
<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> Cloudy - 65°F					<b>Location Plan</b>	
Water Level: 6.5    7.38    7.54 Date: 7/12/02    7/22/02    7/24/02 Time: 0835    0835    1040 Meas. From: TOC    TOC    TOC					<b>Date/Time Start:</b> 7/09/02-0920  <b>Date/Time Finish:</b> 7/09/02-1302					SEE SITE PLAN	
<b>FIELD IDENTIFICATION OF MATERIAL</b>					<b>SCHEMATIC</b>		<b>COMMENTS</b> stickup casing				
<b>Sample Depth</b>	<b>Sample ID.</b>	<b>SPT</b>	<b>% Rec.</b>	<b>PID (ppm)</b>							
0-2		2/3 3/4	50	NA							
2-4		5/8 10/14	40	NA							
4-6		13/23 35/40	100	NA							
6-8		50/ 50/3	NA	NA							
8-10		50/3	NA	NA							
10-12		37/40 50/2	50	NA							
12-14		34/25 23/24	100	NA							
14-16	122B- 1041	22/24 33/50/ .4	80	NA							
16-18		50/3	2	NA							
<b>COMMENTS:</b> Collected soil sample 122B-1041 for total lead analysis. 3-inch PVC sump installed at bottom of well screen. 2-inch well installed.											
<b>SAMPLING METHOD</b> SS - SPLIT SPOON A - AUGER CUTTINGS C - CORED											

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

PARSONS ..		CLIENT: <u>ACUE</u>	WELL #: <u>2</u>	
PROJECT: <u>Seneca Army Depot</u>		PROJECT NO: <u>74/401.03100</u>		
LOCATION: <u>Romulus, NY</u>		INSPECTOR: <u>E. J. Shaker</u>		
		CHECKED BY: <u>E. J. Shaker</u>		
DRILLING CONTRACTOR: <u>North Star Drilling, Inc.</u>		POW DEPTH: <u>16.0'</u>		
DRILLER: <u>Scott Breads</u>		INSTALLATION STARTED: <u>7/09/02</u>		
DRILLING COMPLETED: <u>7/09/02</u>		INSTALLATION COMPLETED: <u>7/09/02</u>		
BORING DEPTH: <u>16.5'</u>		SURFACE COMPLETION DATE: <u>7/12/02</u>		
DRILLING METHOD(S): <u>Hollow Stem auger</u>		COMPLETION CONTRACTOR/CREW: <u>North Star Drilling</u>		
BORING DIAMETER(S): <u>F. 25</u>		BEDROCK CONFIRMED (Y/N?): <u>Y</u>		
ASSOCIATED SWMU/AOC: <u>SFAD-122B</u>		ESTIMATED GROUND ELEVATION: <u>624.83'</u>		
PROTECTIVE SURFACE CASING:				
DIAMETER: <u>4"</u>		LENGTH: <u>3.5'</u>		TOR: <u>steel</u>
RISER:				
TOC: <u>626.82'</u>		TYPE: <u>Sch 40 PVC</u>		DIAMETER: <u>2"</u> LENGTH: <u>7.99'</u>
SCREEN:				
TSC: <u>618.83'</u>		TYPE: <u>Sch 40 PVC</u>		DIAMETER: <u>2"</u> LENGTH: <u>9.7'</u> SLOT SIZE: <u>10-slot</u>
POINT OF WELL: (SILT SUMP)				
YPE: <u>-</u>		BSC: <u>609.13'</u>		POW: <u>608.83'</u>
GROUT:				
TG: <u>624.83'</u>		TYPE: <u>Grout/Bed.</u>		LENGTH: <u>1.5'</u>
SEAL: TBS: <u>623.33'</u>		TYPE: <u>Pellets</u>		LENGTH: <u>2'</u>
SAND PACK: TSP: <u>621.33'</u>		TYPE: <u>man # 40 (C 3.5-4) 40 (C 6-16.5)</u>		LENGTH: <u>13'</u>
SURFACE COLLAR:				
TYPE: <u>concrete</u>		RADIUS: <u>2' x 2'</u>		THICKNESS CENTER: <u>6"</u> THICKNESS EDGE: <u>6"</u>
CENTRALIZER DEPTHS				
DEPTH 1: <u>NA</u>		DEPTH 2: <u>NA</u>		DEPTH 3: <u>NA</u> DEPTH 4: <u>NA</u>
COMMENTS:				
<u>See Boring Log for in-depth details</u>				

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC

<b>Contractor:</b> <u>NorthStar Drilling</u> <b>Driller:</b> <u>S. Breeds</u> <b>Inspector:</b> <u>E. Ashton</u> <b>Rig Type:</b> <u>CME-45</u>					<b>PARSONS DRILLING RECORD</b>					<b>BORING/ WELL NO.</b> <u>MW-3</u>		Sheet # <u>1</u> of <u>1</u> #																																														
					<b>PROJECT NAME:</b> <u>Seneca Army Depot - SEAD 122B</u> <b>PROJECT NUMBER:</b> <u>741401.031</u>					<b>Location Description:</b> <u>SEE SITE PLAN</u>																																																
<b>GROUNDWATER OBSERVATIONS</b>					<b>Weather:</b> <u>Sunny - 60°F</u>					<b>Location Plan</b>																																																
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Water Level</td> <td>5.6</td> <td>6.44</td> <td>6.68</td> <td></td> </tr> <tr> <td>Date</td> <td>7/12/02</td> <td>7/22/02</td> <td>7/24/02</td> <td></td> </tr> <tr> <td>Time</td> <td>0840</td> <td>0840</td> <td>1045</td> <td></td> </tr> <tr> <td>Meas. From</td> <td>TOC</td> <td>TOC</td> <td>TOC</td> <td></td> </tr> </table>					Water Level	5.6	6.44	6.68		Date	7/12/02	7/22/02	7/24/02		Time	0840	0840	1045		Meas. From	TOC	TOC	TOC		<b>Date/Time Start:</b> <u>7/10/02 - 0840</u>					SEE SITE PLAN																												
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<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Depth</th> <th>Sample I.D.</th> <th>SPT</th> <th>% Rec.</th> <th>PID (ppm)</th> </tr> </thead> <tbody> <tr> <td>0-2</td> <td></td> <td>5/6/ 21/22</td> <td>80</td> <td>NA</td> </tr> <tr> <td>2-4</td> <td></td> <td>22/25 23/28</td> <td>2</td> <td>NA</td> </tr> <tr> <td>4-6</td> <td></td> <td>23/21 30/33</td> <td>80</td> <td>NA</td> </tr> <tr> <td>6-8</td> <td></td> <td>50/3</td> <td>NA</td> <td>NA</td> </tr> <tr> <td>8-10</td> <td></td> <td>30/ 50/3</td> <td>20</td> <td>NA</td> </tr> <tr> <td>10-12</td> <td></td> <td>35/ 50/3</td> <td>40</td> <td>NA</td> </tr> <tr> <td>12-14</td> <td>122B- 1042</td> <td>38/ 50/3</td> <td>50</td> <td>NA</td> </tr> <tr> <td>14-16</td> <td></td> <td>50/1</td> <td>50</td> <td>NA</td> </tr> <tr> <td>16-18</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)	0-2		5/6/ 21/22	80	NA	2-4		22/25 23/28	2	NA	4-6		23/21 30/33	80	NA	6-8		50/3	NA	NA	8-10		30/ 50/3	20	NA	10-12		35/ 50/3	40	NA	12-14	122B- 1042	38/ 50/3	50	NA	14-16		50/1	50	NA	16-18					<p>(0'-2') Brown, silt with minor clay, roots, trace of fine sand and fine to medium gravel, dry. (SM)</p> <p>(2'-4') Fine to coarse gravel. Very little to no recovery in spoon.</p> <p>(4'-6') Grey, silt with trace clay, fine to medium gravel, trace of fine sand, dry. (SM)</p> <p>(6'-6.3') No recovery. Note: Refusal encountered at 6.3' bgs. Drilled to 8' bgs. with HSAs. Course gravel of black shale in tip of spoon.</p> <p>(8'-8.8') Brown to Grey, silt with clay and interbedded shale, dry. (SM/SC (Till)) Note: Refusal encountered at 8.8' bgs. Drilled to 10' bgs. with HSAs.</p> <p>(10'-10.8') Same as above. (SM/SC (Till)) Note: Refusal encountered at 10.8' bgs. Drilled to 12' bgs. with HSAs.</p> <p>(12'-12.8') Brown to Grey, silt with clay and interbedded shale, dry. (SM/SC (Till)) Note: Refusal encountered at 12.8' bgs. Drilled to 14' bgs. with HSAs.</p> <p>(14'-14.1') No recovery. Note: Refusal encountered at 14.1' bgs. Tip of spoon wet. Attempted to drill to 20' bgs., but encountered auger refusal at 15' bgs. Terminated soil boring at 15' bgs.</p>							<p>Grout (0'-1.5')</p> <p>2" PVC Riser</p> <p>Bentonite Pellets (1.5'-3')</p> <p>Filtered sand (#00N) pack - 3'-3.5'</p> <p>Filtered sand (#0) pack (3.5'-15')</p> <p>0.010" Slot, Sch 40 PVC Screen (4'-14')</p> <p>14'</p> <p>Sch. 40 PVC Sump</p> <p>14.5' 14'-14.5'</p> <p>15'</p>
Sample Depth	Sample I.D.	SPT	% Rec.	PID (ppm)																																																						
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16-18																																																										
<b>SAMPLING METHOD</b> SS = SPLIT SPOON A = AUGER CUTTINGS C = CORED					<b>COMMENTS:</b> <u>Collected soil sample 122B-1042 for total lead analysis.</u> <u>6-inch PVC sump installed at bottom of well screen.</u> <u>2-inch well installed.</u>																																																					

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

PARSONS ..		CLIENT: <u>ACOE</u>	WELL #: <u>3</u>	
PROJECT: <u>Seneca Army Depot</u>	LOCATION: <u>Romulus, NY</u>		PROJECT NO: <u>741401.03100</u>	INSPECTOR: <u>E J Ashton</u>
			CHECKED BY: <u>E J Ashton</u>	
DRILLING CONTRACTOR: <u>Northstar Drilling, Inc</u>	DRILLER: <u>Scott Breeds</u>		POW DEPTH: <u>14.5'</u>	
DRILLING COMPLETED: <u>7/11/02</u>	BORING DEPTH: <u>15'</u>		INSTALLATION STARTED: <u>7/11/02</u>	INSTALLATION COMPLETED: <u>7/11/02</u>
DRILLING METHOD(S): <u>Hollow stem Auger</u>	BORING DIAMETER(S): <u>8.25"</u>		SURFACE COMPLETION DATE: <u>7/12/02</u>	COMPLETION CONTRACTOR/CREW: <u>Northstar Drilling</u>
ASSOCIATED SWMU/AOC: <u>SEAD-122B</u>			BEDROCK CONFIRMED (Y/N?): <u>Y</u>	ESTIMATED GROUND ELEVATION: <u>625.82'</u>
PROTECTIVE SURFACE CASING:				
DIAMETER: <u>4"</u>		LENGTH: <u>3.5'</u>	TOR: <u>Steel</u>	
RISER:				
TOC: <u>627.94'</u>	TYPE: <u>Sch 40 PVC</u>	DIAMETER: <u>2"</u>	LENGTH: <u>6.12'</u>	
SCREEN:				
TSC: <u>621.82'</u>	TYPE: <u>Sch 40 PVC</u>	DIAMETER: <u>2"</u>	LENGTH: <u>10'</u>	SLOT SIZE: <u>10-slot</u>
POINT OF WELL: (SILT SUMP)				
YPE: <u>-</u>	BSC: <u>611.82'</u>	POW: <u>611.32'</u>		
GROUT:				
TG: <u>625.82'</u>	TYPE: <u>Grout/bent</u>	LENGTH: <u>1.5'</u>		
SEAL: TBS: <u>624.32'</u>	TYPE: <u>Pellets</u>	LENGTH: <u>1.5'</u>		
SAND PACK: TSP: <u>622.82'</u>	TYPE: <u>mine # 00 (3-3.5") # 00 (4-5")</u>	LENGTH: <u>12'</u>		
SURFACE COLLAR:				
TYPE: <u>Concrete</u>	RADIUS: <u>2' x 2'</u>	THICKNESS CENTER: <u>6"</u>	THICKNESS EDGE: <u>6"</u>	
CENTRALIZER DEPTHS				
DEPTH 1: <u>NA</u>	DEPTH 2: <u>NA</u>	DEPTH 3: <u>NA</u>	DEPTH 4: <u>NA</u>	
COMMENTS:				
<u>See Boring Log for in-depth details.</u>				

\* ALL DEPTH MEASUREMENTS REFERENCED TO GROUND SURFACE

SEE PAGE 2 FOR SCHEMATIC



**APPENDIX B**  
**NOTICE OF INTENT TO PROCEED**

# PARSONS

100 High Street, 4<sup>th</sup> 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, 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: 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**

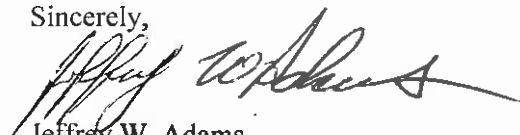
Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

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



# PARSONS

100 High Street, 4<sup>th</sup> 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**

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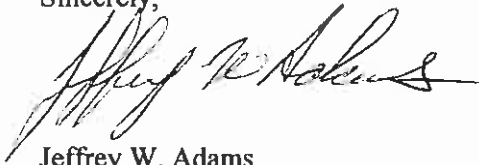
Dear Mr. Nohrstedt:

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 RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-28</u>																																																
Site Location: <u>SEAD ASH LANDFILL</u>	Driller: <u>David Wort</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/1/10</u>																																																	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval Drilled</td><td></td></tr> <tr><td>Drilling Method(s)</td><td></td></tr> <tr><td>Borehole Dia. (in.)</td><td></td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td></td></tr> <tr><td>Depth temporary casing installed</td><td></td></tr> <tr><td>Casing type/dia. (in.)</td><td></td></tr> <tr><td>Method of installing</td><td></td></tr> </table> <p><u>CASING PULLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Method employed</td><td><u>Grout, Pull, Grout</u></td></tr> <tr><td>Casing retrieved (feet)</td><td><u>10.5 ft</u></td></tr> <tr><td>Casing type/dia. (in.)</td><td><u>2" PVC</u></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Equipment used</td><td></td></tr> <tr><td>Number of perforations/foot</td><td></td></tr> <tr><td>Size of perforations</td><td></td></tr> <tr><td>Interval perforated</td><td></td></tr> </table> <p><u>GROUTING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval grouted (FBLS)</td><td><u>1-8.3</u></td></tr> <tr><td># of batches prepared</td><td><u>1</u></td></tr> <tr><td>For each batch record:</td><td></td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type I Portland</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10 pounds</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td></td></tr> <tr><td>Volume of grout prepared (gal.)</td><td></td></tr> <tr><td>Volume of grout used (gal.)</td><td><u>8 gal</u></td></tr> </table>	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 employed	<u>Grout, Pull, Grout</u>	Casing retrieved (feet)	<u>10.5 ft</u>	Casing type/dia. (in.)	<u>2" PVC</u>	Equipment used		Number of perforations/foot		Size of perforations		Interval perforated		Interval grouted (FBLS)	<u>1-8.3</u>	# of batches prepared	<u>1</u>	For each batch record:		Quantity of water used (gal.)	<u>18</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type I Portland</u>	Quantity of bentonite used (lbs.)	<u>10 pounds</u>	Quantity of calcium chloride used (lbs.)		Volume of grout prepared (gal.)		Volume of grout used (gal.)	<u>8 gal</u>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>Annotations: 2.2 ft stick up removed, 10.5 ft TOP TO TD, Soil, Grout, PULLED PVC WELL, Depth of well, NOT DRILLED</p>
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<p><u>COMMENTS: Depth to water = 6.00 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-30</u>																																																
Site Location: <u>SEAD ASH LANDFILL</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/20/10</u>																																																	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval Drilled</td><td></td></tr> <tr><td>Drilling Method(s)</td><td></td></tr> <tr><td>Borehole Dia. (in.)</td><td></td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td></td></tr> <tr><td>Depth temporary casing installed</td><td></td></tr> <tr><td>Casing type/dia. (in.)</td><td></td></tr> <tr><td>Method of installing</td><td></td></tr> </table> <p><u>CASING PULLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Method employed</td><td><u>Grout, Pull, Grout</u></td></tr> <tr><td>Casing retrieved (feet)</td><td><u>10.5 ft</u></td></tr> <tr><td>Casing type/dia. (in.)</td><td><u>2" PVC</u></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Equipment used</td><td></td></tr> <tr><td>Number of perforations/foot</td><td></td></tr> <tr><td>Size of perforations</td><td></td></tr> <tr><td>Interval perforated</td><td></td></tr> </table> <p><u>GROUTING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval grouted (FBS)</td><td><u>1-6.6</u></td></tr> <tr><td># of batches prepared</td><td><u>1</u></td></tr> <tr><td colspan="2"><u>For each batch record:</u></td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type I Portland</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10 pounds</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td></td></tr> <tr><td>Volume of grout prepared (gal.)</td><td></td></tr> <tr><td>Volume of grout used (gal.)</td><td><u>6 gal</u></td></tr> </table>	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 employed	<u>Grout, Pull, Grout</u>	Casing retrieved (feet)	<u>10.5 ft</u>	Casing type/dia. (in.)	<u>2" PVC</u>	Equipment used		Number of perforations/foot		Size of perforations		Interval perforated		Interval grouted (FBS)	<u>1-6.6</u>	# of batches prepared	<u>1</u>	<u>For each batch record:</u>		Quantity of water used (gal.)	<u>18</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type I Portland</u>	Quantity of bentonite used (lbs.)	<u>10 pounds</u>	Quantity of calcium chloride used (lbs.)		Volume of grout prepared (gal.)		Volume of grout used (gal.)	<u>6 gal</u>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>Handwritten notes on schematic:      - 3.9 ft: stick up Removed      - 10.5 ft: TOP TO TD, Grout, Bottom of well      - PULLED PVC WELL (with arrow pointing to casing)      - NOT DRILLED (at 10.5 ft and 30 ft)</p>
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<p><b>COMMENTS:</b> <u>Depth to water = DRY ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD									
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-31</u>								
Site Location: <u>SEAD Ash Landfill</u>	Driller: <u>David Lion</u>								
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>								
	Date: <u>9/20/10</u>								
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>								
<u>OVERDRILLING</u> Interval Drilled <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Drilling Method(s) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Borehole Dia. (in.) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Temporary Casing Installed? (y/n) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Depth temporary casing installed <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Casing type/dia. (in.) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Method of installing <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table>									
<u>CASING PULLING</u> Method employed <table border="1" style="width: 100%; height: 15px;"><tr><td><u>Grout, Pull, Grout</u></td></tr></table> Casing retrieved (feet) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>10.4 ft</u></td></tr></table> Casing type/dia. (in.) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>2" PVC</u></td></tr></table>	<u>Grout, Pull, Grout</u>	<u>10.4 ft</u>	<u>2" PVC</u>						
<u>Grout, Pull, Grout</u>									
<u>10.4 ft</u>									
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<u>CASE PERFORATING</u> Equipment used <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Number of perforations/foot <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Size of perforations <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Interval perforated <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table>									
<u>GROUTING</u> Interval grouted (FBLs) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>1-10.4 ft</u></td></tr></table> # of batches prepared <table border="1" style="width: 100%; height: 15px;"><tr><td><u>1</u></td></tr></table> For each batch record: Quantity of water used (gal.) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>18</u></td></tr></table> Quantity of cement used (lbs.) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>2 bags</u></td></tr></table> Cement type <table border="1" style="width: 100%; height: 15px;"><tr><td><u>Type 1 Portland</u></td></tr></table> Quantity of bentonite used (lbs.) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>10 pounds</u></td></tr></table> Quantity of calcium chloride used (lbs.) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Volume of grout prepared (gal.) <table border="1" style="width: 100%; height: 15px;"><tr><td> </td></tr></table> Volume of grout used (gal.) <table border="1" style="width: 100%; height: 15px;"><tr><td><u>10 gal.</u></td></tr></table>	<u>1-10.4 ft</u>	<u>1</u>	<u>18</u>	<u>2 bags</u>	<u>Type 1 Portland</u>	<u>10 pounds</u>			<u>10 gal.</u>
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<u>2 bags</u>									
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COMMENTS: <u>Depth to water = 8.57 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>									
* 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



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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-33</u>	
Site Location: <u>SEAD Ash Landfill</u>	Driller: <u>David Lian</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/20/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <u>Grout, Pull, Grout</u> Casing retrieved (feet) <u>9.8 ft</u> Casing type/dia. (in.) <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <u>1-7.2 ft</u> # of batches prepared <u>1</u> <u>For each batch record:</u> Quantity of water used (gal.) <u>18</u> Quantity of cement used (lbs.) <u>2 bags</u> Cement type <u>Type 1 Portland</u> Quantity of bentonite used (lbs.) <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <u>7 gal</u>		
COMMENTS: <u>Depth to water = ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-34</u>																																																
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/1/10</u>																																																	
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 35D</u>																																																
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>																																																
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<p>COMMENTS: <u>Depth to water = 4.29 ft. failed</u>  <u>Knocked out end plug. Loaded casing with</u>  <u>grout. Dug around casing, cut off below</u>  <u>grade. Topped off grout. Filled hole with</u>  <u>soil.</u></p>																																																	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star  
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Well Abandonment Plan  
Seneca Army Depot Activity**

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW36</u>																																																
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>																																																
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Well Decommissioning Record  
Well Abandonment Plan  
Seneca Army Depot Activity**

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-37</u>																																																
Site Location: <u>SEAD ASH LANDFILL</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Drilling Contractor

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Well Decommissioning Record  
Well Abandonment Plan  
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WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Ash Landwell</u>	Well ID: <u>MW-30D</u>																																																
Site Location: <u>SEADG</u>	Driller:																																																
Drilling Company: <u>Geologic NS</u>	Inspector:																																																
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<p>COMMENTS:</p> <p><u>Knock out bottom, Grout tremie, pull top pvc &amp; casing, Remove Risers, report grout</u></p>																																																	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc. 32.4

Drilling Contractor: 3 Aluminum bollards

Department Representative: 29.7 TD = 32.4  
Grout = 29.7

Grout in place.  
I Protective casing.

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW41D</u>																																																
Site Location: <u>SEAD ASH LANDFILL</u>	Driller: <u>Scott Breeds</u>																																																
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<p><u>COMMENTS: Removed concrete and gravel pipe. Loaded casing with grout. Dug out around well. Cut off casing. Topped off grout. Backfilled hole 0-2 ft with soil.</u></p>																																																	

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW42A</u>																																																
Site Location: <u>Ash Landfill</u>	Driller: <u>Scott Breeds</u>																																																
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<p>COMMENTS: <u>Tried to pull guard pipe. Guard pipe broke above pad. Tried to pull PVC well. Would not budge. Stickup broke off. Excavated around well to 2-3 ft. Grouted well in place.</u></p>																																																	

\* 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



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

**WELL DECOMMISSIONING RECORD**

Site Name: Seneca Army Depot

Well ID: MW43

Site Location: SEAD ASH LAND FILL

Driller: Scott Breeds

Drilling Company: Geologic North Star

Inspector: Scott Dillman

Date: 9/16/10

**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	<u>Grout, Pull, Grout</u>
Casing retrieved (feet)	<u>7.6 ft</u>
Casing type/dia. (in.)	<u>2" PVC</u>

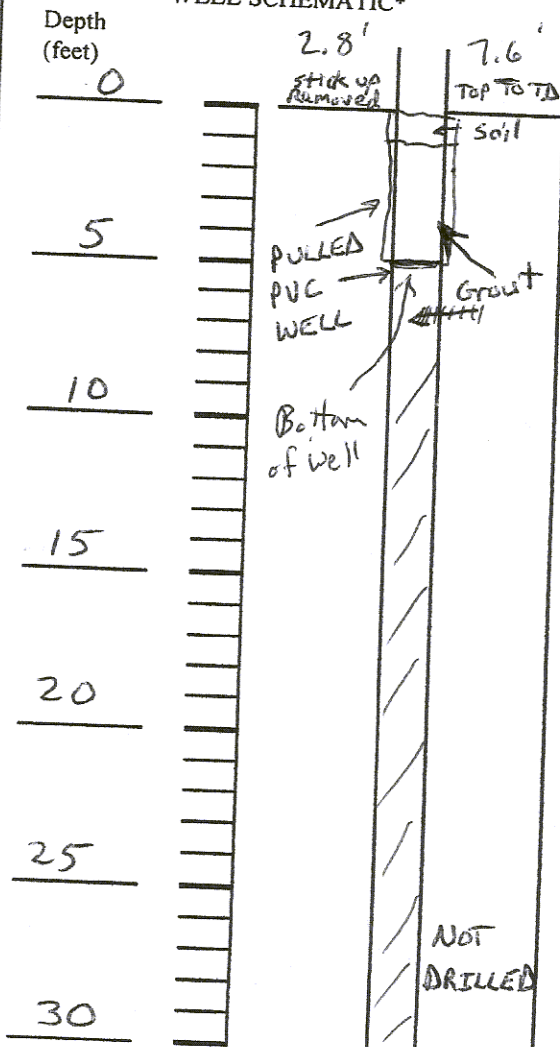
CASE PERFORATING

Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	

GROUTING

Interval grouted (FBLs)	<u>1-4.8 ft</u>
# of batches prepared	<u>1</u>
For each batch record:	
Quantity of water used (gal.)	<u>18</u>
Quantity of cement used (lbs.)	<u>2 bags</u>
Cement type	<u>Type I Portland</u>
Quantity of bentonite used (lbs.)	<u>10 pounds</u>
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	<u>5 gal</u>

**WELL SCHEMATIC\***



**COMMENTS:** Depth to water = 5.63 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top.

\* 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



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

MW-45

WELL DECOMMISSIONING RECORD		MW-45																																																													
Site Name: <u>Ash Landfill</u>	Well ID: <u>MW-45</u>																																																														
Site Location: <u>SEAD-6</u>	Driller:																																																														
Drilling Company: <u>Geologic</u>	Inspector: <u>McNisley</u>																																																														
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Drilling Contractor

Department Representative

Casing pulled

8.4/54

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 47</u>																																																
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>																																																
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<p><u>COMMENTS:</u> <u>Depth to water = 3.9 ft. At 5 ft</u> <u>Knocked out end plug. Loaded casing with</u> <u>grout. Pulled casing. Full recovery. Topped</u> <u>off grout to surface.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Ash Landfill SEAD6</u>	Well ID: <u>MWS-49D</u>
Site Location: <u>SEAD6</u>	Driller:
Drilling Company: <u>Gedrite NS</u>	Inspector: <u>WCH/PLK</u>
Date:	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text"/></p> <p>Casing retrieved (feet) <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBS) <input type="text" value="35'"/></p> <p># of batches prepared <input type="text"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type I portland"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 lbs"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="8 gallons"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><b>COMMENTS:</b></p> <p><u>Knocked out end cap, filled casing with tremie grout, pulled pre River Grout remaining pre in place</u></p>	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

Pulled 3 bollards & protected casing  
Grout in place 35'



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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Ash Landfill</u>	Well ID: <u>MW-50D</u>	
Site Location: <u>SEAD6</u>	Driller: <u>Laurie</u>	
Drilling Company: <u>George Northstar</u>	Inspector:	
	Date:	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>	Depth (feet) <span style="float:right">50' from TOC</span> 	
<u>CASING PULLING</u> Method employed <input type="checkbox"/> Casing retrieved (feet) <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <u>57.8</u> # of batches prepared <u>1</u> For each batch record: Quantity of water used (gal.) <u>18</u> Quantity of cement used (lbs.) <u>2 bags</u> Cement type <u>Type I pack</u> Quantity of bentonite used (lbs.) <u>10 lbs</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <u>20 gallons</u>		
<b>COMMENTS:</b> <u>Pulled riser, 4 bollards, Tremmie grout</u> <u>20 gallons, pulled top of pic 1 day clean</u> <u>4ft cut of 2 steel risers</u>		
<small>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</small>		

Drilling Contractor

Department Representative

*Pulled 3 bollards & protective casing. Grout in place 57.8*

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW51A</u>
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lyons</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>
Date: <u>1/25/2011</u> <u>1/26/2011</u>	
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<u>OVERDRILLING</u>	<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> <p>Depth (feet)</p> <p>0</p> <hr style="border: 1px solid black;"/> <p>10</p> <hr style="border: 1px solid black;"/> <p>20</p> <hr style="border: 1px solid black;"/> <p>30</p> <hr style="border: 1px solid black;"/> </div> <div style="flex-grow: 1;"> <p>2.5' stickup removed</p> <p>soil backfill</p> <p>4" steel casing in place</p> <p>2" PVC in place</p> <p>35.5'</p> <p>35.5'</p> <p>Not Drilled</p> </div> <div style="margin-left: 10px; border-left: 1px solid black; padding-left: 5px;"> <p>Top To TD</p> <p>35.5'</p> <p>Grout</p> <p>35.5'</p> <p>Not Drilled</p> </div> </div>
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
<u>CASING PULLING</u>	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
<u>CASE PERFORATING</u>	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
<u>GROUTING</u>	
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 = NA. St. final  
Knocked out end plug. Loaded casing with  
grout. Continued to add grout after settling.  
Casing cut off. Grouted in place. covered  
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

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW52D</u>
Site Location: <u>SEAD - Ash Landfill</u>	Driller: <u>David Lyons</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>
Date: <u>1/25/2011</u> <u>1/26/2011</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <u>Grout in place</u></p> <p>Casing retrieved (feet) <input type="checkbox"/></p> <p>Casing type/dia. (in.) <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <u>0-58.7 ft</u></p> <p># of batches prepared <input type="checkbox"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <u>18</u></p> <p>Quantity of cement used (lbs.) <u>2 bags</u></p> <p>Cement type <u>Typical Portland</u></p> <p>Quantity of bentonite used (lbs.) <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p><u>0</u> <span style="float: right;">-3ft stickup removed</span></p> <p><u>10</u> <span style="float: right;">soil backfill</span></p> <p><u>20</u> <span style="float: right;">6" steel casing in place</span></p> <p><u>30</u> <span style="float: right;">4" steel casing in place</span></p> <p><u>40</u> <span style="float: right;">2" PVC in place</span></p> <p><u>50</u></p> <p><u>60</u></p> <p align="right">TOP TO TD <u>58.7</u></p> <p align="right">Grout</p>
<p>COMMENTS: <u>Depth to water = 4.10 ft. from TC</u>  <u>Knocked out end plug. Loaded casing with grout. Continued to add grout after settling.</u>  <u>cut off steel casings, covered with soil.</u></p>	

\* 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



MW-53

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Ash Landfill</u>	Well ID: <u>MW-53</u>																																																
Site Location: <u>SEAD-6</u>	Driller:																																																
Drilling Company: <u>Geologic</u>	Inspector: <u>McAllister</u>																																																
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Drilling Contractor

Department Representative

*Costly pulled*

MW-53

TD : 10-4

Grout : 8-0

MW-54D

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

WELL DECOMMISSIONING RECORD		MW. 54D																																																																																																																					
Site Name: <u>Ash Landfill</u>	Well ID:																																																																																																																						
Site Location: <u>SEAD 6</u>	Driller:																																																																																																																						
Drilling Company: <u>Geologic</u>	Inspector:																																																																																																																						
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<p><b>COMMENTS:</b></p> <p><u>Keep out bottom of well, remove</u> <u>grout in place remove protective casing</u> <u>backfill hole with remain grout</u></p>		<p><small>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</small></p>																																																																																																																					

Drilling Contractor  
3 bollards

Department Representative

Grout in place  
protective casing

MW-54D  
TD: 35  
Grade 32.4



MW-SSD

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

WELL DECOMMISSIONING RECORD						
Site Name: <u>Ash Lanthorn</u>	Well ID: <u>MW-SSD</u>					
Site Location: <u>SEAD 6</u>	Driller:					
Drilling Company: <u>Geolyx</u>	Inspector: <u>McAllister</u>					
Date:						
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*					
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text"/></p> <p>Casing retrieved (feet) <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FMLS) <input type="text" value="SS-8"/></p> <p># of batches prepared <input type="text" value="2"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="78 gal"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="284 lbs"/></p> <p>Cement type <input type="text" value="portland"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="20 lbs"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="50 gallon"/></p>	<p>Depth (feet)</p> <table style="width:100%; border: none;"> <tr> <td style="border: none; text-align: center;">10</td> <td style="border: none; text-align: center;">20</td> <td style="border: none; text-align: center;">30</td> <td style="border: none; text-align: center;">40</td> <td style="border: none; text-align: center;">50</td> </tr> </table>	10	20	30	40	50
10	20	30	40	50		
COMMENTS:	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.					

Drilling Contractor 3 bollards

Grout in place = 55'  
1 protective casing

Department Representative MW-55D

TD: 58.1  
Grab: 55.8

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW57D</u>
Site Location: <u>SEAD - ASH LANDFILL</u>	Driller: <u>David Lyons</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>
Date: <u>1/26/2011</u>	
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <u>Grout in place</u></p> <p>Casing retrieved (feet) <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="checkbox"/> <u>0 - 33.2 ft</u></p> <p># of batches prepared <input type="checkbox"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Typical Portland</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/></p>	<p>Depth (feet): 0, 10, 20, 30, 40</p> <p>Labels: 1.9 ft stickup removed, steel casing in place, PVC casing in place, Grout, 35.1 (Top to Bottom), 33.2 ft, Not Drilled</p>
<p>COMMENTS: <u>Depth to water = 2.74 ft. failed</u>  <u>Knocked out end plug. Loaded casing with</u>  <u>grout. cut off stickup. Grout in place.</u>  <u>Large grout plug. couldn't remove. cut casing</u>  <u>at grade &amp; grouted</u>  <u>in place.</u></p>	

Drilling Contractor: Geologic North Star Department Representative: \_\_\_\_\_

\* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-59</u>	
Site Location: <u>SEAD 8- ASH LAND FILL</u>	Driller: <u>Scott Breeds</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/16/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<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		
<u>CASING PULLING</u> Method employed Casing retrieved (feet) Casing type/dia. (in.)		
<u>CASE PERFORATING</u> Equipment used Number of perforations/foot Size of perforations Interval perforated		
<u>GROUTING</u> 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.)		
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Method employed Casing retrieved (feet) Casing type/dia. (in.)		
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COMMENTS: <u>Depth to water = 4.27 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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



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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MWT-11</u>
Site Location: <u>SEAD ASH LANDFILL</u>	Driller: <u>David Lion</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/20/10</u>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <u>10 FT</u></p> <p>Casing type/dia. (in.) <u>2" PVC</u></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <u>0-10.3</u></p> <p># of batches prepared <u>1</u></p> <p><b>For each batch record:</b></p> <p>Quantity of water used (gal.) <u>18</u></p> <p>Quantity of cement used (lbs.) <u>2 bags</u></p> <p>Cement type <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <u>11 gal</u></p>	<p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>Annotations: -0.3 ft stick up removed, 10.0 Top TO TD, LWRB Box, PULLED PVC WELL, Grout to surface Filled with box Bottom of well, NOT DRILLED</p>
<p><b>COMMENTS:</b> <u>Depth to water = 7.0 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW PT-11</u>																																																
Site Location: <u>SEAD - ASH LANDFILL</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star  
Drilling Contractor

sch. 40 PVC riser. Not threaded to screen. Push connection?

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW - PT-15</u>																																																
Site Location: <u>SEAD ASH LAND FILL</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Ash Landfill</u>	Well ID: <u>PT-21A</u>																																																
Site Location: <u>SEAD 6</u>	Driller:																																																
Drilling Company: <u>Geologic</u>	Inspector: <u>Matt G. Str</u>																																																
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<p>COMMENTS:</p> <p><u>Knocked out end cap, trimmed in grout, pulled entire PVC &amp; Risers topped off grout with concrete</u></p>																																																	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor  
Casidy pulled 20.4  
pulled 3 ballards  
protected casing & concrete

Department Representative  
TCC 204  
Interval 18.4  
Vol = 15.9  
PT-21A

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW PT-23</u>	
Site Location: <u>SEAD ASHLAND FILL</u>	Driller: <u>David Lyons</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/20/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<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 _____		
<u>CASING PULLING</u> Method employed <u>Grout, Pull, Grout</u> Casing retrieved (feet) <u>10.5 ft.</u> Casing type/dia. (in.) <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used _____ Number of perforations/foot _____ Size of perforations _____ Interval perforated _____		
<u>GROUTING</u> Interval grouted (FBLs) <u>11-17.7 ft</u> # of batches prepared <u>1</u> For each batch record: Quantity of water used (gal.) <u>18</u> Quantity of cement used (lbs.) <u>2 bags</u> Cement type <u>Type I Portland</u> Quantity of bentonite used (lbs.) <u>10 pounds</u> Quantity of calcium chloride used (lbs.) _____ Volume of grout prepared (gal.) _____ Volume of grout used (gal.) <u>7 gal.</u>		
COMMENTS: <u>Depth to water = <del>NA</del> NA ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW PT-25</u>																																																
Site Location: <u>SEAD - ASH LANDFILL</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/20/10</u>																																																	
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 4-1</u>																																																
Site Location: <u>SEAD 4</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 7.58 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <b>SEAD-4</b>	Well ID: <b>MW4-2</b>																																																
Site Location: <b>Munitions Wash out Facility</b>	Driller:																																																
Drilling Company:	Inspector: <b>McAllister</b>																																																
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<p><b>COMMENTS:</b></p> <p><b>Perforate casing, Grout, pull casing, Remove perforation case top off grout</b></p>																																																	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

*pull Casing*



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-3</u>																																																
Site Location: <u>SEAD-4</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/21/10</u>																																																	
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-5</u>																																																
Site Location: <u>SEAD</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-7</u>																																																
Site Location: <u>SEAD-4</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Geologic North Star  
 Drilling Contractor

Department Representative



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-9</u>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star  
Drilling Contractor

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Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-11</u>																																																
Site Location: <u>SEAD-4</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-12</u>																																																
Site Location: <u>SEAD 4</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW4-13</u>	
Site Location: <u>SEAD 4</u>	Driller: <u>Joe Marzell</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/22/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <u>Grout, Pul, Grout</u> Casing retrieved (feet) <input type="checkbox"/> <u>9 ft</u> Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <input type="checkbox"/> <u>1 = 6.4</u> # of batches prepared <input type="checkbox"/> <u>1</u> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <u>18</u> Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u> Cement type <input type="checkbox"/> <u>Type I Portland</u> Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/> <u>6 gal</u>		
<b>COMMENTS:</b> <u>Depth to water = 6.34 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		
* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW5-2</u>
Site Location: <u>SEAD 5</u>	Driller: <u>Steve Laramée</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/24/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>12 ft</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="checkbox"/> <u>1-9.4</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>9 gal.</u></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><b>COMMENTS:</b> <u>Depth to water = 6.88 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star  
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**Table 2-4  
Well Decommissioning Record  
Well Abandonment Plan  
Seneca Army Depot Activity**

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 11-1</u>																																																
Site Location: <u>SEAD-11</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>																																																
Date: <u>1/25/2011</u>																																																	
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<p><b>COMMENTS:</b> <u>Depth to water = 4.6 ft. from TC</u>  <u>Knocked out end plug. Loaded casing with</u>  <u>grout. Pulled casing. Topped off hole with</u>  <u>grout. Recovered all casing.</u></p>																																																	

\* 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

11-2

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

WELL DECOMMISSIONING RECORD																																																																																											
Site Name:	Well ID: <u>MW 11-2</u>																																																																																										
Site Location: <u>SEAD 11</u>	Driller:																																																																																										
Drilling Company:	Inspector:																																																																																										
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Drilling Contractor

Department Representative

1 protective casing  
1 casing pulled  
3 Bollards

12-2  
8-5  
WL 73

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW11-3</u>																																																
Site Location: <u>SEAD II</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/21/10</u>																																																	
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<p><b>COMMENTS:</b> <u>Depth to water = NA ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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



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

WELL DECOMMISSIONING RECORD	
Site Name:	Well ID: <i>MW11-4</i>
Site Location:	Driller:
Drilling Company:	Inspector:
Date:	
<p align="center">DECOMMISSIONING DATA (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text"/></p> <p>Casing retrieved (feet) <input type="text" value="13ft pulled."/></p> <p>Casing type/dia. (in.) <input type="text" value="2"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLS) <input type="text" value="10ft"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18 gallons"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="188 lbs"/></p> <p>Cement type <input type="text" value="Portland #1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 lbs"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text"/></p>	<p align="center">WELL SCHEMATIC*</p> <p>Depth (feet)</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p>_____</p> <p>2 _____</p> <p>4 _____</p> <p>6 _____</p> <p>8 _____</p> <p>10 _____</p> <p>12 _____</p> </div> <div style="flex-grow: 1;"> </div> </div>
COMMENTS:	* Sketch in all relevant decommissioning data, including interval overdrilled, interval grouted, casing left in hole, well stickup, etc.
<p><i>Knock out end cap, tremmie grout, pull PVC</i></p> <p><i>Top of grout Remove Ballard's crown</i></p> <p><i>Breakfill with soil.</i></p>	

Drilling Contractor

Department Representative

*Casing pulled*

*13.0*

*10.5*

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Construction Debris LF</u>	Well ID: <u>MW 11-5</u>																																																
Site Location: <u>SGAD-11</u>	Driller:																																																
Drilling Company: <u>Geologic NS</u>	Inspector:																																																
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Drilling Contractor

Department Representative

*Casing pulled*

*11 ft total*

*18 sft*



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW11-6</u>																																																
Site Location: <u>SEAD II</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW11-7</u>																																																
Site Location: <u>SEAD II</u>	Driller: <u>Daniel Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW12A2</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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.

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MU12-A-3</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Willman</u>																																																
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Geologic North Star  
Drilling Contractor

\* 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: <i>Seneca Army Depot</i>	Well ID: <i>MW12-B1</i>
Site Location: <i>MW12-B1 SEAD 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
	Date: <i>9/13/10</i>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text"/></p> <p>Casing retrieved (feet) <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="text"/></p> <p># of batches prepared <input type="text"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text"/></p> <p>Quantity of cement used (lbs.) <input type="text"/></p> <p>Cement type <input type="text"/></p> <p>Quantity of bentonite used (lbs.) <input type="text"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text"/></p>	
<p><u>COMMENTS:</u> <i>Depth to Water 12.01 feet TOC. Knocked out bottom plug. Filled casing with grout. Pulled casing. Tremie grouted remaining hole. Added soil above grout.</i></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

*Geologic North Star*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW-82-B2</u>
Site Location: <u>SEAN 12</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/13/10</u>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <u>Grout pull, brot</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>16'</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLS) <input type="checkbox"/> <u>#3-14'</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p><u>For each batch record:</u></p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type 1 Portland</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>13 gal</u></p>	<p>Depth (feet): 0, 5, 10, 15</p> <p>1.9' stickup removed</p> <p>TD 16 ft. from TOC</p> <p>Soil</p> <p>Grout Backfill</p> <p>Bottom of well</p> <p>not drilled</p> <p>pulled PVC well casing</p>
<p><u>COMMENTS:</u> <u>depth to water 12.05' from TOC.</u>  <u>Knocked out end plug. Tremie grouted casing.</u>  <u>pulled casing. Tremie grouted remaining</u>  <u>boring. Added soil above grout</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

Drilling Contractor \_\_\_\_\_

Department Representative \_\_\_\_\_

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

**WELL DECOMMISSIONING RECORD**

Site Name: <i>Seneca Army Depot</i>	Well ID: <del>MWB-3</del> <i>MW12-B3</i>
Site Location: <i>MW12-B3 Sead 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
	Date: <i>9/13/10</i>

**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

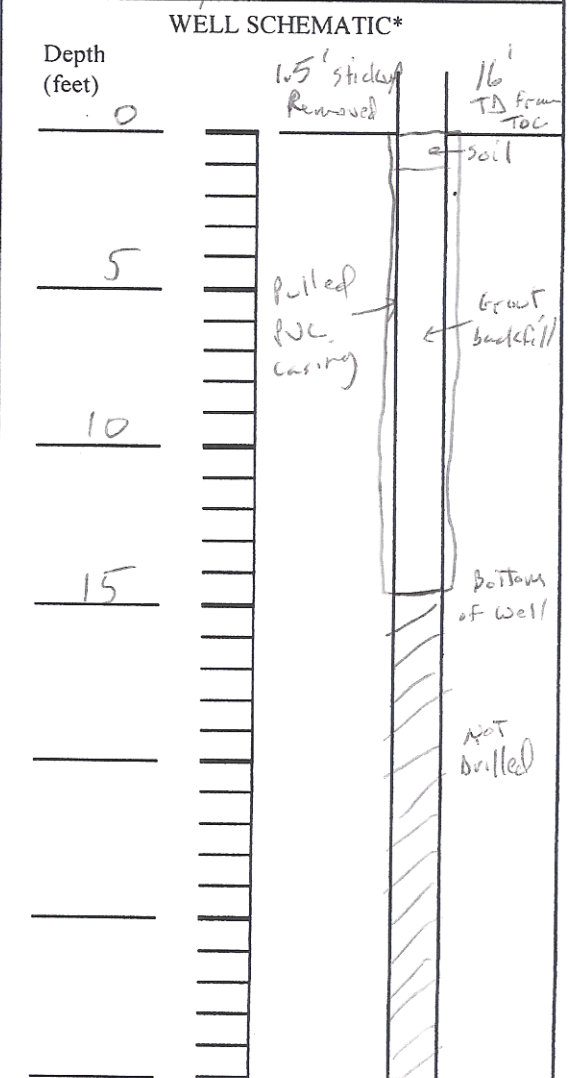
Method employed	<i>grout pull, grout</i>
Casing retrieved (feet)	<i>16 ft</i>
Casing type/dia. (in.)	<i>2" PVC</i>

CASE PERFORATING

Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	

GROUTING

Interval grouted (FBLs)	<i>1-14 ft.</i>
# of batches prepared	<i>1</i>
<b>For each batch record:</b>	
Quantity of water used (gal.)	<i>18</i>
Quantity of cement used (lbs.)	<i>2 bags</i>
Cement type	<i>Portland Type 1</i>
Quantity of bentonite used (lbs.)	<i>10 pounds</i>
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	<i>14 gal</i>



**COMMENTS:** *Depth to water 12.2' from TOC. Knocked out end cap. Tremie grouted casing with grout. Pulled casing. Tremie grouted remaining boring. Added soil above grout.*

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-01</i>																																																
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Hillman</i>																																																
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<p>COMMENTS: <i>Depth to water = 9.02 ft from TOC</i>  <i>Knocked out end cap. Loaded casing with grout.</i>  <i>Pulled casing. Grouted remaining boring.</i>  <i>Added soil on top.</i></p>																																																	

*Geologic North Star,*  
 \_\_\_\_\_  
 Drilling Contractor

\_\_\_\_\_  
 Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-02</i>																																																
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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<p>COMMENTS: <i>Depth to water 142' 7.75' ft. TAG</i>  <i>Knocked out end cap. Loaded casing with grout.</i>  <i>Pulled casing. Grouted remaining casing.</i>  <i>Tagged off with seal</i></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 12-03</u>																																																
Site Location: <u>SEAN 12</u>	Driller: <u>Steve Laramel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/15/10</u>																																																	
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<p>COMMENTS: <u>Depth to water 19.25' from TOC.</u>  <u>Knocked out bottom plug. Loaded casing with</u>  <u>grout. Pulled on casing. Retrieval - 6' riser and 4'</u>  <u>of screen. Screen broke. Grout remaining borehole</u>  <u>Added soil on top.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 12-04</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Gillman</u>																																																
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<p><u>COMMENTS:</u> <u>Depth to water 7.6 ft from TOC</u>  <u>Knocked off end cap, loaded casing with grout.</u>  <u>Pulled well casing, grouted remaining boring.</u>  <u>Add soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-05</u>
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/15/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <u>grout soil grout</u></p> <p>Casing retrieved (feet) <u>17.1 ft</u></p> <p>Casing type/dia. (in.) <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <u>1-18.1ft</u></p> <p># of batches prepared <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <u>18 gal</u></p> <p>Quantity of cement used (lbs.) <u>2 bags</u></p> <p>Cement type <u>Type 1 Per Head</u></p> <p>Quantity of bentonite used (lbs.) <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <u>18 gal</u></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><b>COMMENTS:</b> <u>Drift to water - 11.7 ft from TOC</u>  <u>Knocked off end cap. Loaded casing with grout.</u>  <u>Pulled casing. Screen broken. Left = 3.5 ft of screen.</u>  <u>Grouted remaining boring. Added soil on top.</u></p>	

\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW12-6</u>																																																
Site Location: <u>SEAD-12</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>1/25/2011</u>																																																	
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<p><u>COMMENTS:</u> <u>Depth to water = 4.50 ft. from TC</u>  <u>Knocked out end plug. Loaded casing with grout. Pulled casing out. Recov. all. Topped off grout. Picked up site.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <i>Seneca, SEAD 12</i>	Well ID: <i>MW 12-09</i>
Site Location: <i>←</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
Date: <i>12/13/10</i>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="Grout pull, Grout"/></p> <p>Casing retrieved (feet) <input type="text" value="16.6"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLS) <input type="text" value="1-13.8'"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="~13"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><b>COMMENTS:</b> <i>Depth to water 12.52 TOC</i></p> <p><i>Knocked out end cap. Loaded casing with grout. Pulled ground pipe and pulled PVC riser and screens.</i></p> <p><i>Tremie grouted remaining borehole. Added soil above grout.</i></p>	

\* 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

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

**WELL DECOMMISSIONING RECORD**

Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW-12-16</i>
Site Location: <i>MW12-16 SEAD 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
	Date: <i>9/13/10</i>

**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

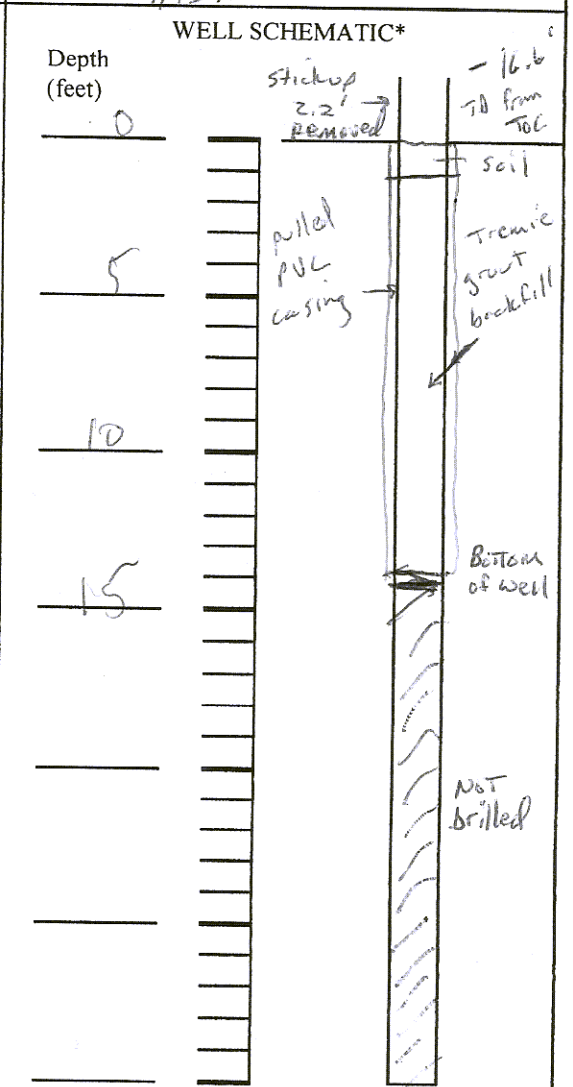
Method employed	<i>Grout, pull, Grout</i>
Casing retrieved (feet)	<i>16.6'</i>
Casing type/dia. (in.)	<i>2" PVC</i>

CASE PERFORATING

Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	

GROUTING

Interval grouted (FBLs)	<i>1-14'</i>
# of batches prepared	<i>1</i>
For each batch record:	
Quantity of water used (gal.)	<i>18</i>
Quantity of cement used (lbs.)	<i>2 bags</i>
Cement type	
Quantity of bentonite used (lbs.)	<i>10 pounds</i>
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	<i>14 gal.</i>



**COMMENTS:** *Depth to water 12.03*  
*Push out bottom plug. Load casing with grout.*  
*Pulled casing. Tremie grouted additional grout.*  
*Added soil above grout.*

\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW12-17</u>																																																
Site Location: <u>MW12-17 SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>North Star - Geologic</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-18</u>																																																
Site Location: <u>MW12-18 SEAN 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-19</i>
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
	Date: <i>9/14/10</i>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="Grout, pull, grout"/></p> <p>Casing retrieved (feet) <input type="text" value="13.3 ft"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBS) <input type="text" value="1-10.4 ft"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="11 gal"/></p>	
<p><u>COMMENTS:</u> <i>Depth to water = 7.56 from T.O.</i></p> <p><i>Knocked end plug off. Loaded casing full of grout. Pulled casing. Grouted remaining hole. Added soil at top.</i></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

*Geologic North Star*  
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Well Decommissioning Record  
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WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-20</u>																																																
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Well Decommissioning Record  
Well Abandonment Plan  
Seneca Army Depot Activity**

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-21</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p>COMMENTS: <u>Depth to water = 3 ft from TOC</u>  <u>Knocked off end cap. Loaded casing with</u>  <u>grout. Pulled casing. Grouted remaining</u>  <u>borehole. Add soil on top.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

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

WELL DECOMMISSIONING RECORD	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MAW12-22</i>
Site Location: <i>SEAD12</i>	Driller: <i>Scott Brooks</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
Date: <i>9/14/10</i>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <i>Grout Pull Grout</i></p> <p>Casing retrieved (feet) <input type="checkbox"/> <i>15.8'</i></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <i>2" PVC</i></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBS) <input type="checkbox"/> <i>1-13 ft.</i></p> <p># of batches prepared <input type="checkbox"/> <i>1</i></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <i>18</i></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <i>2 bags</i></p> <p>Cement type <input type="checkbox"/> <i>Type 1</i></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <i>10</i></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <i>13 gals.</i></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p><i>0</i></p> <p><i>5</i></p> <p><i>10</i></p> <p><i>15</i></p> <p><i>15.8'</i> T.O.C. TO D</p> <p><i>stickup 2.8 removed</i></p> <p><i>Soil</i></p> <p><i>Grout</i></p> <p><i>Bottom of well</i></p> <p><i>NOT DRILLED</i></p> <p><i>well casing</i></p> <p><i>pulled</i></p>
<p>COMMENTS: <i>Depth to water 9.35 from TOC</i></p> <p><i>Knocked off end cap. Filled casing with grout.</i></p> <p><i>Pulled casing. Filled remaining hole with grout.</i></p> <p><i>Put soil to surface.</i></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

*Geologic North Star*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW12-23</u>
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/14/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text"/></p> <p>Casing retrieved (feet) <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="text" value="1-13.8'"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="14 gallons"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><b>COMMENTS:</b> <u>Depth to water 8.8 ft from TOC.</u></p> <p><u>Knocked off end cap. Tremied grout into casing.</u></p> <p><u>Pulled casing. Added more grout to borehole</u></p> <p><u>Added soil to top.</u></p>	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-24</i>																																																
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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*Geologic North Star*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-25</u>																																																
Site Location: <u>SEAA 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW-12-26</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Well Decommissioning Record  
Well Abandonment Plan  
Seneca Army Depot Activity**

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MLD12-27</u>																																																
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<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table style="width:100%; border-collapse: collapse;"> <tr><td style="width: 40%;">Interval Drilled</td><td style="width: 60%;"><input type="checkbox"/></td></tr> <tr><td>Drilling Method(s)</td><td><input type="checkbox"/></td></tr> <tr><td>Borehole Dia. (in.)</td><td><input type="checkbox"/></td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td><input type="checkbox"/></td></tr> <tr><td>Depth temporary casing installed</td><td><input type="checkbox"/></td></tr> <tr><td>Casing type/dia. (in.)</td><td><input type="checkbox"/></td></tr> <tr><td>Method of installing</td><td><input type="checkbox"/></td></tr> </table> <p><u>CASING PULLING</u></p> <table style="width:100%; border-collapse: collapse;"> <tr><td style="width: 40%;">Method employed</td><td style="width: 60%;"><u>Grout pull/grout</u></td></tr> <tr><td>Casing retrieved (feet)</td><td><u>12.8 ft</u></td></tr> <tr><td>Casing type/dia. (in.)</td><td><u>2" PVC</u></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table style="width:100%; border-collapse: collapse;"> <tr><td style="width: 40%;">Equipment used</td><td style="width: 60%;"><input type="checkbox"/></td></tr> <tr><td>Number of perforations/foot</td><td><input type="checkbox"/></td></tr> <tr><td>Size of perforations</td><td><input type="checkbox"/></td></tr> <tr><td>Interval perforated</td><td><input type="checkbox"/></td></tr> </table> <p><u>GROUTING</u></p> <table style="width:100%; border-collapse: collapse;"> <tr><td style="width: 40%;">Interval grouted (FBLS)</td><td style="width: 60%;"><u>1 - 9.7 ft</u></td></tr> <tr><td># of batches prepared</td><td><u>1</u></td></tr> <tr><td colspan="2">For each batch record:</td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18 gal</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type I</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td><input type="checkbox"/></td></tr> <tr><td>Volume of grout prepared (gal.)</td><td><input type="checkbox"/></td></tr> <tr><td>Volume of grout used (gal.)</td><td><u>10 gal</u></td></tr> </table>	Interval Drilled	<input type="checkbox"/>	Drilling Method(s)	<input type="checkbox"/>	Borehole Dia. (in.)	<input type="checkbox"/>	Temporary Casing Installed? (y/n)	<input type="checkbox"/>	Depth temporary casing installed	<input type="checkbox"/>	Casing type/dia. (in.)	<input type="checkbox"/>	Method of installing	<input type="checkbox"/>	Method employed	<u>Grout pull/grout</u>	Casing retrieved (feet)	<u>12.8 ft</u>	Casing type/dia. (in.)	<u>2" PVC</u>	Equipment used	<input type="checkbox"/>	Number of perforations/foot	<input type="checkbox"/>	Size of perforations	<input type="checkbox"/>	Interval perforated	<input type="checkbox"/>	Interval grouted (FBLS)	<u>1 - 9.7 ft</u>	# of batches prepared	<u>1</u>	For each batch record:		Quantity of water used (gal.)	<u>18 gal</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type I</u>	Quantity of bentonite used (lbs.)	<u>10</u>	Quantity of calcium chloride used (lbs.)	<input type="checkbox"/>	Volume of grout prepared (gal.)	<input type="checkbox"/>	Volume of grout used (gal.)	<u>10 gal</u>	<p align="center"><b>WELL SCHEMATIC*</b></p>
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<p><b>COMMENTS:</b> <u>Depth to water 9.6 from TOC</u>  <u>Knocked off end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining hole.</u>  <u>Added soil out top.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-29</u>
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/14/10</u>
<p>DECOMMISSIONING DATA (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <u>Grout pull/grout</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>16.8 ft</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="checkbox"/> <u>1-13.8 ft</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type 1</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>14</u></p>	<p>WELL SCHEMATIC*</p>
<p>COMMENTS: <u>Depth to water 10' from TOC</u>  <u>Knocked out end cap. Traced casing full of grout.</u>  <u>Pulled casing. Traced remaining borehole with</u>  <u>grout. Topped off hole with soil.</u></p>	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-30</u>
Site Location: <u>SEAD 12 J</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/14/10</u>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/> <u>Grout full, Grout</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>16.8 feet</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="checkbox"/> <u>1-14'</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type 1</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>14</u></p>	
<p><u>COMMENTS:</u> <u>Depth to water 9.8' from TOC</u>  <u>Knock off end cap. Trimmed casing full of grout.</u>  <u>Pulled casing. Trimmed remaining borehole with</u>  <u>grout. Added soil to upper feet.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

Geologic North Star  
Drilling Contractor

Department Representative



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

WELL DECOMMISSIONING RECORD		
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-31</i>	
Site Location: <i>SEAA 12</i>	Driller: <i>Scott Breeds</i>	
Drilling Company: <i>Geologic Northstar</i>	Inspector: <i>Scott Dillman</i>	
	Date: <i>9/14/10</i>	
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*	
<u>OVERDRILLING</u>	<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;"> <p>Depth (feet)</p> <p style="text-align: center;"><i>0</i></p> <hr style="border: 1px solid black;"/> <p style="text-align: center;"><i>5</i></p> <hr style="border: 1px solid black;"/> <p style="text-align: center;"><i>10</i></p> <hr style="border: 1px solid black;"/> <p style="text-align: center;"><i>15</i></p> <hr style="border: 1px solid black;"/> </div> <div style="width: 70%; border-left: 1px solid black; border-right: 1px solid black; padding: 5px;"> <p style="text-align: center;"><i>stickup 3 removed</i></p> <p style="text-align: center;"><i>pulled PVC well</i></p> </div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; padding: 5px;"> <p style="text-align: center;"><i>13'</i> <i>Top to TD</i></p> <p style="text-align: center;"><i>Soil</i></p> <p style="text-align: center;"><i>Grout</i></p> </div> </div>	
Interval Drilled		
Drilling Method(s)		
Borehole Dia. (in.)		
Temporary Casing Installed? (y/n)		
Depth temporary casing installed		
Casing type/dia. (in.)		
Method of installing		
<u>CASING PULLING</u>		
Method employed		<i>Grout, Roll, Grout</i>
Casing retrieved (feet)	<i>13 ft</i>	
Casing type/dia. (in.)	<i>2" PVC</i>	
<u>CASE PERFORATING</u>		
Equipment used		
Number of perforations/foot		
Size of perforations		
Interval perforated		
<u>GROUTING</u>		
Interval grouted (FBS)	<i>0-10 ft</i>	
# of batches prepared	<i>1</i>	
For each batch record:		
Quantity of water used (gal.)	<i>18</i>	
Quantity of cement used (lbs.)	<i>2 bags</i>	
Cement type	<i>Type 1</i>	
Quantity of bentonite used (lbs.)	<i>10</i>	
Quantity of calcium chloride used (lbs.)		
Volume of grout prepared (gal.)		
Volume of grout used (gal.)	<i>10 gallons</i>	
COMMENTS: <i>Depth to water = 8.5' from TDC</i>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>	
<i>Knocked off end plug. Loaded casing with Grout</i>		
<i>Pulled casing. Grouted remaining boring</i>		
<i>Added soil on top.</i>		

*Geologic Northstar*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-32</i>
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dittman</i>
Date: <i>9/14/10</i>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="Grout pull, grout"/></p> <p>Casing retrieved (feet) <input type="text" value="13.1 ft"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBS) <input type="text" value="1-10.4"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="11 gal"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p><u>COMMENTS:</u> <i>depth to water = 7.76 ft. from TOC</i> <i>Knocked out end plug. Loaded casing with grout. pulled well. Grouted remaining borehole. Topped off with soil.</i></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

*Geologic North Star*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW12-35</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/13/10</u>																																																	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval Drilled</td><td></td></tr> <tr><td>Drilling Method(s)</td><td></td></tr> <tr><td>Borehole Dia. (in.)</td><td></td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td></td></tr> <tr><td>Depth temporary casing installed</td><td></td></tr> <tr><td>Casing type/dia. (in.)</td><td></td></tr> <tr><td>Method of installing</td><td></td></tr> </table> <p><u>CASING PULLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Method employed</td><td></td></tr> <tr><td>Casing retrieved (feet)</td><td></td></tr> <tr><td>Casing type/dia. (in.)</td><td></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Equipment used</td><td></td></tr> <tr><td>Number of perforations/foot</td><td></td></tr> <tr><td>Size of perforations</td><td></td></tr> <tr><td>Interval perforated</td><td></td></tr> </table> <p><u>GROUTING</u> - <u>GROUT IN PLACE</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval grouted (FBLs)</td><td><u>2-38 ft</u></td></tr> <tr><td># of batches prepared</td><td><u>1</u></td></tr> <tr><td colspan="2"><u>For each batch record:</u></td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type 1 Portland</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10 pounds</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td></td></tr> <tr><td>Volume of grout prepared (gal.)</td><td></td></tr> <tr><td>Volume of grout used (gal.)</td><td></td></tr> </table>	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 employed		Casing retrieved (feet)		Casing type/dia. (in.)		Equipment used		Number of perforations/foot		Size of perforations		Interval perforated		Interval grouted (FBLs)	<u>2-38 ft</u>	# of batches prepared	<u>1</u>	<u>For each batch record:</u>		Quantity of water used (gal.)	<u>18</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type 1 Portland</u>	Quantity of bentonite used (lbs.)	<u>10 pounds</u>	Quantity of calcium chloride used (lbs.)		Volume of grout prepared (gal.)		Volume of grout used (gal.)		<p align="center"><b>WELL SCHEMATIC*</b></p>
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<p><u>COMMENTS:</u> <u>Depth to water 13.4 ft. from TOC</u>  <u>Tremie grouted casing to ~3 ft.</u>  <u>Dig out upper casing and stickup.</u>  <u>Backfill upper hole with soil.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-38</i>
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>
	Date: <i>9/14/10</i>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="grout, pull, grout"/></p> <p>Casing retrieved (feet) <input type="text" value="10.5"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2\"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBS) <input type="text" value="0-10.5"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="10 gal"/></p>	
<p><u>COMMENTS:</u> <i>Depth to water 4.64 from TAC</i></p> <p><i>Loaded casing with grout. pulled casing. Finished base filling borehole with grout to near surface.</i></p> <p><i>Filled in curb box with grout. put curb box lid back on.</i></p> <p><i>knocked off bottom plug before adding grout.</i></p> <p><i>Geologic North Star</i></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

Drilling Contractor

Department Representative



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW12-39</i>																																																
Site Location: <i>SEAD 12</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12-40</u>																																																
Site Location: <u>SEAD 12</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Geologic North Star  
Drilling Contractor

\* 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: <i>Seneca Army Depot</i>	Well ID: <i>MW13-1</i>																																																
Site Location: <i>SEAD13</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW13-2</i>																																																
Site Location: <i>SEAD 13</i>	Driller: <i>Scott Breads</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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Department Representative



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW13-3</i>																																																
Site Location: <i>SEAD 13</i>	Driller: <i>Scott Breeds</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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*Geologic North Star*  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW13-4</u>
Site Location: <u>SEAD 13</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/16/10</u>	
<p align="center">DECOMMISSIONING DATA (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <u>12.5 ft</u></p> <p>Casing type/dia. (in.) <u>2" PVC</u></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <u>1-9.9</u></p> <p># of batches prepared <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <u>18</u></p> <p>Quantity of cement used (lbs.) <u>2 bags</u></p> <p>Cement type <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <u>9 gal</u></p>	<p align="center">WELL SCHEMATIC*</p> <p>Depth (feet)</p> <p>0</p> <p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p> <p>2.6' stick up removed</p> <p>12.5 TOP TO TD</p> <p>Soil</p> <p>PULLED PVC WELL</p> <p>Grout</p> <p>Bottom of well</p> <p>NOT DRILLED</p>
<p>COMMENTS: <u>Depth to water = 6.0 ft from TOC</u></p> <p><u>Knocked out end cap. Loaded casing with grout.</u></p> <p><u>Pulled casing. Grouted remaining borehole.</u></p> <p><u>Added soil on top.</u></p>	

\* 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

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

**WELL DECOMMISSIONING RECORD**

Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW13-5</u>
Site Location: <u>SEAD 13</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/16/10</u>

**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 Grout, Pull, Grout

Casing retrieved (feet) 18.75 ft

Casing type/dia. (in.) 2" PVC

CASE PERFORATING

Equipment used

Number of perforations/foot

Size of perforations

Interval perforated

GROUTING

Interval grouted (FBLs) 1-16.15 ft

# of batches prepared 1

For each batch record:

Quantity of water used (gal.) 18

Quantity of cement used (lbs.) 2 bags

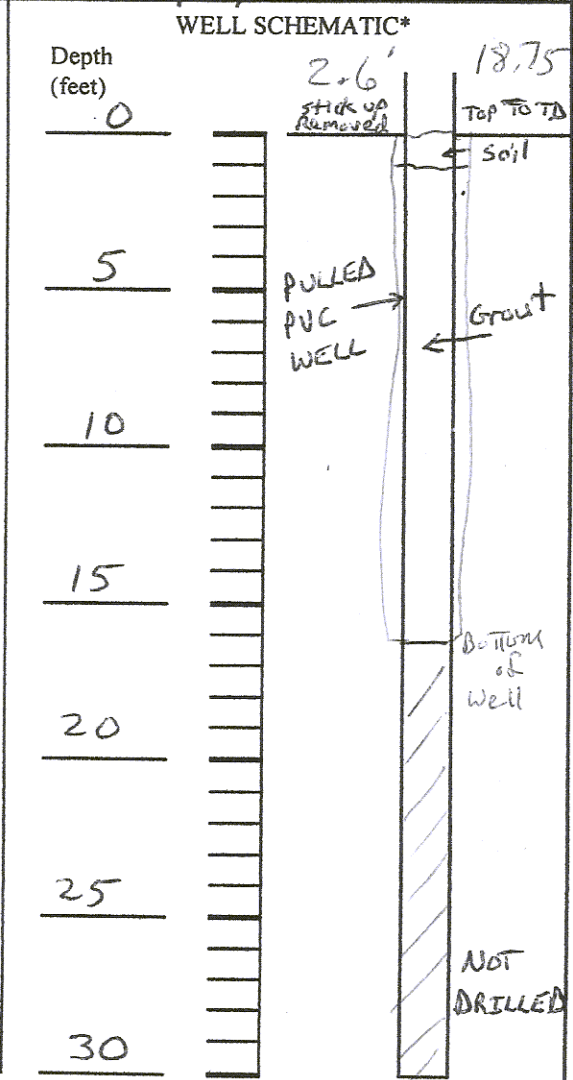
Cement type Type I Portland

Quantity of bentonite used (lbs.) 10 pounds

Quantity of calcium chloride used (lbs.)

Volume of grout prepared (gal.)

Volume of grout used (gal.) 17 gal.



**COMMENTS:** Depth to water = 8.52 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top.

\* 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



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

**WELL DECOMMISSIONING RECORD**

Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW13-6</u>
Site Location: <u>SEAD 13</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/16/10</u>

**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

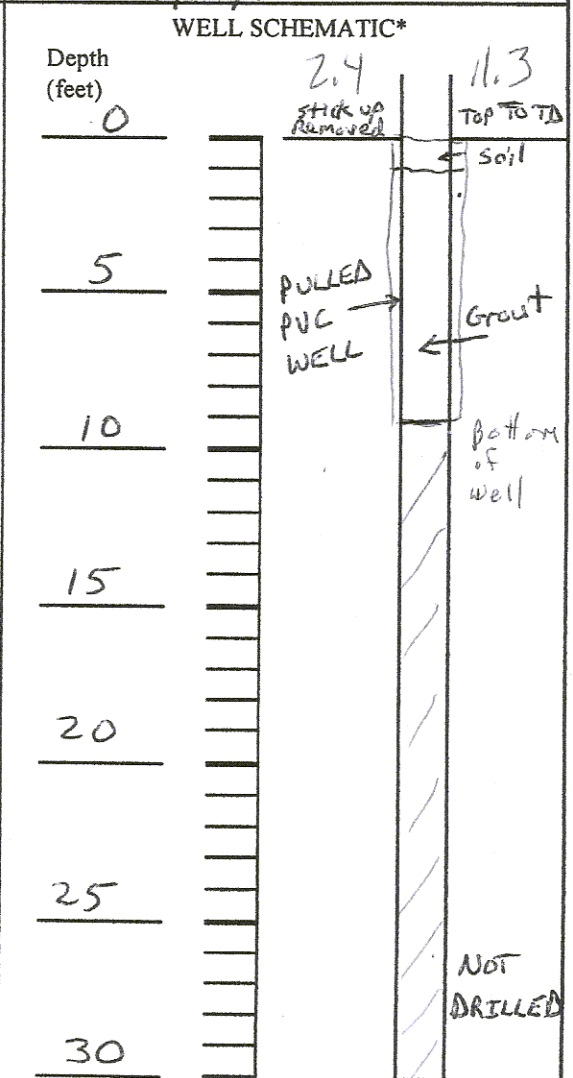
Method employed	<u>Grout, Pull, Grout</u>
Casing retrieved (feet)	<u>11.3 ft</u>
Casing type/dia. (in.)	<u>2" PVC</u>

CASE PERFORATING

Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	

GROUTING

Interval grouted (FBLs)	<u>1-9 ft</u>
# of batches prepared	<u>1</u>
<u>For each batch record:</u>	
Quantity of water used (gal.)	<u>18</u>
Quantity of cement used (lbs.)	<u>2 bags</u>
Cement type	<u>Type I Portland</u>
Quantity of bentonite used (lbs.)	<u>10 pounds</u>
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	<u>9 gal</u>



**COMMENTS:** Depth to water = 7.3 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top.

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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Seneca Army Depot Activity**

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<p><b>COMMENTS:</b> <u>Depth to water = 7.55 from TOC</u>  <u>Knocked off end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top</u></p>																																																	

\* 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

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

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<p><b>COMMENTS:</b> <u>Depth to water = 6 ft. from TOC</u> <u>Knocked off end plug. Grouted casing with</u> <u>grout. Pulled casing. Grouted rest of</u> <u>borehole. Add soil on top.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW13-10</u>
Site Location: <u>SEAD 13</u>	Driller: <u>Scott Braeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector:
Date:	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="Grout pull grout"/></p> <p>Casing retrieved (feet) <input type="text" value="16.2 ft"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="text" value="1-14.2"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18 gal"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1 Portland"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="14 gal"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p>
<p>COMMENTS: <u>Depth to water = 6.6 ft from TOC</u></p> <p><u>Knocked end cap off. Well casing came with rods.</u></p> <p><u>Tremie grouted hole. Added soil on top</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

Geologic North Star  
Drilling Contractor

*Notes*

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <i>Seneca Army Depot</i>	Well ID: <i>MW13-11</i>																																																
Site Location: <i>SEAD 13</i>	Driller: <i>Scott Breed's</i>																																																
Drilling Company: <i>Geologic North Star</i>	Inspector: <i>Scott Dillman</i>																																																
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*Geologic North Star*  
 \_\_\_\_\_  
 Drilling Contractor

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 Department Representative



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 13-12</u>																																																
Site Location: <u>SEAD 13</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p>COMMENTS: <u>Depth to water = 6.05 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 24-1</u>
Site Location: <u>SEAD-24</u>	Driller: <u>Joe Menzel</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/22/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <input type="text" value="Grout, Pull, Grout"/></p> <p>Casing retrieved (feet) <input type="text" value="12.1 ft"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <input type="text" value="1-9.6 ft"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type I Portland"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="9 gal"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p>0</p> <p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p> <p>2.5</p> <p>12.1</p> <p>Stick up Removed</p> <p>Top TO TD</p> <p>Soil</p> <p>Grout</p> <p>Bottom of well</p> <p>NOT DRILLED</p>
<p><b>COMMENTS:</b> <u>Depth to water = 6.52 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* 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

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

WELL DECOMMISSIONING RECORD									
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 24-2</u>								
Site Location: <u>SEAD 24</u>	Driller: <u>Joe Menzel</u>								
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>								
	Date: <u>9/22/10</u>								
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>								
<u>OVERDRILLING</u> Interval Drilled <table border="1" style="width:100%; height: 40px;"><tr><td> </td></tr></table> Drilling Method(s) <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table> Borehole Dia. (in.) <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table> Temporary Casing Installed? (y/n) <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table> Depth temporary casing installed <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table> Casing type/dia. (in.) <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table> Method of installing <table border="1" style="width:100%; height: 20px;"><tr><td> </td></tr></table>									
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COMMENTS: <u>Depth to water = 8.25 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>									
* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 24-3</u>																																																
Site Location: <u>SEAD 24</u>	Driller: <u>Scott Breeds Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

MW25-4D

WELL DECOMMISSIONING RECORD																																																	
Site Name: <b>SEAD-25</b>	Well ID: <b>MW25-4D</b>																																																
Site Location: <b>Fire Training area</b>	Driller:																																																
Drilling Company:	Inspector: <b>McAfee</b>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

*Grout in place.*

TD: 25.3  
Grd: 23.1

MW25-4D

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

WELL DECOMMISSIONING RECORD																																																																	
Site Name: <b>SEAD-25</b>	Well ID: <b>MW25-7D</b>																																																																
Site Location: <b>Fire training area</b>	Driller:																																																																
Drilling Company:	Inspector: <b>McAlister</b>																																																																
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<p><b>COMMENTS:</b>  <b>Remove Baloids, Tremmie Grout, Remove Protective casing, Top off Grout, Cut Steel-5 Casing, Backfill</b></p>		<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																															

Drilling Contractor

Department Representative

*Grout in place*

*30.2*

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

MW 25-11

WELL DECOMMISSIONING RECORD																																																	
Site Name: <b>SEAD 25</b>	Well ID: <b>MW-11</b>																																																
Site Location: <b>Fire training Area</b>	Driller:																																																
Drilling Company: <b>Geologic NS</b>	Inspector: <b>MCA/11/10</b>																																																
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<p><b>COMMENTS:</b></p> <p><b>Remove Ballasts, Remove end cap with perforation</b></p> <p><b>Remove Grout Remove protective casing spc</b></p> <p><b>Top off Grout Backfill</b></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>																																																

Drilling Contractor

Department Representative

*Casing pulled*

TD: **7.3**  
Grout = **5.5**

next to 12 D

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

MW25-12D

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SEAD-25</u>	Well ID: <u>MW-12D</u>																																																
Site Location: <u>Fire Training Area</u>	Driller:																																																
Drilling Company: <u>Gedonit</u>	Inspector: <u>McHugh</u>																																																
Date:																																																	
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<p>COMMENTS:</p> <p><u>Remove Ballards, perforate and cap, then use grout. Remove protective case &amp; concrete pad. (cp off grout), Backfill</u></p>																																																	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

*Grout in place*

TD: 25.1  
Grout 23.3  
MW25-12D



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

MW 25-14D

WELL DECOMMISSIONING RECORD																																																	
Site Name: <b>SEAD 25</b>	Well ID: <b>MW 25-14D</b>																																																
Site Location: <b>Fire training area</b>	Driller:																																																
Drilling Company: <b>Geodyte NS</b>	Inspector: <b>McAlosh</b>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

*Grout in place*

TD: 24.8  
Grout: 22.8

MW 25-14D

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

WELL DECOMMISSIONING RECORD																																																																														
Site Name: <b>SEAD-25</b>	Well ID: <b>MW 25-16D</b>																																																																													
Site Location: <b>Fire Training area</b>	Driller:																																																																													
Drilling Company: <b>George NS</b>	Inspector:																																																																													
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Drilling Contractor \_\_\_\_\_

Department Representative \_\_\_\_\_

25'  
MW 25-16D

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-1</u>																																																
Site Location: <u>SEAD 26</u>	Driller: <u>Steve Laramie</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 6.0 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-2</u>																																																
Site Location: <u>SEAD 26</u>	Driller: <u>Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-3</u>																																																
Site Location: <u>SEAD 26</u>	Driller: <u>Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-4</u>																																																
Site Location: <u>SEAD 26</u>	Driller: <u>Steve Casamee</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-5</u>																																																
Site Location: <u>SEAD</u>	Driller: <u>Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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Geologic North Star  
Drilling Contractor

Department Representative



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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-6</u>
Site Location: <u>SEAD 26</u>	Driller: <u>Joe Menzel</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/23/10</u>	
<p align="center">DECOMMISSIONING DATA (Fill in all that apply)</p> <p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <input type="checkbox"/> <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>17.0 ft</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBSL) <input type="checkbox"/> <u>1-17</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>1 gal</u></p>	<p align="center">WELL SCHEMATIC*</p> <p>Depth (feet)</p> <p>0</p> <p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p> <p>1.8 ft stick up removed</p> <p>17.00 ft Top TO TD</p> <p>Soil</p> <p>PULLED PVC WELL</p> <p>Grout</p> <p>Bottom of Well</p> <p>NOT DRILLED</p>
<p><b>COMMENTS:</b> <u>Depth to water = 13.37 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* 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

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-7</u>	
Site Location: <u>SEAD 26</u>	Driller: <u>Steve Loranee</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/23/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <u>Grout, Pull, Grout</u> Casing retrieved (feet) <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <input type="checkbox"/> <u>1-18 ft</u> # of batches prepared <input type="checkbox"/> <u>1</u> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <u>18</u> Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u> Cement type <input type="checkbox"/> <u>Type I Portland</u> Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/> <u>17 gal</u>		
COMMENTS: <u>Depth to water = ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		
* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW26-8</u>
Site Location: <u>SEAD 24</u>	Driller: <u>Steve Lawrence</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/23/10</u>	
<p align="center">DECOMMISSIONING DATA (Fill in all that apply)</p> <p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <input type="checkbox"/> <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <input type="checkbox"/> <u>13.5 ft</u></p> <p>Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <input type="checkbox"/> <u>1-13.5 ft</u></p> <p># of batches prepared <input type="checkbox"/> <u>1</u></p> <p><b>For each batch record:</b></p> <p>Quantity of water used (gal.) <input type="checkbox"/> <u>18</u></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u></p> <p>Cement type <input type="checkbox"/> <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/> <u>12 gal</u></p>	<p align="center">WELL SCHEMATIC*</p> <p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p>
<p>COMMENTS: <u>Depth to water = 11.0 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-10</u>																																																
Site Location: <u>SEAD 26</u>	Driller: <u>Steve Loran</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/23/10</u>																																																	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval Drilled</td><td></td></tr> <tr><td>Drilling Method(s)</td><td></td></tr> <tr><td>Borehole Dia. (in.)</td><td></td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td></td></tr> <tr><td>Depth temporary casing installed</td><td></td></tr> <tr><td>Casing type/dia. (in.)</td><td></td></tr> <tr><td>Method of installing</td><td></td></tr> </table> <p><u>CASING PULLING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Method employed</td><td><u>Grout, Pull, Grout</u></td></tr> <tr><td>Casing retrieved (feet)</td><td><u>13.5 ft</u></td></tr> <tr><td>Casing type/dia. (in.)</td><td><u>2" PVC</u></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Equipment used</td><td></td></tr> <tr><td>Number of perforations/foot</td><td></td></tr> <tr><td>Size of perforations</td><td></td></tr> <tr><td>Interval perforated</td><td></td></tr> </table> <p><u>GROUTING</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Interval grouted (FBLs)</td><td><u>1-12 ft</u></td></tr> <tr><td># of batches prepared</td><td><u>1</u></td></tr> <tr><td>For each batch record:</td><td></td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type I Portland</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10 pounds</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td></td></tr> <tr><td>Volume of grout prepared (gal.)</td><td></td></tr> <tr><td>Volume of grout used (gal.)</td><td><u>12 gal.</u></td></tr> </table>	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 employed	<u>Grout, Pull, Grout</u>	Casing retrieved (feet)	<u>13.5 ft</u>	Casing type/dia. (in.)	<u>2" PVC</u>	Equipment used		Number of perforations/foot		Size of perforations		Interval perforated		Interval grouted (FBLs)	<u>1-12 ft</u>	# of batches prepared	<u>1</u>	For each batch record:		Quantity of water used (gal.)	<u>18</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type I Portland</u>	Quantity of bentonite used (lbs.)	<u>10 pounds</u>	Quantity of calcium chloride used (lbs.)		Volume of grout prepared (gal.)		Volume of grout used (gal.)	<u>12 gal.</u>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p>0</p> <p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p> <p>1.5 ft Stick up Removed</p> <p>13.5</p> <p>Top TO TD</p> <p>Soil</p> <p>PULLED PVC WELL</p> <p>Grout</p> <p>Bottom of well</p> <p>NOT DRILLED</p>
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Volume of grout used (gal.)	<u>12 gal.</u>																																																
<p><b>COMMENTS:</b> <u>Depth to water = 9.0 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 26-11</u>
Site Location: <u>SEAD 26</u>	Driller: <u>Joe Mezzel</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/23/10</u>
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <input type="checkbox"/></p> <p>Casing retrieved (feet) <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <input type="checkbox"/></p> <p># of batches prepared <input type="checkbox"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/></p> <p>Cement type <input type="checkbox"/></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>1.34 ft stick up removed</p> <p>16.4 ft Top to TD</p> <p>Soil &amp; Concrete</p> <p>GROUT</p> <p>PULLED PVC WELL</p> <p>Bottom of Well</p> <p>NOT DRILLED</p>
<p><b>COMMENTS:</b> <u>Depth to water = 15.43 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* 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



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

**WELL DECOMMISSIONING RECORD**

Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 27-1</u>
Site Location: <u>SEAD 27</u>	Driller: <u>Joe Menzel</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/23/10</u>

**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

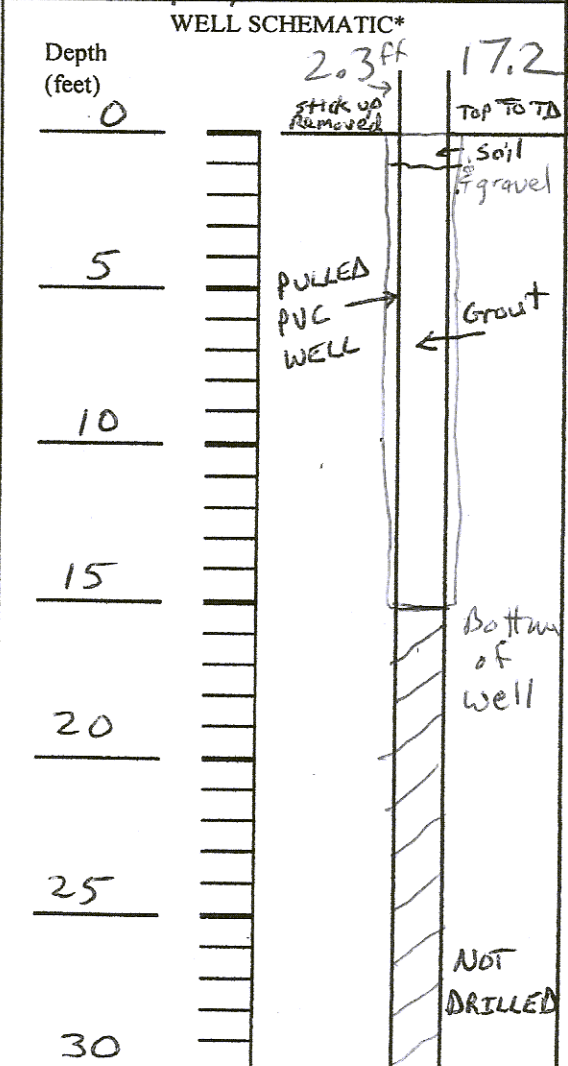
Method employed	<u>Grout, Pull, Grout</u>
Casing retrieved (feet)	<u>17.2 ft</u>
Casing type/dia. (in.)	<u>2" PVC</u>

CASE PERFORATING

Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	

GROUTING

Interval grouted (FBLs)	<u>1-14.9 ft</u>
# of batches prepared	<u>1</u>
<u>For each batch record:</u>	
Quantity of water used (gal.)	<u>18</u>
Quantity of cement used (lbs.)	<u>2 bags</u>
Cement type	<u>Type I Portland</u>
Quantity of bentonite used (lbs.)	<u>10 pounds</u>
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	<u>18 gal</u>



**COMMENTS:** Depth to water = 6.33 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top.

\* 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

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

WELL DECOMMISSIONING RECORD									
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 27-2</u>								
Site Location: <u>SEAD 27</u>	Driller: <u>Joe Menzel</u>								
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>								
	Date: <u>9/23/10</u>								
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>								
<u>OVERDRILLING</u> Interval Drilled <table border="1" style="width: 100%; height: 40px;"><tr><td> </td></tr></table> Drilling Method(s) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Borehole Dia. (in.) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Temporary Casing Installed? (y/n) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Depth temporary casing installed <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Casing type/dia. (in.) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Method of installing <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table>									
<u>CASING PULLING</u> Method employed <table border="1" style="width: 100%; height: 20px;"><tr><td><u>Grout, Pull, Grout</u></td></tr></table> Casing retrieved (feet) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>17.4 ft</u></td></tr></table> Casing type/dia. (in.) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>2" PVC</u></td></tr></table>	<u>Grout, Pull, Grout</u>	<u>17.4 ft</u>	<u>2" PVC</u>						
<u>Grout, Pull, Grout</u>									
<u>17.4 ft</u>									
<u>2" PVC</u>									
<u>CASE PERFORATING</u> Equipment used <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Number of perforations/foot <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Size of perforations <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Interval perforated <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table>									
<u>GROUTING</u> Interval grouted (FBLs) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>1-14.8 ft</u></td></tr></table> # of batches prepared <table border="1" style="width: 100%; height: 20px;"><tr><td><u>1</u></td></tr></table> For each batch record: Quantity of water used (gal.) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>18</u></td></tr></table> Quantity of cement used (lbs.) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>2 bags</u></td></tr></table> Cement type <table border="1" style="width: 100%; height: 20px;"><tr><td><u>Type 1 Portland</u></td></tr></table> Quantity of bentonite used (lbs.) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>10 pounds</u></td></tr></table> Quantity of calcium chloride used (lbs.) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Volume of grout prepared (gal.) <table border="1" style="width: 100%; height: 20px;"><tr><td> </td></tr></table> Volume of grout used (gal.) <table border="1" style="width: 100%; height: 20px;"><tr><td><u>18 gal</u></td></tr></table>	<u>1-14.8 ft</u>	<u>1</u>	<u>18</u>	<u>2 bags</u>	<u>Type 1 Portland</u>	<u>10 pounds</u>			<u>18 gal</u>
<u>1-14.8 ft</u>									
<u>1</u>									
<u>18</u>									
<u>2 bags</u>									
<u>Type 1 Portland</u>									
<u>10 pounds</u>									
<u>18 gal</u>									
COMMENTS: <u>Depth to water = 6.25 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>	* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW48-1</u>																																																
Site Location: <u>SEAD 48</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/21/10</u>																																																	
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW48-Z</u>																																																
Site Location: <u>SEAD</u>	Driller: <u>Steve Laramee</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Ben McAllister</u>																																																
Date: <u>9/23/10</u>																																																	
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\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW48-3</u>																																																
Site Location: <u>SEAD-48</u>	Driller: <u>David Lion</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>9/21/10</u>																																																	
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\* 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

MW48-4

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <b>SEAD-48</b>	Well ID: <b>MW48-4</b>																																																
Site Location: <b>Pitchblende Storage</b>	Driller:																																																
Drilling Company: <b>Geologic NS</b>	Inspector:																																																
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Drilling Contractor

Department Representative

*Costly pulley  
3 ballands & concrete pad with protective cover*

MW 48-5

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

WELL DECOMMISSIONING RECORD		
Site Name: <b>SEAD 48</b>	Well ID: <b>MW 48-5</b>	
Site Location: <b>Pitchblend Storage</b>	Driller:	
Drilling Company:	Inspector:	
	Date:	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Depth (feet)</div> <div style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;">             3  6  9  12  15  18           </div> <div style="margin-left: 10px;"> </div> </div>	
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <b>pull</b> Casing retrieved (feet) <input type="checkbox"/> <b>15 ft</b> Casing type/dia. (in.) <input type="checkbox"/> <b>2" PVC</b>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <input type="checkbox"/> <b>13 ft</b> # of batches prepared <input type="checkbox"/> <b>1</b> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <b>18</b> Quantity of cement used (lbs.) <input type="checkbox"/> <b>188</b> Cement type <input type="checkbox"/> <b>Portland #1</b> Quantity of bentonite used (lbs.) <input type="checkbox"/> <b>10 lbs</b> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/>		
<b>COMMENTS:</b> <b>Knock off end cap remove grout pull casing top off grout backfill</b>		
<small>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</small>		

Drilling Contractor  
**Pull Casing**  
**3 Bollards**  
**1 protection cover & pad**

Department Representative  
**ES TD**



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

WELL DECOMMISSIONING RECORD		
Site Name: <b>SEAD 48</b>	Well ID: <b>MW-48-6</b>	
Site Location: <b>Pit/bleed Storage</b>	Driller:	
Drilling Company: <b>Geologic NS</b>	Inspector:	
	Date:	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>	Depth (feet) 	
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <b>pull</b> Casing retrieved (feet) <input type="checkbox"/> <b>10ft</b> Casing type/dia. (in.) <input type="checkbox"/> <b>2" PVC</b>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <input type="checkbox"/> <b>8ft</b> # of batches prepared <input type="checkbox"/> <b>1</b> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <b>18</b> Quantity of cement used (lbs.) <input type="checkbox"/> <b>180</b> Cement type <input type="checkbox"/> <b>Portland #1</b> Quantity of bentonite used (lbs.) <input type="checkbox"/> <b>10 lbs</b> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/>		
COMMENTS: <b>Perforate end cap - remove Grout</b> <b>pull PVC casing - top off grout pull</b> <b>cover w/ bollards, Backfill with sur/</b>		* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

**Casing pulled 11ft Recovered**  
**3 bollards & 1 protective casing & pad.**

**DD = 11.0**  
**Grub = 8**  
**WL = 5ft**

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW48-7</u>																																																
Site Location: <u>SEAD-48</u>	Driller: <u>Joe Menze</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 7.71 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top. Next to Sida ED 708.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW48-8</u>																																																
Site Location: <u>SEAD-48</u>	Driller: <u>Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 6.39 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 59-1</u>																																																
Site Location: <u>SEAD-59</u>	Driller: <u>David Lips</u>																																																
Drilling Company: <u>Geologic North star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>1/25/2011</u>																																																	
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<p><b>COMMENTS:</b> <u>Depth to water = 3.84 ft. from TC</u>  <u>Knocked out end plug. Loaded casing with grout. Pulled casing. Recovered all. Topped off grout</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 59-2</u>																																																
Site Location: <u>SEAD 59</u>	Driller: <u>Steve Laramée</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW59-4</u>	
Site Location: <u>SEAD 59</u>	Driller: <u>Joe Menzel</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/23/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <u>Grout, Pull, Grout</u> Casing retrieved (feet) <u>8.6 ft</u> Casing type/dia. (in.) <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <u>1-7.1</u> # of batches prepared <u>1</u> For each batch record: Quantity of water used (gal.) <u>18</u> Quantity of cement used (lbs.) <u>2 bags</u> Cement type <u>Type I Portland</u> Quantity of bentonite used (lbs.) <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <u>8 gal</u>		
COMMENTS: <u>Depth to water = 5.4 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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



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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 59-7</u>
Site Location: <u>SEAD 59</u>	Driller: <u>Steve Laramée</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/24/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <input type="text" value="Grout, Pull, Grout"/></p> <p>Casing retrieved (feet) <input type="text" value="14.5 ft"/></p> <p>Casing type/dia. (in.) <input pvc"="" type="text" value="2"/></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <input type="text" value="1-12 ft"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p><b>For each batch record:</b></p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type I Portland"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10 pounds"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="12 gal"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>Annotations: 2.7 ft stick up removed, 14.7 ft top to TD, Soil, Grout, PULLED PVC WELL, Bottom of well, NOT DRILLED</p>
<p><b>COMMENTS:</b> <u>Depth to water = 6.24 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>	

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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

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Geologic North Star

Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW63-1</u>																																																
Site Location: <u>SEAD 63</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW63-2</u>
Site Location: <u>SEAD 63</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/14/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="text"/></p> <p>Drilling Method(s) <input type="text"/></p> <p>Borehole Dia. (in.) <input type="text"/></p> <p>Temporary Casing Installed? (y/n) <input type="text"/></p> <p>Depth temporary casing installed <input type="text"/></p> <p>Casing type/dia. (in.) <input type="text"/></p> <p>Method of installing <input type="text"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="text" value="grout pull, grout"/></p> <p>Casing retrieved (feet) <input type="text" value="9.6'"/></p> <p>Casing type/dia. (in.) <input type="text" value="2\"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="text"/></p> <p>Number of perforations/foot <input type="text"/></p> <p>Size of perforations <input type="text"/></p> <p>Interval perforated <input type="text"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="text" value="1-7.5'"/></p> <p># of batches prepared <input type="text" value="1"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="text" value="18"/></p> <p>Quantity of cement used (lbs.) <input type="text" value="2 bags"/></p> <p>Cement type <input type="text" value="Type 1"/></p> <p>Quantity of bentonite used (lbs.) <input type="text" value="10"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="text"/></p> <p>Volume of grout prepared (gal.) <input type="text"/></p> <p>Volume of grout used (gal.) <input type="text" value="8 gal."/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p>5</p> <p>10</p> <p>15</p>
<p>COMMENTS: <u>depth to water from Tac = 7.0'</u>  <u>Knocked off end cap, loaded casing full of grout.</u>  <u>Pulled casing. Filled remaining hole with grout.</u>  <u>Added soil on top of grout.</u></p>	

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Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW63-3</u>																																																
Site Location: <u>SEAD 63</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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

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Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW67-1</u>																																																
Site Location: <u>SEAD 67</u>	Driller: <u>Scott Breeds</u>																																																
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Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW67-2</u>																																																
Site Location: <u>SEAD 67</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MD 70-3</u>
Site Location: <u>SEAD 70</u>	Driller: <u>Scott Breeds</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/16/10</u>	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><u>CASING PULLING</u></p> <p>Method employed <input type="checkbox"/></p> <p>Casing retrieved (feet) <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p><u>CASE PERFORATING</u></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><u>GROUTING</u></p> <p>Interval grouted (FBLs) <input type="checkbox"/></p> <p># of batches prepared <input type="checkbox"/></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <input type="checkbox"/></p> <p>Quantity of cement used (lbs.) <input type="checkbox"/></p> <p>Cement type <input type="checkbox"/></p> <p>Quantity of bentonite used (lbs.) <input type="checkbox"/></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/></p>	<p align="center"><b>WELL SCHEMATIC*</b></p> <p>Depth (feet)</p> <p><u>0</u> <span style="margin-left: 20px;"><u>stickup</u></span></p> <p><u>5</u> <span style="margin-left: 20px;"><u>gone</u> →</span></p> <p><span style="margin-left: 20px;"><u>no casing found</u> →</span></p>
<p><b>COMMENTS:</b> <u>Well abandoned previously?</u> <u>Broken pad concrete at location &amp; bollards</u> <u>are removed prev? Dug down and did not</u> <u>finish well casing &amp; topped off hole with grout.</u></p>	<p>* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.</p>

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW70-4</u>	
Site Location: <u>SEAD 70</u>	Driller: <u>Scott Breeds</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/16/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <u>GROUT, PULL, GROUT</u> Casing retrieved (feet) <input type="checkbox"/> <u>11.4 FT</u> Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <input type="checkbox"/> <u>1-10</u> # of batches prepared <input type="checkbox"/> <u>1</u> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <u>18</u> Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u> Cement type <input type="checkbox"/> <u>Type I Portland</u> Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/> <u>10</u>		
COMMENTS: <u>Depth to water = 11.4 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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

*Handwritten initials*



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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 71-1</u>
Site Location: <u>SEAD 71</u>	Driller: <u>Steve Laramée</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/24/10</u>
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>
<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	
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<u>CASE PERFORATING</u> Equipment used Number of perforations/foot Size of perforations Interval perforated	
<u>GROUTING</u> Interval grouted (FBS) # 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.)	
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Method employed Casing retrieved (feet) Casing type/dia. (in.)	

COMMENTS: Depth to water = 9.3 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top. Wouldn't pull. Well grouted in place.

\* 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

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

WELL DECOMMISSIONING RECORD	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 71-2</u>
Site Location: <u>SEAD 71</u>	Driller: <u>Steve Laramee</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/24/10</u>
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC*
<p><b>OVERDRILLING</b></p> <p>Interval Drilled <input type="checkbox"/></p> <p>Drilling Method(s) <input type="checkbox"/></p> <p>Borehole Dia. (in.) <input type="checkbox"/></p> <p>Temporary Casing Installed? (y/n) <input type="checkbox"/></p> <p>Depth temporary casing installed <input type="checkbox"/></p> <p>Casing type/dia. (in.) <input type="checkbox"/></p> <p>Method of installing <input type="checkbox"/></p> <p><b>CASING PULLING</b></p> <p>Method employed <u>Grout, Pull, Grout</u></p> <p>Casing retrieved (feet) <u>0-0</u></p> <p>Casing type/dia. (in.) <u>2" PVC</u></p> <p><b>CASE PERFORATING</b></p> <p>Equipment used <input type="checkbox"/></p> <p>Number of perforations/foot <input type="checkbox"/></p> <p>Size of perforations <input type="checkbox"/></p> <p>Interval perforated <input type="checkbox"/></p> <p><b>GROUTING</b></p> <p>Interval grouted (FBLs) <u>0-6.6ft</u></p> <p># of batches prepared <u>1</u></p> <p>For each batch record:</p> <p>Quantity of water used (gal.) <u>18</u></p> <p>Quantity of cement used (lbs.) <u>2 bags</u></p> <p>Cement type <u>Type I Portland</u></p> <p>Quantity of bentonite used (lbs.) <u>10 pounds</u></p> <p>Quantity of calcium chloride used (lbs.) <input type="checkbox"/></p> <p>Volume of grout prepared (gal.) <input type="checkbox"/></p> <p>Volume of grout used (gal.) <input type="checkbox"/></p>	<p>Depth (feet)</p> <p><u>0</u> <span style="float: right;">FLUSH MOUNT No stick up Removed</span></p> <p><u>5</u> <span style="float: right;">6.6ft from grade TOP TO TD Soil</span></p> <p><u>10</u> <span style="float: right;">Curb Box Filled with grout PULLED PVC WELL WOULD NOT PULL GROUTED IN PLACE Grout Bottom of well</span></p> <p><u>15</u></p> <p><u>20</u></p> <p><u>25</u></p> <p><u>30</u> <span style="float: right;">NOT DRILLED</span></p>
<p><b>COMMENTS:</b> <u>Depth to water = _____ ft from TOC</u></p> <p><u>Knocked out end cap. Loaded casing with grout.</u></p> <p><u>Pulled casing. Grouted remaining borehole.</u></p> <p><u>Added soil on top. Left curb box in place.</u></p> <p align="right"><u>Filled with grout.</u></p>	

Geologic North Star  
Drilling Contractor

Department Representative

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW71-3</u>																																																
Site Location: <u>SEAD-71</u>	Driller: <u>David Lyons</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
Date: <u>1/25/2011</u>																																																	
<p align="center"><b>DECOMMISSIONING DATA</b> (Fill in all that apply)</p> <p><u>OVERDRILLING</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Interval Drilled</td><td style="width: 100px;"> </td></tr> <tr><td>Drilling Method(s)</td><td> </td></tr> <tr><td>Borehole Dia. (in.)</td><td> </td></tr> <tr><td>Temporary Casing Installed? (y/n)</td><td> </td></tr> <tr><td>Depth temporary casing installed</td><td> </td></tr> <tr><td>Casing type/dia. (in.)</td><td> </td></tr> <tr><td>Method of installing</td><td> </td></tr> </table> <p><u>CASING PULLING</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Method employed</td><td><u>Knock, grout, pull, grout</u></td></tr> <tr><td>Casing retrieved (feet)</td><td><u>7.6'</u></td></tr> <tr><td>Casing type/dia. (in.)</td><td><u>2" PVC</u></td></tr> </table> <p><u>CASE PERFORATING</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Equipment used</td><td> </td></tr> <tr><td>Number of perforations/foot</td><td> </td></tr> <tr><td>Size of perforations</td><td> </td></tr> <tr><td>Interval perforated</td><td> </td></tr> </table> <p><u>GROUTING</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Interval grouted (FBLs)</td><td><u>0-6.1</u></td></tr> <tr><td># of batches prepared</td><td> </td></tr> <tr><td>For each batch record:</td><td> </td></tr> <tr><td>Quantity of water used (gal.)</td><td><u>18</u></td></tr> <tr><td>Quantity of cement used (lbs.)</td><td><u>2 bags</u></td></tr> <tr><td>Cement type</td><td><u>Type 1 portland</u></td></tr> <tr><td>Quantity of bentonite used (lbs.)</td><td><u>10 pounds</u></td></tr> <tr><td>Quantity of calcium chloride used (lbs.)</td><td> </td></tr> <tr><td>Volume of grout prepared (gal.)</td><td> </td></tr> <tr><td>Volume of grout used (gal.)</td><td> </td></tr> </table>	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 employed	<u>Knock, grout, pull, grout</u>	Casing retrieved (feet)	<u>7.6'</u>	Casing type/dia. (in.)	<u>2" PVC</u>	Equipment used		Number of perforations/foot		Size of perforations		Interval perforated		Interval grouted (FBLs)	<u>0-6.1</u>	# of batches prepared		For each batch record:		Quantity of water used (gal.)	<u>18</u>	Quantity of cement used (lbs.)	<u>2 bags</u>	Cement type	<u>Type 1 portland</u>	Quantity of bentonite used (lbs.)	<u>10 pounds</u>	Quantity of calcium chloride used (lbs.)		Volume of grout prepared (gal.)		Volume of grout used (gal.)		<p align="center"><b>WELL SCHEMATIC*</b></p>
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<p><u>COMMENTS:</u> <u>Depth to water = 7.28' ft. from TC</u>  <u>Knocked out end plug. Loaded casing with</u>  <u>grout. Pulled casing. Recovered all. Topped</u>  <u>off grout to surface.</u></p>																																																	

\* 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



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

**WELL DECOMMISSIONING RECORD**

Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 71-4</u>
Site Location: <u>SEAD T1</u>	Driller: <u>Steve Laramée</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
Date: <u>9/24/10</u>	

**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 Grout, Pull, Grout

Casing retrieved (feet) 15.9 ft

Casing type/dia. (in.) 2" PVC

**CASE PERFORATING**

Equipment used \_\_\_\_\_

Number of perforations/foot \_\_\_\_\_

Size of perforations \_\_\_\_\_

Interval perforated \_\_\_\_\_

**GROUTING**

Interval grouted (FBLs) 1-18.7 ft

# of batches prepared 1

For each batch record:

Quantity of water used (gal.) 18

Quantity of cement used (lbs.) 2 bags

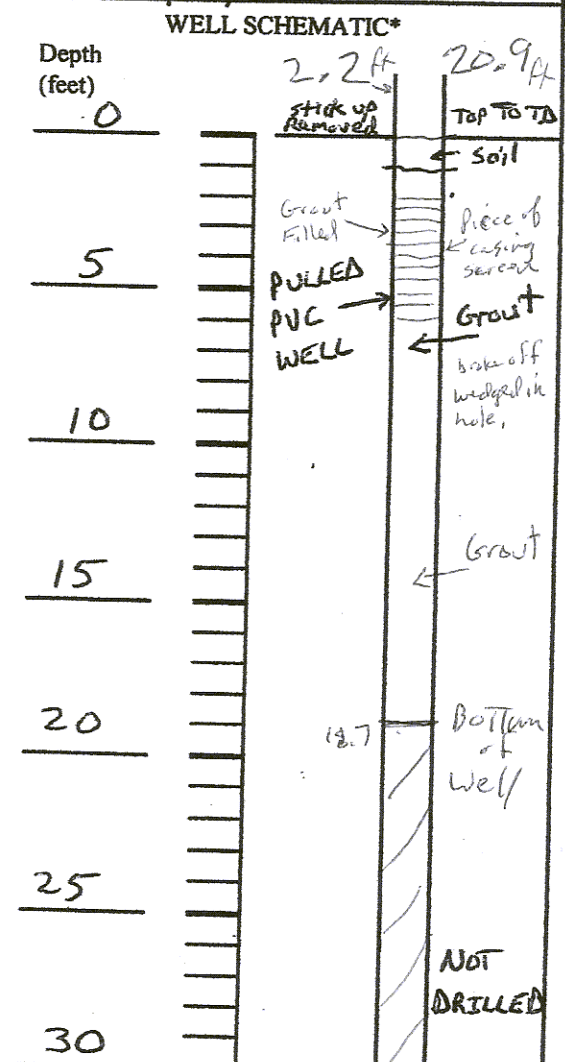
Cement type Type I Portland

Quantity of bentonite used (lbs.) 10 pounds

Quantity of calcium chloride used (lbs.) \_\_\_\_\_

Volume of grout prepared (gal.) \_\_\_\_\_

Volume of grout used (gal.) 15 gal



**COMMENTS:** Depth to water = 12.80 ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top. Bottom 5 ft of screen broke off.

\* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Geologic North Star wedged in hole. Added grout through screen. Grouted in place. Above water table.

Drilling Contractor \_\_\_\_\_ Department Representative \_\_\_\_\_



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MJ119-1</u>																																																
Site Location: <u>SEAD 119</u>	Driller: <u>David Lions</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
	Date: <u>1/27/2011</u>																																																
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\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 119-2</u>																																																
Site Location: <u>SEAD-119</u>	Driller: <u>David Lopez</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>																																																
Date: <u>1/27/2011</u>																																																	
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\* 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



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

WELL DECOMMISSIONING RECORD	
Site Name: <u>SENECA ARMY DEPOT</u>	Well ID: <u>MW 119-3</u>
Site Location: <u>SEAD-119</u>	Driller: <u>David Lyons</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Hillman</u>
Date: <u>1/26/2011</u>	
DECOMMISSIONING DATA (Fill in all that apply)	WELL SCHEMATIC* 2 ft
<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	
<u>CASING PULLING</u>	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in.)	
<u>CASE PERFORATING</u>	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
<u>GROUTING</u>	
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: <u>Depth to water = 3.41 ft. from TC</u> <u>Knocked out end plug. Loaded casing with</u> <u>grout. Pulled casing. Recovered all casing.</u> <u>Topped off grout.</u>	* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

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

WELL DECOMMISSIONING RECORD																																																	
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Site Location: <u>SEAD 121 E</u>	Driller: <u>Scott Breeds</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 7.90 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 12/C-4</u>																																																
Site Location: <u>SEAD 12PC</u>	Driller: <u>Joe Menzel</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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\* 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



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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12/C-5</u>	
Site Location: <u>SEAD-12/C</u>	Driller: <u>Joe Menzel</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/22/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>	<p>Depth (feet): 0, 5, 10, 15, 20, 25, 30</p> <p>Labels: 1.5 ft stick up removed, 10.2 ft TOP TO TD, Soil &amp; Concrete, GROUT, PULLED PVC WELL, Bottom of well, NOT DRILLED</p>	
<u>CASING PULLING</u> Method employed <input type="checkbox"/> <u>Grout, Pull, Grout</u> Casing retrieved (feet) <input type="checkbox"/> <u>10.2 ft</u> Casing type/dia. (in.) <input type="checkbox"/> <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLS) <input type="checkbox"/> <u>1-8.7ft</u> # of batches prepared <input type="checkbox"/> <u>1</u> For each batch record: Quantity of water used (gal.) <input type="checkbox"/> <u>18</u> Quantity of cement used (lbs.) <input type="checkbox"/> <u>2 bags</u> Cement type <input type="checkbox"/> <u>Type I Portland</u> Quantity of bentonite used (lbs.) <input type="checkbox"/> <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <input type="checkbox"/> <u>9 gal</u>		
<b>COMMENTS:</b> <u>Depth to water = NA ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		

Geologic North Star  
Drilling Contractor

Department Representative

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

**WELL DECOMMISSIONING RECORD**

Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW12/C-6</u>
Site Location: <u>SEAD 121C</u>	Driller: <u>Joe Menzel</u>
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>
	Date: <u>9/22/10</u>

**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 GROUT, PULL, GROUT

Casing retrieved (feet) 9.8 FT

Casing type/dia. (in.) 2" PVC

**CASE PERFORATING**

Equipment used \_\_\_\_\_

Number of perforations/foot \_\_\_\_\_

Size of perforations \_\_\_\_\_

Interval perforated \_\_\_\_\_

**GROUTING**

Interval grouted (FBLs) 1-9.8

# of batches prepared 1

For each batch record:

Quantity of water used (gal.) 18

Quantity of cement used (lbs.) 2 bags

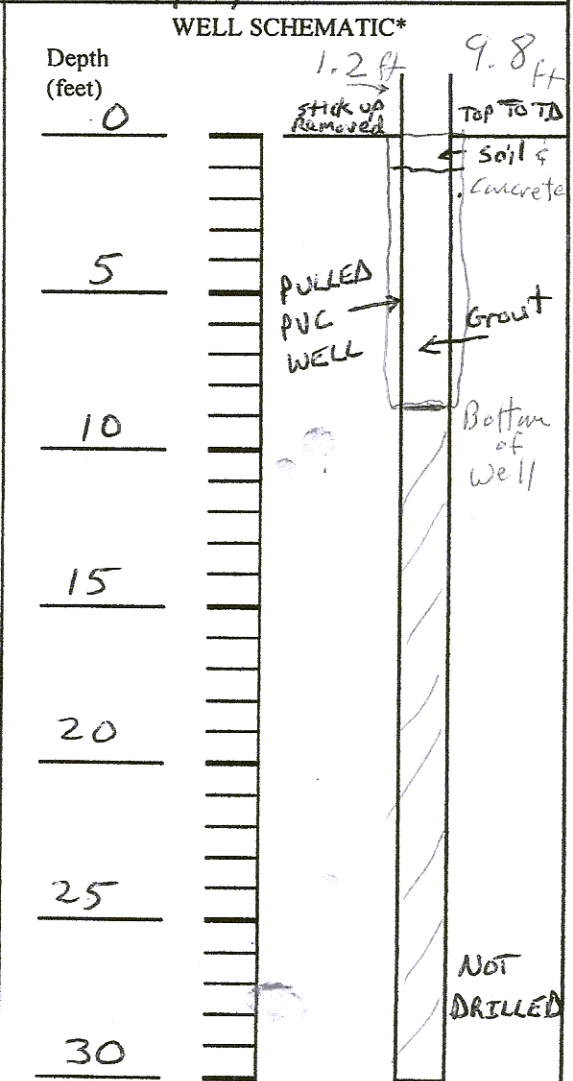
Cement type Type I Portland

Quantity of bentonite used (lbs.) 10 pounds

Quantity of calcium chloride used (lbs.) \_\_\_\_\_

Volume of grout prepared (gal.) \_\_\_\_\_

Volume of grout used (gal.) 9 gal



**COMMENTS:** Depth to water = 6.86? Ft from TOC  
Knocked out end cap. Loaded casing with grout.  
Pulled casing. Grouted remaining borehole.  
Added soil on top.

\* 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



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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 122B-1</u>																																																
Site Location: <u>SEAD 122-B</u>	Driller: <u>Steve Laramée</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 8.35 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top. Screen broke off in hole.</u>  <u>Grouted in place.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD																																																	
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW 122B-2</u>																																																
Site Location: <u>SEAD 122B</u>	Driller: <u>Steve Laramée</u>																																																
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>																																																
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<p><b>COMMENTS:</b> <u>Depth to water = 7.73 ft from TOC</u>  <u>Knocked out end cap. Loaded casing with grout.</u>  <u>Pulled casing. Grouted remaining borehole.</u>  <u>Added soil on top.</u></p>																																																	

\* 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

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

WELL DECOMMISSIONING RECORD		
Site Name: <u>Seneca Army Depot</u>	Well ID: <u>MW/22B-3</u>	
Site Location: <u>SEAD 122B</u>	Driller: <u>Steve Laramee</u>	
Drilling Company: <u>Geologic North Star</u>	Inspector: <u>Scott Dillman</u>	
	Date: <u>9/24/10</u>	
<b>DECOMMISSIONING DATA</b> (Fill in all that apply)	<b>WELL SCHEMATIC*</b>	
<u>OVERDRILLING</u> Interval Drilled <input type="checkbox"/> Drilling Method(s) <input type="checkbox"/> Borehole Dia. (in.) <input type="checkbox"/> Temporary Casing Installed? (y/n) <input type="checkbox"/> Depth temporary casing installed <input type="checkbox"/> Casing type/dia. (in.) <input type="checkbox"/> Method of installing <input type="checkbox"/>		
<u>CASING PULLING</u> Method employed <u>Grout, Pull, Grout</u> Casing retrieved (feet) <u>16.4 ft</u> Casing type/dia. (in.) <u>2" PVC</u>		
<u>CASE PERFORATING</u> Equipment used <input type="checkbox"/> Number of perforations/foot <input type="checkbox"/> Size of perforations <input type="checkbox"/> Interval perforated <input type="checkbox"/>		
<u>GROUTING</u> Interval grouted (FBLs) <u>1-16.4 ft</u> # of batches prepared <u>1</u> For each batch record: Quantity of water used (gal.) <u>18</u> Quantity of cement used (lbs.) <u>2 bags</u> Cement type <u>Type I Portland</u> Quantity of bentonite used (lbs.) <u>10 pounds</u> Quantity of calcium chloride used (lbs.) <input type="checkbox"/> Volume of grout prepared (gal.) <input type="checkbox"/> Volume of grout used (gal.) <u>8 gal.</u>		
COMMENTS: <u>Depth to water = 6.64 ft from TOC</u> <u>Knocked out end cap. Loaded casing with grout.</u> <u>Pulled casing. Grouted remaining borehole.</u> <u>Added soil on top.</u>		* 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